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Discussion paper on Draft Recommendation on AI literacy

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Context

The Council of Europe Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law (2024) also recognises "the need to promote digital literacy, knowledge about, and trust in the design, development, use and decommissioning of Artificial Intelligence systems":

> *Each Party shall encourage and promote adequate digital literacy and digital skills for all segments of the population, including specific expert skills for those responsible for the identification, assessment, prevention and mitigation of risks posed by Artificial Intelligence systems. (Article 20 – Digital literacy and skills)*

Meanwhile, international agencies (including the European Union, UNESCO and the OECD) have also identified a need for people to achieve an appropriate level of what they refer to as 'AI literacy'. For example, the EU AI Act (2024, Article 4) states:

> *Providers and deployers of Artificial Intelligence (AI) systems shall take measures to ensure, to their best extent, a sufficient level of AI literacy of their staff and other persons dealing with the operation and use of AI systems on their behalf.*

While AI literacy might be seen as a subset of digital literacy, it warrants distinct attention due to its human-like presentation: **AI systems are the first and only technologies to successfully mimic human behaviours, communications, and decision-making processes**, often leading to the misperception that they operate with human-like intentions or understanding. This anthropomorphic quality raises specific challenges in how individuals interpret, trust, and critically engage with AI systems. Accordingly, learning about AI and its impact on humans is crucial.

Defining AI literacy

Here, we will use 'AI literacy' as shorthand for the key output of the Committee of Ministers Recommendation ("to ensure that teaching and learning about AI incorporates the impact of AI on human rights, democracy and the rule of law").

AI literacy has been referred to as 'teaching and learning about AI' (in contrast to 'teaching and learning with AI', i.e., the use of AI in educational contexts, which is otherwise known as AIED).[1] However, focusing on teaching and learning (what the education philosopher Biesta calls the 'qualification' role of education, 2011[2]) tends to distract from the other two equally important roles of education: to enable each individual student to become the best that they can become (what Biesta calls 'subjectification'), as well as enabling them to participate most effectively in the broader society and culture ('socialisation'), neither of which are usually addressed by existing approaches to AI literacy. Accordingly, in order to ensure that AI literacy addresses all these roles of education, it is important to reconceptualise it as 'education about AI'.

AI literacy (or education about AI) may then be defined as comprising three dimensions: technological, practical, and human.

The **technological** dimension:	How Artificial Intelligence works and how it might be developed.
The **practical** dimension:	How Artificial Intelligence can be used effectively.
The **human** dimension:	The impact of AI on humans, human rights, democracy and the rule of law.

Any particular AI topic raises issues related to each dimension, in other words they are all fundamentally interlinked (e.g., it is simply not possible to safely use AI without having sufficient awareness of how the particular AI system works or its impact on humans). Nonetheless, for

1. For example, see https://www.teachai.org.
2. Biesta, G. J. J. (2011). Good Education in an Age of Measurement: Ethics, Politics, Democracy (1st edition). Paradigm Publishers.

analytical reasons (so that we can better understand and talk about AI), for comprehension reasons (to make it relatively easy to understand and remember) and for practical reasons (so that nothing gets forgotten and to make it relatively easy to implement), the three dimensions comprise a useful overview. It is also an approach that allows for a contextualised focus on AI and education and human rights, democracy and the rule of law.

The rarely fully considered human dimension is central to the proposed AI literacy, for three reasons: (i) to ensure that AI literacy addresses the Council of Europe's core values, (ii) because rarely is sufficient emphasis given to it, and (iii) because AI technical knowledge and practical skills quickly become outdated.

The technological dimension of Artificial Intelligence

How Artificial Intelligence works and how it might be developed.

For more than a decade, there has been a wide range of online courses that set out to teach AI (i.e., that aim to help develop a version of AI literacy). Many of these have been developed by BigTech (e.g., IBM, Apple, HP); others have been developed independently (e.g., in the USA, 'AI4K12'; in Europe, 'Elements of AI'). Such courses usually focus on the technological dimension of AI (e.g., algorithms, data and statistics), sometimes with limited reference to the practical dimension (e.g., how to code), but rarely do they address in any substantive way 'the impact of AI on human rights, democracy and the rule of law'.

The practical dimension of Artificial Intelligence

How Artificial Intelligence can be used effectively.

Since the public debut of GenAI, a huge number of websites and courses have appeared dedicated to teaching and learning how to use AI effectively (although they usually mean how to use GenAI, which is only a subset of AI). These websites and courses frequently involve promoting GenAI's use and the writing of prompts. Rarely do they provide sufficient information about the technological dimension of AI (e.g., how text GenAI only predicts the likely next word, and has no way of 'knowing' whether the predicted word is 'correct'), and rarely do they substantively address the human dimension (in particular, 'the impact of AI on human rights, democracy and the rule of law'). When they do mention human issues (e.g., ethics), such issues are mostly presented as something that can easily be, and will soon be, addressed technically (aspirational claims that are disputed by many leading researchers). In addition, it is rarely clear what is meant by 'use effectively', as effective in one context (e.g., the use of GenAI in classrooms) might also have unintended consequences (e.g., users becoming over-reliant on GenAI).

The human dimension of Artificial Intelligence

The impact of AI on humans, human rights, democracy and the rule of law.

Courses on AI rarely sufficiently address the impact of AI on humans (on students, on teachers, or on society more broadly) or on human rights, democracy or the rule of law. This is especially concerning given that the impact of AI is so complex. For example, it may be intended or unintended, direct or indirect, positive or negative.

For example, while AI systems might be designed to support students, they might unintentionally worsen student anxieties (e.g., should students use GenAI? If they do, will they be found out for cheating; if they do not, might they still be accused of using GenAI?). Meanwhile, AI systems might be directly human-facing (e.g., AI systems used in classrooms) or indirectly human-facing (e.g., AI to develop new pharmaceuticals). Similarly, AI systems might have negative impacts (e.g., due to the massive consumption by AI systems of power and water, and the emission of climate-impacting gases during the training of AI models) but also positive impacts (e.g., by monitoring deforestation, water pollution, and climate change).

The complexity of the human dimension of AI only serves to reinforce its central importance in AI literacy.

Critical human topics that should be addressed in any AI literacy include, but are not limited to: the impact of AI on human well-being, gender, dignity, inclusion, trust, education, and the digital divide; the implications of AI for human agency, autonomy, privacy, equity, diversity, and discrimination; 'fake' news (mis-, dis-, and mal-information), the history of AI (including the role of the military), the ghost workers of AI, surveillance, election interference, and the impact on jobs; the implications for sustainable development and the impact on both the environment and the climate; and the broader implications of AI for human rights, social justice, democracy and the rule of law.

In addition, it raises the question of whether the use of AI in education is even acceptable, given the widely known challenges, and given that it diverts resourcing away from more prosaic activities (such as teacher training and school buildings).

None of these issues are entirely new; and, indeed, all probably should have been included in digital literacy (which often tends to focus on the practical dimension of digital technologies). However, the increasing ubiquity of AI, the consolidation of power by the big AI companies (with its profound implications for democracy), and the first-of-a-kind and misleading human appearance of AI, all reinforce the urgency of properly considering all these issues and more.

However, as noted, the human dimension of AI is not only negative. Positive and mostly indirect impacts should be addressed as part of the human dimension of AI, including the development and use of AI systems for monitoring ocean health, reducing energy waste in industries, identifying crop diseases, optimising traffic flows, detecting plastic pollution in oceans, managing forest fire risks, and so on.

AI and other literacies

Over recent decades, reflecting evolving technology and the demands of society, many 'literacies' have been proposed; including, media literacy, information literacy, data literacy, and digital literacy, to name just a few.[3] Among these, digital literacy has emerged as a cornerstone, as a capacity that individuals need to navigate and critically evaluate information in our increasingly digital world. However, this proliferation of literacies has led many to question the value of yet another literacy (i.e., AI literacy), especially in the context of digital citizenship education, with its clear emphasis on responsible and ethical digital participation for all. However, referring to 'AI literacy' is still useful, if only because the ambitions and framing of an AI literacy are likely to be relatively easily understood.

Competences vs Awareness

Most attempts to address what might be called AI literacy emphasise building and defining 'competences.' However, focusing on competences can be misleading as it easily emphasises advanced technical knowledge and skills and overlooks the importance of awareness.

In fact, competences and awareness serve distinct but complementary roles in understanding, particularly in the context of complex technologies such as digital technologies such as AI and other frontier technologies. Competences tend to refer to specific knowledge or skills that can be measured or assessed (e.g., in the context of AI, the ability to write an AI algorithm). However, these specialised skills are rarely relevant or necessary for everyone. Awareness, on the other hand, is essential for all. It involves a broader understanding of concepts and principles, enabling individuals to critically engage with and make informed decisions about the technology. In the case of AI, it is not essential for most people to possess the technical competency to develop algorithms. What is crucial, however, is their awareness of how these algorithms are created, the data they rely on, and the potential biases and impacts they might introduce. This awareness, which might be helped by some engagement with the writing of simple algorithms (as a means to achieve awareness, rather than as a competence outcome),

3. Bawden, D. (2001). Information and digital literacies: A review of concepts. Journal of Documentation, 57(2), 218–259. https://doi.org/10.1108/EUM0000000007083.

might help equip individuals to evaluate AI systems responsibly and make informed judgments about their use.

Conclusion

The proposal here is that a **three-dimensions of AI literacy (technological, practical, human) should be developed and refined to provide member states with a foundation for their work developing and disseminating a version of AI literacy appropriate for their local context**.

It should be developed **for teachers, students, and ordinary members of society** (including citizens, refugees and people with protected characteristics, as well as policy makers, industry, and NGOs). It is not for those who wish to become AI engineers for whom alternative approaches are probably more suitable.

It **should be relatively high-level** (it is to provide guidance, not to dictate content or approaches). In other words, it should outline components, connections between the components, and some examples, but should not be fully detailed nor didactic.

The final Committee of Ministers Recommendation will be informed by the final three-dimensions AI literacy approach, which would also be included in the Recommendation's Explanatory Memorandum.

In summary:

- Today, **AI literacy (whatever it is called) is crucial**: crucial for teachers, for students, for broader society, for human rights, for democracy, and for the rule of law.
- **Most existing approaches to AI literacy do not substantively address the human dimension of AI**, and do not substantively address AI's growing impact on human rights, democracy, and the rule of law.
- **A focus on the three dimensions of AI (technological, practical, human) will be unique to the Council of Europe**, will help Member States develop approaches to AI literacy appropriate for their local contexts, and will help to ensure that the human dimension (including AI's impact on human rights, democracy and the rule of law) is neither omitted nor under-emphasised.
- **A focus on competences can be limiting and misleading, and overlooks the critical importance and appropriateness of fostering awareness of the human and other dimensions of AI.** While few need to be able to write AI algorithms, everyone needs an awareness of how AI algorithms work in broad terms, so they can make informed decisions about if, when and how to use them. Meanwhile, everyone also needs a critical awareness of the many ways in which AI systems (including but not only GenAI) impact humans, human rights, democracy, and the rule of law.

Given the need for AI literacy, the limitations of existing approaches, and the core values of the Council of Europe, **this is a unique opportunity for the Council to take a leading role, to promote a unique human-centric AI literacy (education about AI), based on the three-dimensions framework,** which has the potential to support and protect everyone (especially students and teachers) from the impact of AI across and beyond Europe.