EUROPEAN
COUNCIL FOR
STEINER WALDORF
EDUCATION

Think piece on AI and the Future of Education[1]
Brussels, 30 April 2025

What is School for?

Waldorf education is a world-wide movement for early childhood education and care and primary and secondary school education. It is to be found on all continents as it is culturally adaptable. In Europe, Steiner Waldorf schools are organised under an umbrella organisation, the European Council for Steiner Waldorf Education, bringing together 28 national associations of Steiner Waldorf schools, including altogether over 800 primary and secondary schools. The organisation's aim is to represent Steiner Waldorf education in Europe and to support its members by providing capacity-building, networking, and content through projects.

Part of the Generative Principles of Steiner Waldorf Education is that it "aims to enable children and young people to develop into autonomous, socially responsible adults, capable of acting peacefully, ecologically, (...) [and] ethically out of individual initiative based on their own powers of judgement and insight." This is carried out by understanding teaching as an art, where teachers approach each child as an individual learner and as a member of a particular class unit with its unique dynamics, by nurturing relationship and resilience, by starting from experiential learning and moving towards conceptual understanding, by practicing art as a method for creation and innovation, and by using assessment methods *for* learning. In this paper, we discuss the dynamics between such understanding of education and the emerging technologies, mainly focusing on artificial intelligence.

Education as a process of developing human intelligence vs. artificial intelligence

Learning is not solely an outcome, it is a process in which every step has its own importance. The important steps include those that prove causations, natural laws, logical thinking or social/cultural norms that, once understood, can be applied in new situations and create new solutions. Art, a greatly valued part of Waldorf pedagogy, is another practice that helps create new solutions in new situations. This ability is generally understood as the highest proficiency level of a skill. We understand that the role of education systems is to develop learners' own capacities, to bring them as close to this proficiency level as possible in as many of their capacities as possible.

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Since the future holds unpredictable challenges, it is the crucial role of education to equip children and young people with as rich experiences and skills as possible, through which they can develop their thinking, habits of mind, and dispositions that they can use in the unpredictable circumstances of their future to find their way in new situations and to think of new solutions, however big or small those are.

When asked “What is AI most useful for in general?”, on 23 April 2025, ChatGPT answered that “the key strength of AI is scaling intelligence - doing things that normally require human thought, but at machine speed and scale.” So AI is a tool that can provide an answer quickly, it is a shortcut to a solution, and not a tool to make (human) intelligence bigger or create newance.

AI is a tool that can save time and energy but it might also “numb” the brain. It does not help the brain to think and train itself, it provides ready-made solutions. The role of education should be to train the brain in order to gain more functions, in order for the learner to become more intelligent and capable in their own capacity. When using AI, the brain is not incentivised to think, and thus instead of growing, it slowly loses its capacities.

Artificial intelligence technology disturbs the learning process. If we aim to develop human intelligence in a child, we should be cautious about using such tools in education, especially before the secondary-school age.

Preserving the joy of life-long learning and self development

The joy of learning is in discovering new experiences from the real world through our senses. This is what AI cannot provide, but it can disturb it by providing artificial/digital presentations of the world. Experiential learning[2] is the one that can lead to new discoveries and preserve the fundamental joy of learning[3].

In order to design education that is future proof, it needs to be centred around humans and their abilities. We need to preserve in children and young people the joy of learning in order to keep them interested in life-long learning processes and continuous development.

Digital technology and AI leaving their mark on education: the balancing act

As stated in the UNESCO call for think pieces on AI and the Future of Education, “the technology is forcing educational institutions across the world to reconsider what knowledge,

[2] M. Rawson, 2021. *Blended Learning in Steiner Waldorf Schools.* European School Education Platform. https://school-education.ec.europa.eu/en/discover/viewpoints/blended-learning-steiner-waldorf-schools
[3] M. Rawson, 2021. *Steiner Waldorf Pedagogy in Schools: A Critical Introduction*. Routledge.

skills, values, and behaviours are most important for life and work." This is how we would answer this challenge:

1. Children must have and be aware of their capacity to think freely, make conclusions independently, and have confidence in their own ability to tackle life. AI should not be a part of their education until those capacities are developed, and only then can they use AI critically, as a tool.

2. AI is reshuffling information from the past, and although it can offer new solutions, it cannot introduce new ideas. This is what humans can and should do in order to shape a future that is different and better than the present. Creating new ideas, creative thinking should be given much attention, as this is what humans can do exclusively.

3. Negative effects of digital technology, from sedentary lifestyle to disturbed mental health due to addictions or exposure to inappropriate content online, should be taken into account when rethinking education in the digital age. Schools should be places where children can balance out those negative effects, by being offline and off-screen, by using their physical bodies more, by connecting with their environment through all senses, by interacting with others, learning empathy, and building trusting relationships with adults and peers. Schools also have the duty of care to discuss these issues and help parents to create safe places.

AI as part of education: how to teach it and use it?

Our understanding of the role of digital technology in education is in its capacity to benefit development and prepare children and young people for purposeful and responsible use of it as they mature. To develop their digital competences, we believe children need to start from developing predispositions using analogue tools and real-life experiences, before gradually introducing digital tools. In doing so, learners get to understand how technology works, escape the mystification of it, and see it as a tool to use for their own needs. Teachers and children should learn that artificial intelligence is not truly intelligent, it is just a more complicated set of programmes. Then, as with any other technology, they can use AI as a tool and not as an incompetent substitute for their own thinking and innovation.

To support teachers, parents, and wider-school communities in establishing a constructive digital education plan, we have developed the HERMMES (Holistic Education, Resilience and Media Maturiy in Educational Settings) approach to digital education. It consists of guidelines, community and culture remarks, a curriculum, a background and rationale document, and training for all stakeholders in digital education, including parents. The HERMMES approach shows how digital competences can and should be gradually developed from a young age, but that a lot can be done by analogue tools before employing digital ones. The key capacities

needed for meaningful use of AI are discernment and reflexive criticality[4] (a.k.a. critical thinking). Discernment is closely related to aesthetic judgement, the perception of qualities, and in Waldorf education it is considered as a 'teachable' and 'learnable' capacity[5]. Next to it, we recognise capacities such as creativity, social and emotional skills, and computational thinking that are highly relevant for appropriate use of digital technology and can all be taught in analogue ways. An analogue approach helps prevent digital risks, fosters resilience and well-being, and offers a profound understanding of digital technology.

AI technology can still find its right place in educational settings. From teaching pupils how it works using analogue methods (e.g., The intelligent piece of paper, CSunplugged) to using AI-powered tools to support school administration. Teaching the use of AI is also important, although once all the preconditions are met, taking into account how user-friendly AI tools are nowadays, these skills do not need much time to acquire. However, the ability to employ critical thinking is one of key preconditions for the purposeful use of AI in order to assess the solutions offered by it. Critical thinking, or rather discernment (to show good judgement about the quality of something, such as information), should thus be cultivated, schooled, and developed before a young person starts to interact with AI.

[4] Reflexive criticality is understood as the ability to be aware of the structures that influence us and how to emancipate oneself from these. It is not really an ability to be taught school education but it certainly is an important capacity for a teacher.

[5] This occurs in Waldorf education teachings in three stages. In early years, aesthetic judgement is caught not taught, through participation in communities of practice. In primary education it is taught through guided participation in learning communities. In secondary school, it is learned through apprenticeship in communities of inquiry.