

Reflections on Competences for Human Flourishing

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1 Introduction

“In the age of artificial intelligence, the most vital human skill is not in competing with machines, but in mastering the art of unscripted creativity—a dance of innovation and imagination that transcends the algorithms of automation.”

- Artificial Intelligence, ChatGPT 3.5, as an answer to prompt: “Create a short, aphorism-like philosophical statement on what the most important human skill will be in a future dominated by AI.”

In autumn 2023, publicly available AI systems are already advanced enough to create a well-suited – and, for a human reader, a deeply meaningful – aphorism to start a reflection paper on vital human skills in the age of AI. This underlines the urgency of a global discussion on these central future human skills and the institutional ways to develop and nurture them in education. Although AI is far from being the only driver of the need to redefine education, it is one of the large forces reshaping the educational landscape in the upcoming decades marked with also other rapid technological advances combined with growing social differentiation, looming ecological emergencies and other yet unknown transformations.

This is a reflection paper on the three central future competencies mapped out in the report “Education for Human Flourishing” By Michael Stevenson 2022/2023: adaptive problem-solving, ethical decision-making and aesthetic perception. These competences have been identified by high performing OECD countries’ shared HPST development project as competences that are particularly important to develop in the future, in order to increase our educational systems’ potential to support the flourishing of new generations of students.

These skills are seen to flow from the idea of *individual and collective human flourishing*, which has been identified as the key goal for educational systems. In other words, the development work is not merely done to equip future generations to be competitive in the age of machines or increase the efficiency of future working generations, but the goal is rather to encourage and support human flourishing and the experience of a meaningful life in the future. However, new technologies have been especially considered as an important context for this work, as they transform the landscape in which human flourishing happens.

In this paper, we aim to reflect on this goal and the relationship that the identified key competences have with the idea of human flourishing. The purpose of our reflection is to provide discussion points for joint work within the HPST project and meeting in Vancouver in January 2024.

The main questions that have guided this reflection paper have been formulated together with the OECD (2023) and are following:

1. Why and how do these competences flow from the idea and framework of education for human flourishing; what is the link between human flourishing and these competencies? Why are these competences implied by education for human flourishing?
2. How might these competences relate to the orientation of education for human flourishing and sense of purpose?

3. Are we missing any competences? If we strive for education for human flourishing, what else should there be? Should we consider for example futures literacy? AI literacy?
4. What is the relationship between these competences? They do not stand alone: what are they connected to, and what are their prerequisites? What do they consist of? We do not need to think about measuring these skills, but rather about the analytical framework that underpins the complex competency. For example, if we are talking about ethical decision-making, which values, attitudes, knowledge and skills (both cognitive and non-cognitive) does one need to do that?
5. How do these competences relate to basic skills or foundational disciplines? Are we correct in thinking that the right point of time to develop and nurture these skills is mid-teens, after the youth have absorbed and mastered the foundation of core skills or foundational literacies in their previous studies?

This reflection paper is not strictly structured around these questions, but the questions are considered throughout the short chapters in in the paper. First, after a brief recapitulation of the three competencies by the OECD (2023), we discuss the idea of flourishing and how we understand its relation to the changes that we can identify as important drivers for educational change. After that, we briefly discuss the importance of collective flourishing and planetary point of view or post-humanist discourse. We then shortly analyse the relationship between flourishing and the three competences, as well as try to identify some competences which could possibly be seen as complementary to the current framework. Lastly, we briefly look into each of the three future competences and consider them with the expertise of our government and research experts.

The paper has been produced by the Finnish Ministry of Education and Culture task group, together with selected Finnish researchers within the field of education, philosophy and aesthetics. All contributors are listed in the beginning of this document as authors, but the Ministry group of experts is responsible for the final content and form of the report.

1.1 The three competences: Background excerpts adapted from the Education for Human Flourishing by the OECD (2023)

“High Performing Systems for Tomorrow (HPST) was established in 2018 for jurisdictions that achieve outstanding results in PISA and share a commitment to exploring the next frontiers in education, for their own countries and the world.

The High Performing Systems for Tomorrow project has identified three potential competencies, each with a suggested approach to assessment that might underpin education for human flourishing. They are adaptive problem-solving, ethical decision-making and aesthetic perception.

The first reflects Aristotle’s emphasis on rationality and contemplation of the external world; the second his commitment to moral thinking; and the third his interest in nurturing a sense of awe. These competencies together hold out the prospect of a life that is meaningful to the individual and contributes significantly to better societies and economies. They all draw on intelligences that are and may remain the domain of humans: higher cognitive intelligence, social intelligence, and metaintelligence.

[...]

All three of the suggested competencies build on deep disciplinary knowledge, skills, and attitudes, in the sciences, social sciences and humanities, and a range of cross-cutting skills, including the social and emotional. They are not substitutive. Equipped with competencies in adaptive problem-solving, ethical decision-making and aesthetic perception, young people can shape their prior learning and orchestrate it to serve broader objectives.

What basis is there for believing that people equipped with these competencies could contribute to the transformation of their communities, societies, and economies? It may be this broader contribution that justifies the interest of education systems in the concept of human flourishing.

Adaptive problem solving is closely related to the idea of innovation as the route to new value. At different speeds and with different emphases, economies around the world have become more innovative and entrepreneurial, in pursuit of growth and increased productivity. Critical to their success will be people who think creatively about the development of new products, the introduction of new enterprises and the deployment of new business models.

The imperative of reconciling diverse perspectives and interests, in a structurally imbalanced world, will require young people to become ethical decision-makers, adept in handling tensions, dilemmas and trade-offs. The sphere in which they do so may be the family; the community; or the workplace. An ethical perspective on relationships with customers, colleagues, and competitors, on the social value of products and services and on the wider impact of producing them will be an increasing dimension of economic activity.

A sensitivity to what is beautiful is the most “inward” of the competencies. It will be a vital source of depth, perspective, compassion, and awe: inner resources that strengthen the individual in dealing with the external world. For life and work, tomorrow’s young people will need to be innovative, responsible, and sensitive to the sublime. They will be the creators of the products, services, and models of the future. They will be alert to the claims that others make on us. They will be open to the deepest emotions that human life confers.”

Excerpts from Education for Human Flourishing – Michael Stevenson 2022, p. 7-11.

2 Flourishing and future skills

2.1. Goals and purposes: philosophical roots and societal drivers of the flourishing discourse

The report Education for Human Flourishing, later also shortened as the EHF report, outlines the need for new skills both from the standpoint of a philosophical need to expand our understanding on the purpose of education, and as a way to prepare societies and educational systems to societal, technological and ecological transformations that require new types of competences. Both aims are related to each other, especially through the idea that education should support a meaningful life and to provide a sense of purpose.

The philosophical roots for the intrinsic value of human flourishing as a goal for education can be seen throughout many traditions of thought. Thus supporting sense of purpose and encouraging growth into adults with strong sense of meaningful life and a deep *bildung*, or Finnish “*sivistys*” through education for comprehensive human flourishing is a deeply rooted idea in several philosophical traditions throughout the world. While their conceptualisations and approaches differ, these traditions can be understood as climbing the same mountain from different sides. Similarities

in ideas between the differing conceptualisations and characterisations of human flourishing can be identified through examining psychological universals through cross-cultural work (Majid, 2023; Norenzayan & Heine, 2005).

The EHF framework utilizes Aristotle's virtues for defining the flourishing competences, along with other voices, for example through Kristjánsson's analysis on Ubuntu and Buddhist traditions and collective flourishing. In recent years, also post-humanist views have been included in the global discourses for considering the flourishing of humans as individuals, and as a collective within the context of a flourishing planet. We would suggest adding even further references to philosophical traditions and current discourses, as well as current empirical evidence and theoretical accounts of what characteristics account for a meaningful life. Utilising these as a common point of departure to argue for the intrinsic value for human flourishing may strengthen the global understanding for the core arguments for the EHF project.

On the other hand, the societal changes driving the need to rediscover education are multidimensional. Technological changes - especially those related to artificial intelligence - structural changes in work and the economy, and developments related to the social, economic and ecological sustainability of society can be identified as significant global and local trends throughout the OECD countries. The content and relevance of education need to be redefined in order to meet the challenges of the future.

Future working life will be unpredictable and will require not only adaptable skills but also a reassessment of the relevance of education and training in the event that an increasing proportion of the future generation is no longer employed in traditional paid employment. It is possible that in the future, the education system must be able to provide experiences of meaningfulness and motivation to learn, even if in the future education does not prepare all people for the world of traditional labour, but the role of education is rather in sustaining communities and multiple meaningful identities for many individuals.

The goal of promoting ecological sustainability also requires new skills and new ways of thinking and acting, so that the promotion of economic prosperity does not come at the expense of the planetary boundaries. At the same time, social sustainability requires supporting equal opportunities for pupils. Deteriorating core skills and growing inequalities highlight the need to develop our educational capabilities to support equal opportunities in education in new ways in both the core skills and the future skills – or human flourishing competences – in order to counteract the risk of ever-growing societal inequalities exacerbated by education.

2.2. Individual, collective and planetary flourishing: equity and planetary perspectives as prerequisites of flourishing?

The EHF report considers collective flourishing as an integral part of flourishing; that flourishing individuals also support the flourishing of others. The October 23 version of the report states (p. 7-8): *“The emphasis on individual flourishing should not suggest that the flourishing of others does not matter. Looking at three non-European approaches to flourishing, Kristjánsson underlines the central importance of caring for and about others. [...] Education for human flourishing concerns one's own flourishing and the flourishing of others.”*

Also the planetary or post-humanist and ecosocial point is made: “The crisis of the planet extends these obligations. First, it insists on our responsibilities to other living species. Second, it prompts us

to consider the interests of future lives.” (p.7-8) The report then goes to summarize the social equity goal and the collective, planetary perspective by stating: ”Education for human flourishing therefore restates and deepens the concept of equity in education. Over recent years, equity policies have sought to enable students, irrespective of background, gender and orientation, to achieve benchmark measures in reading, maths and science. In future, they might seek to enable students to develop academic, caring and creative capabilities; and to find and pursue their purpose, through learning.”

We see these points as very valuable, and agree that the future driven by large-scale societal transformations and technological change poses a new challenge for equality in education. PISA assessments have already demonstrated that the socio-economic background of pupils is associated with learning outcomes in core skills such as literacy or maths in all countries. This relationship may be even stronger for the applied skills needed in effectively managing in a world transformed by new technologies and to effectively utilize AI.

The logic of this statement is that these skills build upon the core skills and are in many ways more applied and tied to a wider range of other skills than the core skills. They are thus prone to even more differentiation between pupils than core skills. On the other hand, families with stronger socio-economic position and high socio-cultural capital may be able to transfer these skills to their children more effectively than other parents, thus creating a strong link between socio-economic background and future skills.

There may be a risk that if the school systems are not able to facilitate the needed new adaptive and socio-emotional skillsets or well-being skills, individual backgrounds may start playing an even larger role in educational success and life paths. Without the identification of new objectives, there is a risk that educational inequalities will become even more pronounced if basic education is unable to provide all pupils with a knowledge base relevant to the changing society.

This means that supporting a wide range of “future skills” or skills linked to human flourishing is vital not only for individual and collective flourishing, but also for societal equality and equal opportunities. This also links supporting these skills to social sustainability and development of democracy. These arguments are even further developed in the newer 2023 iteration of the EHF report, and we find this very central for arguing for these new skills. If the school cannot recognize the most central skills needed in the future and support and equalize learning in these fields, we may see an unprecedented widening of societal gaps and new levels of social and economic polarization. This goal is also made more urgent by the idea that human flourishing requires collective flourishing, including even ecological, planetary flourishing.

2.3 Adaptive problem-solving, ethical reasoning and aesthetic perception: How do the competencies flow from the framework of human flourishing?

The focus on human flourishing has gained noticeable attention in the recent years also in the field of education. The current well-being education movement has highlighted human flourishing as a central goal of education, challenging the more technocratic approach with a focus on making students productive workers to uphold economic growth (de Ruyter et al., 2022; Kristjánsson, 2017; Ryan et al., 2023; Stevenson, 2022). Flourishing involves ongoing healthy growth and functioning of the person where they are able to fulfil their potential and experience well-being (Martela, 2023).

In definitions of human flourishing (e.g., de Ruyter et al., 2022; Kristjánsson, 2017; Stevenson, 2022), three dimensions can be distinguished: Subjectively experienced well-being, psychological functioning, and foundational capacities and virtues through which human potential is realized. The competencies belong to this third category of capacities and virtues that we need to develop and exercise for optimal development and to more fully realize the better parts of our human nature (Kristjánsson, 2017; Wolbert et al., 2015). As also noted in the EHF report, they should equip people to both “flourish as individuals” and “contribute to flourishing societies” (Stevenson, 2022, p. 8).

Discussion of these foundational capacities have typically involved, first, *capacities for self-regulation, critical reflection, and good judgment* that enable humans to steer their lives towards their desired goals and directions (Martela, 2023). Second, these capacities tend to involve *civic, social, and moral virtues and competencies* that make it possible for humans to live together in a shared world.

Of the present competencies, *adaptive problem solving* clearly aligns with the first set of foundational capacities. Adaptive problem solving is an essential competence for human flourishing as it allows the individual to successfully pursue their goals in a complex world and in the face of various novel challenges. It is thus easy to justify adaptive problem solving as crucial for human flourishing as it enables the person to better live the life they want to live, accomplish the goals they want to strive towards, and successfully react to various challenges in life.

Ethical decision making aligns with the second group of foundational capacities that allow us humans to live together. Being able to make ethical choices is easily understood as a foundational virtue for humans and something worth promoting through the educational system. Enough people having such capacity is necessary for functioning communities and societies. It also sounds reasonable to see intellectual humility, the ability to balance viewpoints, and orientation toward the common good as three key dimensions of ethical decision-making.

Both adaptive problem solving and ethical decision making are thus strongly rooted in an idea of human flourishing. The link between *aesthetic perception* and human flourishing, on the other hand, is somewhat harder to identify directly from existing literature. However, appreciating beauty and aesthetic experiences have been demonstrated to have a link to well-being and even contribute to a sense of meaning in life, as was also found in a recent study (Kim et al., 2022). Engaging with various art forms can offer strong and even transformative experiences, and sense of sublime is related to the way people ultimately make sense of life and themselves. Aesthetic perception can also nurture ability to understand different worldviews, compassion to others and to appreciate the universally shared experiences of connection to self and others, complementing the skill of ethical reasoning in an important way.

We find that what this competence is exactly about and how it directly relates to human flourishing is the most challenging to define, but based on research evidence on the connection between artistic or aesthetic experiences and well-being or sense of meaning, we find this category to be very important. It also appears centrally important to the sense of meaning, which is becoming a more pressing issue for educational systems to support. We will discuss this further in chapter 5.

2.4 Is there something missing from the list of competencies?

One aspect that was identified in the expert discussions as an important aspect in education is a *sense of meaningfulness*, and related to that, *capacity for generating good purposes for oneself*. Besides the ethical dimension that deals with interpersonal relations, another crucial dimension relates to what values and goals the person oneself acquires for themselves and pursues in their life. Each human faces the question ‘how should I live my life’ – what goals should I pursue, what education and career choices should I make, what accomplishments and conditions should I value. Making such choices is not easy and requires quite advanced reflective capabilities if one wants to make self-aligned, self-aware, and well-being conducive choices. Should the education systems provide more support for how to approach and answer such fundamental questions about one’s own life, particularly if education does not provide such a straight-forward path towards a working career, as was assumed in the previously decades?

In the 20th century modern societies, identities were often tied to long-term professional careers, or in different relatively stable social roles. As life paths have become far more diverse both in the individual and societal level, questions of meaningful life, identity and sense of purpose have become more complex to many individuals and groups. Additionally, as education is not as clear-cut pathway to a profession and related identity as it was – at least assumed to be – in the 20th century, the questions of intrinsic meaningfulness of education itself, as well as its capacity to support finding a purpose for oneself, becomes more distinct.

Also the EHF -project explicitly states the need to build “*purposeful, reflective and responsible*” people (Stevenson, 2022 referring to Leadbeater 2021). As far as we understand, from the identified competences adaptive problem solving relates to *reflective*, ethical decision making contributes to being *responsible*, but none of the three competencies taps quite directly into *purposeful or meaningful*.

If “purpose is a bridge between identity and interest” (Leadbeater, 2021) and “changing the self is a means to changing systems” (Stevenson, 2022), should we perhaps include an aspect the mastery for acquiring right kinds of purposes and finding a sense of meaningfulness for oneself into the list of key competences for flourishing? Making good choices here is important, as we know that some goals and values are more conducive to well-being, while others might even be detrimental for human well-being (Bradshaw et al., 2023; Kasser, 2016). The competence of aesthetic perception may perhaps be defined to support a sense of meaningfulness, which we explore in chapter 5, but finding a sense of purpose may require additional thought, if we want education to support this more strongly.

Competence for generating good purposes might include following skills, as defined by one of our experts focusing on research on sense of meaningfulness and purpose, Frank Martela: “Becoming more aware of one’s own current value and goal frameworks that typically are to a large degree implicit and non-transparent for the individual. Like fish don’t know they are in water, we humans tend to not be aware of the dominant goals and values of our own time and culture. Secondly, learning about different worldviews and ways of approaching life, and appreciating the multiple ways people live their lives. Thirdly, understanding that some values and goals are more conducive to well-being and also that some values and goals better enable humans to live together in a common world. Fourth, learning ways of reflecting and approaching life choices that are prone to lead to more self-awareness, and more self-chosen and self-aligned choices.”

However, we suggest that rather than adding this as an independent new competence, these questions could perhaps be considered together with the skills of aesthetic perception (sense of meaningfulness and skills of self-reflection, as described in chapter 5) and ethical decision-making (process of analysing and assessing ethical statements, as described in chapter 4).

From the standpoints of social sustainability, we would also consider a *competence for democratic deliberation*. A functioning democracy depends on citizens appreciating the democratic system and having a willingness “to take costly action to defend democratic institutions against potential violations” (Weingast, 1997, p. 261). When such civic virtues are lacking, democracy easily deteriorates into an autocracy. Raising children to appreciate democracy was more strongly on educational agenda in many societies some decades ago, but has in many cases given way for a rather more technocratic focus on productivity. Unfortunately, partly due to the corrupting influence of social media, right now we are seeing trajectories of deteriorating democracy play out to various degrees in many societies around the world (Mounk, 2019).

One of the key functions of our educational systems has been seen to raise citizens that understand, value, and are willing to defend a democratic society. This is related to other social skills, such as empathy and understanding multiple points of view. However, there are some specific skills related to democratic deliberation as a competence, such as at least understanding the importance of the democratic institutions for the common good and how such institutions work, willingness to defend democratic institutions against attempts to undermine them, and a willingness and ability to participate in common issues, be it a local committee or voting in school elections. This skill is closely related to and can perhaps be integrated in ethical decision-making, which we will discuss in chapter 4.

The last competence that was discussed among the Finnish group of experts, was *creativity*. This skill or skillset, seen and defined in its different forms, is also the skill highlighted by the “discussion” with AI in the beginning of this paper. However, it may be that this skill can rather be seen as one of the aspects in socio-emotional skills discussed in other projects, and it may also intrinsically be developed by and be included in a skillset related to both adaptive problem-solving and partially also in aesthetic perception. In this way, it may not warrant to be included as a complete new set of skills, but rather be highlighted as an important and independent, though integrated, part of adaptive problem-solving, with which it is already mentioned in the report EHF, and which we discuss more in chapter 3. Creativity is also related to many other competences, and might thus be seen as a *cross-cutting skill, which should be individually recognized and encouraged, but which does not need to be separately developed, but rather to be integrated into other competences*.

All and all, we concluded that the important competences we were able to recognise can be integrated within the categories recognised in the EHF report. We also agreed that all of these competences build on a strong set of foundational skills or core skills, such as literacy and maths. However, these new human flourishing competences should perhaps be integrated into the curriculum early on, as they would *ideally develop hand in hand with foundational or competences, such as literacy or mathematics*. For example, aesthetic perception is a competence which should be nurtured already in early childhood, as children have a strong need to experience beauty and to develop their aesthetic capabilities already in an early age. On the other hand, *testing for these competences is likely best to do only with older pupils*, as the development of these skills is dependent on internal motivation and encouraging a sense of meaningfulness with all these capabilities, and testing them too early on may encourage a superficial relationship with developing these skills.

3 Adaptive problem-solving

High Performing Systems for Tomorrow: 2023 Conceptual Framework (OECD, 2023, p14) discusses and defines adaptive problem solving as follows: “The OECD Survey of Adult Skills has incorporated adaptive problem-solving in its current cycle. The PISA Governing Board is considering a proposal to assess adaptive problem solving as an Innovative Domain.

Adaptive experts are capable of varying their behaviours and understanding to address new challenges and situations. They do this by applying what they have learned in one context to another context, drawing on higher-order thinking and decision-making skills, in order to solve complex problems.

The PISA assessment strategy would explore the extent to which students, drawing on ICT skills, can mobilise multiple competences in tandem to solve problems. They could be asked to (1) solve a design problem, to demonstrate creative thinking, critical thinking, decision-making, and selfregulation, (2) research, verify, and communicate a series of statements, to demonstrate critical thinking and synthesis skills in evaluating information and (3) judge when and how to collaborate with others, to demonstrate interpersonal skills. Principled assessment design and a digital environment would be integral to constructing this assessment. Dividing it into different challenges, to demonstrate different knowledge, skills, and attitudes, would facilitate the use of micro credentials.”

We see adaptive problem-solving as a central future competence, and its ties to both the human flourishing framework and the changing societal context and its drivers of new educational needs are well recognized in the EHF report. As the pace of change in the world has increased, and technological advancements, including AI, contribute to the dynamic nature of the environment, adaptive problem-solving is clearly needed for individuals to navigate unpredictable and evolving situations. We see that educational systems need to emphasize the development of analytical skills, problem-solving abilities, and a propensity for innovation and creativity, which are all connected to each other (Sternberg 2003). Within an individual’s lifespan, adaptive problem-solving is also connected to the goal of life-long learning.

Even though adaptive problem-solving is easy to recognize as a central future skill, it is not as easy to exactly define or pinpoint the individual capacities or component skills that are needed in order to nurture adaptive problem-solving as a *compound skill*. Also the quote from the EHF report above highlights the complex nature of this competence, and how it is nurtured as a combination of several socio-emotional skills, inherent motivation, creativity, operational thinking skills and a strong foundation of core or basic skills. Many of this skills feeding into the compound skill of adaptive problem-solving can be developed separately or with other related competences. Particularly *creativity* ties in with both adaptive problem-solving and aesthetic perception, and it is also a skill which can be nurtured throughout many disciplines in education. Without human creativity, adaptive problem-solving is reduced to a mechanical process, thus highlighting the inherent importance if innovation and creativity within this skillset.

Our team of experts also emphasized very strongly the *importance of strong core or basic skills in developing adaptive problem solving as a human competence*. Using adaptive problem solving is dependent on having strong basic skills – or, in other words, it is impossible to master adaptive problem-solving without a necessary foundation of concepts and practice in core skills. Strong grasp the concepts and contexts in literacy, mathematics and science are thus all preconditions to problem solving. The foundation of problem solving is on concepts of basic skills and adapting these in various situations, using other components of adaptive problem-solving, such as creativity. Using these skills

in problem solving situations requires also *abstract and logical thinking i.e. formal operational stage of thinking, which is also nurtured by practice within the core competences.*

The combination of these foundational competences and their relationship to developing adaptive problem-solving could perhaps be demonstrated by how it is described the Finnish Curriculum: There is a strong emphasis of on basic skills in Finnish National Core Curricula. In addition to basic skills, the *Core Curricula identifies six areas of transversal competence that help to direct the knowledge and skills learned and discussed in the subjects to practical life.* The Curriculum refers to the cognitive skills, meta-skills, and opportunities that underlie the life-long learning paths and competence needed in studies, at work, in hobbies, and in everyday life. In this sense the aim for transversal competences is to adapt the basic competencies to problem solving situations.

Building on strong basic skills and mastering the concepts are ways to strengthen self-efficacy and motivation to learn more. Active participation to society requires these skills and competencies to be used in complex problem solving situations, with emphasis on life-long learning. Adaptive experts are capable of varying their behaviours and understanding to address new challenges and situations. They do this by applying what they have learned in one context to another context, drawing on higher-order thinking and decision-making skills, in order to solve complex problems.

The key requirement of adaptive problem-solving is adaptation of knowledge from one context to another. Adaptation requires recognition that the problem encountered is in some way related to the knowledge that the actor has learned in another context. In more complex cases the problem is not structurally equivalent to an already encountered problem, but some aspects of the problem are. In these cases the adaptation amounts to using understanding of similarity to previously encountered problems as a means of solving some parts of the problem encountered and thus reducing the complexity of the de novo problem to be solved.

3.1. Adaptive problem-solving and AI: capacities to steer problem-solving processes and to assess the outputs

The transformative potential of AI throughout society from education to work-life is evident, and with other technological changes, it is likely to fundamentally affect almost all domains of life within the upcoming years. The EHF –report discusses and analyses AI as a transformative change, recognizing the need to integrate a deep understanding of AI to educational systems development.

One challenge that this EHF work faces is that any concrete, technical AI or ICT related competences are probably going to be too time-bound to work as essential competencies for flourishing. As the pace of technology is very rapid, any concrete technical skills tend to be superfluous almost at the time they are learned. AI related technical skills such as creating good prompts, are, no doubt, highly useful right now, but they are nevertheless skills related to interacting with current technology, just like using a typewriter was a useful technical skill in the 1980s. There is naturally some need for the curriculum to teach technical skills that are relevant right now, but when discussing the *very broad future competencies*, we feel that it may be wisest to focus on timeless skills – general-level competencies that are useful and life-enhancing no matter how the technological world around us changes.

We thus concluded to integrate our ideas of “foundational AI skills” within the skillset of adaptive problem-solving. It would perhaps be also possible to create another competence, which would be

more broad than any current AI skills we might right now recognize. However, in this reflection paper, we decided to integrate our idea of AI skills together with adaptive problem solving skills, and rather focus on the idea of applying adaptive problem solving skills to effectively use AI. With a broad combination of basic skills and the skills to use them in adaptive problem-solving with AI, pupils may be able to effectively apply and continue to learn to apply the new, emerging technologies.

One particular aspect that our experts noted as part of these AI skills integrated within the framework of adaptive problem-solving, was the ability to apply *leadership or executive skills to lead the problem-solving process with AI*. Another important point was the ability to *apply foundational core skills (literacy, maths etc.) with adaptive problem-solving to assess the outputs of AI*.

Our experts noted that if we do not take a proactive stance in understanding how education should provide the leadership skill to steer artificial intelligence, we might easily end up in a situation where human intelligence would implicitly be seen only as something complementary to the deficits of AI. While AI systems excel at certain tasks, they may lack creativity, ability to understand complex human emotions, and nuanced decision-making processes. In this light, it would be easy to see human intelligence and skills as complementary to AI; or that that adaptive problem-solving allows humans to complement AI capabilities.

However, to proactively make sure that the AI complements human skills and supports human thinking processes, and not the other way around, we might want to consider acknowledging this goal in our way of defining adaptive problem-solving skills. *Strong, proactive executive or leadership skills and adaptive problem-solving skills form a base to plan and lead the process of collaborative problem-solving with AI*.

Another skillset is needed in evaluating the results of the problem-solving process with AI (“Does this output make sense?”). Here, the importance of a strong grasp of basic knowledge and core skills in the substance-matter of traditional disciplines, is also needed. Even if humans cannot compete with the artificial intelligence in the amount of knowledge or the speed of the process of analysis, we must have the skills to assess, whether the end result makes sense or can be justified both factually and ethically.

3.2 Collaborative problem-solving

One part of adaptive problem-solving is also collaborative problem-solving as stated in the EHF framework. Collaborative problem-solving is additionally, in its part, related to the goal of social sustainability and ethical decision-making. Collaboration between people and the ability to come together in problem-solving is probably a skill, which is needed also to effectively apply AI together with other people in tackling future problems. Collaborative problem-solving builds on the same principles as adaptive problem-solving in general, but some additional abilities need to be recognized for the purposes of treating collaborative problem-solving in the context of education policy.

We suggest that collaborative problem-solving could be approached like functional literacy – trying to recognise some component skills that are essential for the compound skill. This approach assumes that collaborative problem-solving – like literacy and mathematics – may be assessed in a restricted setting while still obtaining information on the ability of an individual to perform collaborative problem-solving outside the confines of the assessment situation. We can recognise at least three separate component skill in the collaborative problem-solving.

Firstly, the ability for collaborative problem-solving requires finding a common ground or common language for the collaborators. This language need not be a natural language, as successful interaction of humans not sharing a language makes clear. What it does require, is sufficient reliability of shared symbols to allow for transmission of messages between individuals. To achieve this, all parties to the communication and engaging in collaborative efforts, must be able to identify when common language, or mutually recognised symbols have been found and recognise cases of miscommunication, where meaning is not successfully transmitted.

Secondly, for collaboration to emerge the actors engaging in collaboration need some common or compatible interests. This suggests that ability to engage in successful collaborative problem-solving requires the ability to recognise – at least to some degree – the interests or aspirations of the other actors and the ability to recognise common interests or opportunities for mutually beneficial transactions whereby both actors obtain net-positive outcomes relative to pursuing their objectives separately. The second component skill of collaborative problem-solving would thus be theory of mind, which allows the party to the collaboration treat the other party as an actor, not only as a passive piece of matter.

The third component skill is recognising the structure of the problem to be solved to a sufficient degree to recognise what constitutes solving the problem, to be able to communicate with collaborators while solving the problem and to be able to recognise why and how the problem can be approached through collaborative problem-solving. I.e. it is necessary to recognise what is to be solved and how it can be solved in collaboration.

4 Ethical decision-making

High Performing Systems for Tomorrow: 2023 Conceptual Framework (OECD, 2023, p14) discusses and defines ethical decision-making as follows: “Ethics is central to human flourishing, equipping us to evaluate and respond to the claims that others make on us. An ethical perspective combats prejudice against people with identities different to our own and balances the needs of the human race with the rights of other species and the planet itself. It is the ability to make altruistic choices that distinguishes human decisions from those made by machines.

The Wisdom Task Force, meeting in Toronto in 2019, embedded ethical decision-making in its account of wisdom. The central idea is “perspectival metacognition”, combining intellectual humility; the ability to balance diverse viewpoints, perspectives, and contexts; and an orientation toward the common good and shared humanity.

The suggested strategy for assessing perspectival metacognition is to measure learners’ capacity to reason, in discussion with a trained expert, about personal dilemmas. To what extent do they exhibit humility; an ability to balance viewpoints, perspectives, and contexts; and an understanding of conflict resolution and compromise? Expertise in handling personal dilemmas could lay a foundation for contributing to civic and political debate, on issues with an ethical dimension.

By comparison with adaptive problem solving, the conceptualisation and assessment of ethical decision-making are at an early stage. It is not yet clear whether the difficulty of dilemmas could be adapted to different participants; what kind of associated data would best indicate the processes that participants follow in formulating their responses and their degree of persistence; or on what evidentiary basis the data might be interpreted. On the other hand, the presentation of the dilemma

and the development of the participant's responses could clearly take place in a digital learning environment; and specific skills and behaviours could be individually recognised with micro credentials.”

Ethical decision-making is arguably one of the most-needed capacities educational systems can nurture in the future. Our experts all agreed to this competence being clearly related to the goal of human flourishing, and that is a competence that can be seen as a deeply meaningful and well-defined compound skill.

Ethical understanding and processing is related to the need to reduce social conflict and polarization, the need to develop *democratic deliberation* and all the *considerations related to social and ecological sustainability*. *Compassion* towards other people and other species are at the heart of ethical decision-making, and much needed amidst the current global challenges. Compassion also relates ethical decision-making to socio-emotional skills, as well as to shared understanding of what it means to be human, which is in its part *related to the competence of aesthetic perception* and art education. *Ethical decision-making also highlights the EHF report's stance that human flourishing is not an individual goal, but it requires flourishing of all.*

Due to the inherent ethical responsibility of human action and interaction, the task of ethical reasoning also can never be fully outsourced to AI, no matter how developed the normative AI processes would become. *Ethical decision-making is thus also an inherently meaningful human capability.* If and when standard work can be outsourced to AI tools more effectively than nowadays, the need for taking the responsibility of ethical decision-making will become even more pronounced as a part of processes, which need to be taken care of by humans.

We feel that the chapter on ethical decision-making is very clear and successfully integrates viewpoints of ecosocial justice, which is needed to avoid focus on only humans as deserving ethical treatment. In ecosocial or post-humanist considerations, the ethical decision-making also ties into the planetary considerations and our ecological responsibility to protect all life on the planet. Some additional points we considered was to include a slightly stronger emphasis on questions of equality to the ethical considerations. As discussed in the introductory chapter, we understand *equity and equal opportunities as a central ethical value*, and an important point of departure to any ethical code in schools. Matters of equality and social sustainability could thus feature rather extensively in the way how ethical questions are dealt with within education.

4.1. Ethical decision-making and ethical reasoning

Another point raised by our experts was the question *whether we should call this competence ethical reasoning rather than ethical decision-making*. While ethical decision-making is certainly an incredibly important goal for educational systems to teach, our experts wondered if the actual competence would be more aptly described through the ethical *decision-making process – the skill and logic of reasoning* – rather than the term “*decision-making*”, which could be interpreted to refer to the end-result as much or more than to the process and the application of logic.

The description of ethical decision-making in the EHF –report clearly demonstrates focus to the decision-making process rather than focusing on the end-result. The term “reasoning” might thus be useful in highlighting that the goal is not to teach universal norms or to have teacher-given answers

to the “right” decisions, but to *train pupils in the process of applying ethical reasoning*. This also feeds into creating an assessment framework to testing this capability.

The concept of ethical reasoning does not require us to establish the independent existence of ethical truths, but merely a recognition of the fact that ethical claims purport to carry normative force unlike individual expressions of taste or preference for chocolate ice cream over vanilla. In normative reasoning, we combine an empirical account of the world (eg. “someone is tortured”) with a normative principles (“torture is wrong”). The normative principles encountered in practice are most often fact-dependent normative principles, which are in turn outcomes of a normative argument (“torture causes pain”, “causing pain is wrong”, “thus torture is wrong”).

This makes ethical reasoning a complex skill that draws on linguistic, and often also on quantitative reasoning, but is not reducible to the symbol systems of language or mathematics, as mathematical or linguistic facts do not have normative power. In terms of the human aspiration towards the true, the good and the beautiful, the symbol system of ethical reasoning is used to pursue the good. There is a large body of literature on ethical reasoning, and the competence can be well defined by creating a framework for the process and the needed component skills.

5 Aesthetic perception

High Performing Systems for Tomorrow: 2023 Conceptual Framework (OECD, 2023, p15) discusses and defines aesthetic perception as follows: “Through aesthetic perception we appreciate the sublime: what is magnificent, mysterious, and greater than ourselves. By setting the everyday, however dismal, in perspective, the sublime consoles us. By opening up our spiritual selves it offers transcendence. By connecting us to the highest human achievements and the natural grandeur of the universe, it enriches our concept of human flourishing.

Gardner defines aesthetic perception in terms of appreciating (rather than creating) beauty. He sees beauty as a property of experiences. To count as beautiful, “an experience must be interesting enough to behold, have a form that is memorable and invite revisiting”. Looking at a picture, listening to a story or attending a concert are all examples. So too, potentially, are taking a shower or enjoying the walk home. He argues that by training young people in aesthetic perception we help them distinguish between categories of beautiful experience, build a personal, changing portfolio of beautiful experiences and articulate their reasons for identifying these experiences as beautiful. (Truth, Beauty and Goodness Reframed: educating for the virtues in the 21st Century, 2011)

Can aesthetic perception be deconstructed into knowledge, skills, and attitudes? Recent research investigates what people do when they engage with an artwork. According to the Vienna Integrated Model of Perception, there are three distinct phases:

- Pre-classification. This is the viewer’s prior state on approaching the artwork: contextual knowledge, mood and emotions and a sense of the significance of the experience ahead.
- Bottom-up processing: identifying simple visual features such as colour intensity and basic structure; combining core elements into cohesive patterns; and selecting aspects that evoke memories and suggest meaning.
- Cognitive Mastery: interrogating one’s cognitive response to the artwork and attending to its impact on one’s ideals, emotions, and actions. To what extent is the way the artwork frames the world congruent with the viewer’s framing of the world? And is it relevant to the viewer?

It would be possible to assess the quality of the viewer's engagement by asking them to articulate responses to the congruence and relevance questions and comparing their responses to hypothetical answers. The assessment might consider not only verbal but also emotional and physiological responses.

An assessment like this could be part of a credentialed learning process, where the learner comes to understand through a teacher's guidance how to engage with an artwork, or aesthetic experience, as a means of reflecting on the self. It could equally be embedded in a digital environment, where the learner responds to digital images, receives guidance and feedback, and provides process data.

Meeting the standards of principled assessment design could be more challenging. Is it possible to infer from what a learner says they think and feel about an artwork what they really think and feel? How would process data relating to emotions and physiological responses be related to what is said, and on what evidentiary basis?"

We found aesthetic perception to be the most challenging competence to define and analyse. However, we also see it as an incredibly important and ambitious attempt to truly include an "inwards" skill related to our deepest personal, yet shared, experiences of what it means to be a human, and how we construct meaning and make sense of life. This is also why we were very interested to try to understand how this concept could be defined together in a multi- or even transdisciplinary way, and how we could ask some questions in order to further develop it into a meaningful category of a measurable capacity.

There is plenty of evidence to show the significance of aesthetic experiences for human well-being and flourishing. To develop individual capacities to be sensitive for the aesthetic potential there is both in the world of arts, in nature, and in everyday environments is clearly beneficial for human existence. In addition, these kinds of immaterial values are becoming more and more important as humanity realizes the ecological harms of material consumption. Developing one's aesthetic capabilities is thus also ecologically sustainable, also relating to ethical capacities.

Through combining perspectives from the disciplines of art education, philosophy and aesthetics, we sought to analyse the competence especially in its relation to sense of meaningfulness and the shared human experiences of flow and awe. In this framework, we consider *aesthetic perception to be a complex cognitive and emotional process associated with the appreciation of beauty, art, human thought and the sensory qualities of the environment*. As a complex compound skill it requires both developed cognitive abilities, capacity for symbolic thought and a certain mastery of cultural substance-matter.

Humans tend to have a natural ability and motivation to seek out emotionally and intellectually meaningful aesthetic experiences that evoke awe, but the further abilities related to this – to create, interpret, and derive meaning from art and aesthetic experiences in distinctive ways, which are connected to *making sense of and giving meaning to our lives* – can be developed and refined in several ways. In our process of attempting to understand the essence of this skill, we came to the conclusion that developing this competence is very much related to learning to *self-consciously and analytically interpret and seek out the experience of aesthetic perception*. The basic "aesthetic competence" develops at the same time as other skills: even a very small child enjoys natural sights and sounds. *What is needed is the vocabulary and the analytical skill to understand the process of perception, which education can provide.*

Art education professor emerita, Sirkka Laitinen, summed up the relationship between aesthetic perception, art education and the inner experiences within our group by the thought: *“In your relationship with art, you also encounter yourself in a holistic way.”* We took this idea as our vantage point for considering the relationship of education and aesthetic perception, although noting at the same time that here “art” perhaps rather refers to more broadly to meaningful aesthetic experiences as also noted in the EHF report, including the appreciation of one's own environment. If we put too much emphasis on art or “high culture”, it may alienate some pupils and lose the perspective that beauty and meaningful aesthetic experiences belong to everyone. However, we attempted to find a possibility to get a more concrete content to the concept of aesthetic perception in education by tying the concept to the traditions of aesthetic research and art and culture education.

Laitinen's quote also touches on how the inwards and individual experiences are in many ways universally shared in aesthetic perception. Through art and aesthetic perception, we also encounter the world, other people and the shared questions of being a human in a holistic way. This also relates to the sense of meaningfulness that education should be able to nurture. If we treat aesthetic perception as a competence, also as an analytical, rational competence, rather than any form of substance-matter knowledge (e.g. art history) or a creative skill (e.g. creating art or crafts), we can focus on nurturing the pupils' self-reflection, connection with other people's experiences and sense of meaningfulness through this competence.

5.2 Aesthetic perception, inner vs. outer rewards and sense of meaningfulness

Theories of art education help us understand the capacities of aesthetic perception as a competence, and also the two dimensions that we need to be sensitive to when creating ways to define, observe and measure the competence. In aesthetic perception, it is central to distinguish between two levels of objectives – *intrinsic and instrumental*. These relate, in part, to inner and outer rewards in learning. If we use the example of art education, these two goals can be defined in following ways:

Intrinsic goals relate to the formation of a meaningful, inward relationship with art or other aesthetic experiences, which gives meaning to existence. When experiencing (or making) art, the pupil links their thoughts, feelings and ideas to the world of art and its forms of expression. At the same time, one also encounters oneself in a very holistic way. On the other hand, *instrumental goals refer to the material objectives*, such as sculpture literacy, knowledge of contemporary art and history, or sculpture skills. This also relates to learning the competences with the traditional assessment of skills.

In the public discourse in the media, art education in schools is most often seen only in terms of the instrumental goals of art education. Also traditions determine the setting of objectives in the various fields of art education: in an agrarian society, for example, it was necessary to be able to draw good working drawings. The teaching of drawing in those days was therefore mainly concerned with instrumental objectives, although a good carpenter or church painter could certainly construct their identity as a skilled craftsman.

The dual objectives and different sources for motivation requires the art teacher to have a good understanding of both goals of art education. However, when considering the object of EHF and sense of meaningfulness for the pupil, the intrinsic goals become the most important. Artistic skills, aesthetic perception and ethical growth are very similar in nature in relation to a flourishing individual: all require personal reflection, not preconceived answers. In the way art can be a source of meaning, we can see the similar role of aesthetics – as well as ethics – in education.

For aesthetic perception, the intrinsic goals and inner rewards are incredibly important for supporting the sense of awe and creating a personal meaningfulness and motivation, which are at the heart of this capability. Therefore, *all learning goals and ways to measure this competence must be done in a way to avoid external motivations and external rewards undermining the internal motivations for aesthetic perception*. In other words, we must be careful that the assessment does not become the goal, but that the pupils truly feel inner motivation to aesthetic perception, and the *assessment rather encourages to be self-reflexive towards the inner process*.

Our experts related the intrinsic goals and the associated strong personal engagement to the concept of flow by Csíkszentmihályi (2002; see also 1997). Flow links the goals of the pupil's instrumental activities to the child's experience of spiritual growth. In a positive and engaged flow, you forget the world around you, the time constraints, the competition, the demands and the worries. Csíkszentmihályi describes eight elements that can be involved in the flow experience as:

- Complete concentration on the task;
- Clarity of goals and reward in mind and immediate feedback;
- Transformation of time (speeding up/slowing down);
- The experience is intrinsically rewarding;
- Effortlessness and ease;
- There is a balance between challenge and skills;
- Actions and awareness are merged, losing self-conscious rumination;
- There is a feeling of control over the task.

Another consideration is paying attention to the sources of aesthetic experiences. Although we used the example of art education, as it has an established theoretical background, aesthetic experiences have to be understood broadly in order to include all pupils and not to alienate anyone by the subject-matter or ideas of “elite” fields of aesthetic experiences. The EHF report also describes different forms of aesthetic experience, highlighting that these experience can take many forms, but are usually sensory in one way or another.

Art and culture are mentioned as one part of the aesthetic experience, and they play an important in providing aesthetic experiences and opportunities for learning aesthetic perception in education. Art and culture can be brought into every school and educational establishment in various forms, such as literature, music, visual arts, dance, crafts or visits to events or cultural places and institutions.

Highlighting this diversity is central, as in their core, aesthetic perception and aesthetic appreciation are crucial ways of connecting ourselves to the whole diversity of the world. It is not only the magnificent – be it great works of art or impressive natural phenomena – that is aesthetically relevant. Often it is the small everyday matters that also make a difference. For example, there is plenty of empirical evidence to show that humans recover better from different diseases if they can see a piece of greenery from the hospital window. Small aesthetically significant matters, like a tree, a bird song, or a piece of art, have significant health and well-being effects which are experienced through aesthetic perception (see e.g. Tyrväinen et al. 2014).

5.3 Aesthetic perception as the process of construction of meaning

All of our experts felt that aesthetic perception is an extremely important capability for living a meaningful life and achieving well-being. As a concrete example, this aim has been also already taken

into account, at least to some degree, in the Finnish Curriculum and in the everyday practices in schools. For example arts and crafts education is included in the Curriculum, and school children visit museums, nature areas and other cultural and ecological sites in all municipalities.

However, the teacher members of our group noted that there is a need to develop the language to understand their aesthetic experiences; to really pay attention to this aesthetic perception as an independent competence, which needs to be nurtured. For example, in a forest it is important to be able to name the different species of trees, but we need to recognise that it is equally important to be able to name the features that make the trees aesthetically significant, and to be able to describe the experience of being in the forest. This means also increasing in children's self-understanding: being able to name and analyse their experiences.

This capability for a reflexive, analytical understanding the process of aesthetic perception could perhaps be the basis for assessing this competence – in other words, testing for the “language” to talk about these experiences and the process of construction of meaning in aesthetic perception. The EHF report already poses a good framework for describing aesthetic perception. Assessment or measuring must be done in a way which does not undermine the intrinsic motivation and inner rewards for aesthetic perception, and focusing on the skill of describing these experiences may provide a way to do this.

The way to include the diversity of aesthetic perception could be the attempt to include the sublime throughout disciplines: what is magnificent, mysterious, and greater than ourselves. Beauty is an aspect of the world that can be and is present in all different domains of human experience and knowing. In other words, we can recognise beauty not only in works of art and in nature, but also beauty in the structure of ethical argument, in elegance of mathematical equation, in the symphony of linguistic expression and the poetry of human motion.

Gardner (2011) defines aesthetic perception in terms of appreciating (rather than creating) beauty and sees beauty as a property of experiences. However, there is no pure experience or pure perception, independent of the apparatus of observation and interpretation of sense data. Indeed, from the perspective of core competences we would see aesthetic perception as an exercise in construction – not the construction of a beautiful physical object or even a beautiful immaterial interpersonal idea, but a *construction of an experience as an interpersonal idea, and construction of meaning*. This conception of aesthetic perception divides the appreciation of the sublime in two parts – there is the pure experience of sublime and the constructed internal idea that brings this experience forth.

Thus, if we take the ability to be awed to be a fundamental quality, aesthetic perception in this wider sense – as a competence relevant to society and schooling – as the ability to engage in the creative act of construction of individual experience through interpretation and sense-making. It is not defined by subject matter nor by particular forms of perception.

The assessment of aesthetic perception or experience can perhaps also be inspired by the measurement of effectiveness and impact that has been used for the welfare effects of arts and culture. This is because art and culture produce the very aesthetic experiences that are received by all our senses. The impact of arts and culture on human well-being and health has been the subject of much research over the last decades.

The most important body of research on the well-being effects of the arts is the 2019 WHO-produced Fancourt & Finn research on the role of the arts in improving health and well-being. Based on this body of research, we know that arts and culture have a significant impact on people's wellbeing and

health and on their ability to cope with illness, as well as on their learning and experience of social inclusion. The power of art lies in its emotive, aesthetic sensations. Research suggests that what is referred to as an aesthetic experience or perception should also be measured in a similar way to artistic experiences, and this could be added to the palette of assessment. In Finland, for example, the Experiences of Social Inclusion Scale (ESIS) developed by the National Institute for Health and Welfare has been used.

6 Conclusions

The Education for Human Flourishing offers an important and exciting framework for developing educational systems in a way, which can offer meaningful education to and nurture ethically competent generations capable of contributing to positive planetary development. The proposed competences in the EHF report all appear central to the goal of individual, human and planetary flourishing.

Adaptive problem solving is an essential competence for human flourishing as it allows the individual to successfully pursue their goals in a complex world and in the face of various novel challenges. It is thus easy to justify adaptive problem solving as crucial for human flourishing as it enables the person to better live the life they want to live, accomplish the goals they want to strive towards, and successfully react to various challenges in life.

Ethical decision-making – or ethical reasoning – aligns with the capacities that allow us humans to live together. Being able to make ethical choices is easily understood as a foundational virtue for humans and something worth promoting through the educational system. Enough people having such capacity is necessary for functioning communities and societies.

Lastly, aesthetic perception can nurture transformative experiences, and sense of sublime is related to the way people ultimately make sense of life and themselves. Aesthetic perception can also nurture ability to understand different worldviews, compassion to others and to appreciate the universally shared experiences of connection to self and others, complementing the skill of ethical reasoning in an important way.

Together these competences encourage individual and collective growth, which is central to the idea of human flourishing. Ethical individuals, with the ability to adjust their problem-solving skills to a rapidly changing world, are the prerequisite for positive future development. Paying attention to the aesthetic potential of the world around us, encouraged by the skill of aesthetic perception, is in itself rewarding, and it creates fruitful, caring relations with the world. This relates also the aesthetic considerations directly to human flourishing. Putting more emphasis on immaterial values, like aesthetic ones, is also crucial in the planetary context and the ecological point of view. By encouraging future generations to “consume” aesthetic values, rather than getting satisfaction from shopping sprees, we can create a much more harmonious relationship with the natural world and our planetary boundaries.

Our current societal and ecological challenges and the fast pace of fundamental technological transformations highlight the need for ambitious, far-reaching goals for future education – even a need to redefine what it means to educate humans on and for a planet with limited social and ecological resources. Juha Hurme, a Finnish author, theatre director and cultural discussant, gave a speech on the importance of culture and “*sivistys*” (bildung or civilization in English) in education

to the Ministry of Education and Culture staff in August 23. In his speech, he touched upon many of the thematics present in the EHF report, as well as underlining the central value of *bildung* not only as a goal for human development, but as a means for our planetary survival.

We would like to end our reflection with an excerpt from Juha Hurme's (Hurme) speech:

“A civilised person, a person with *bildung*, is interested in all kinds of things that come up, stores things into their mind and learns lessons to better cope with life's vicissitudes and the uncertain future.

The amount of knowledge they have is not decisive: *bildung* is not a competition on winning quizzes, but *bildung* is an attitude; an eager and susceptible attitude to learning, to new knowledge and also to knowledge that hurts; to unpleasant facts that force one to mold one's own mind, one's inbred prejudices or habits.

Belonging to a group, sect or party is unfortunately, for many people, more important than a validated account of reality. Confirmation bias stifles the use of reason: we are tempted to seek out and emphasise information that supports our point of view. Algorithms effectively reinforce our prejudices. Belonging to a group of like-minded people often overrides the value of sound reasoning: it is easier, energy-saving. But it is saving in the wrong place.

[...]

We need a better ability at all levels of society to deal with opinions that are unfamiliar to us. There are ways to do this, through what we call culture and civilisation, *bildung*.

Culture is everything that distinguishes the human species from other large predators. Culture therefore has five million years of history. Culture is a resource, and civilisation, *bildung*, is an eager attitude to approach this resource, *bildung* is the skill and willingness to use culture.

Culture is the ever-changing and living reservoir of means by which humanity survives in nature and with itself. Culture is a negotiation with nature and with human nature.

Civilisation, *bildung*, is the dynamic technique of thinking and remembering by individuals, communities, societies and humanity. It is the dynamic technique to reduce friction or violence within the human population and to improve the chances of survival of life, all life including human life, in this overheating and withering spherical plant and animal garden, located in very cold, empty, lifeless and indifferent space.

Bildung is a survival technique. Without it, we will all die, and we will kill a large part of all other life as we go.”

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