Education for Human Flourishing:
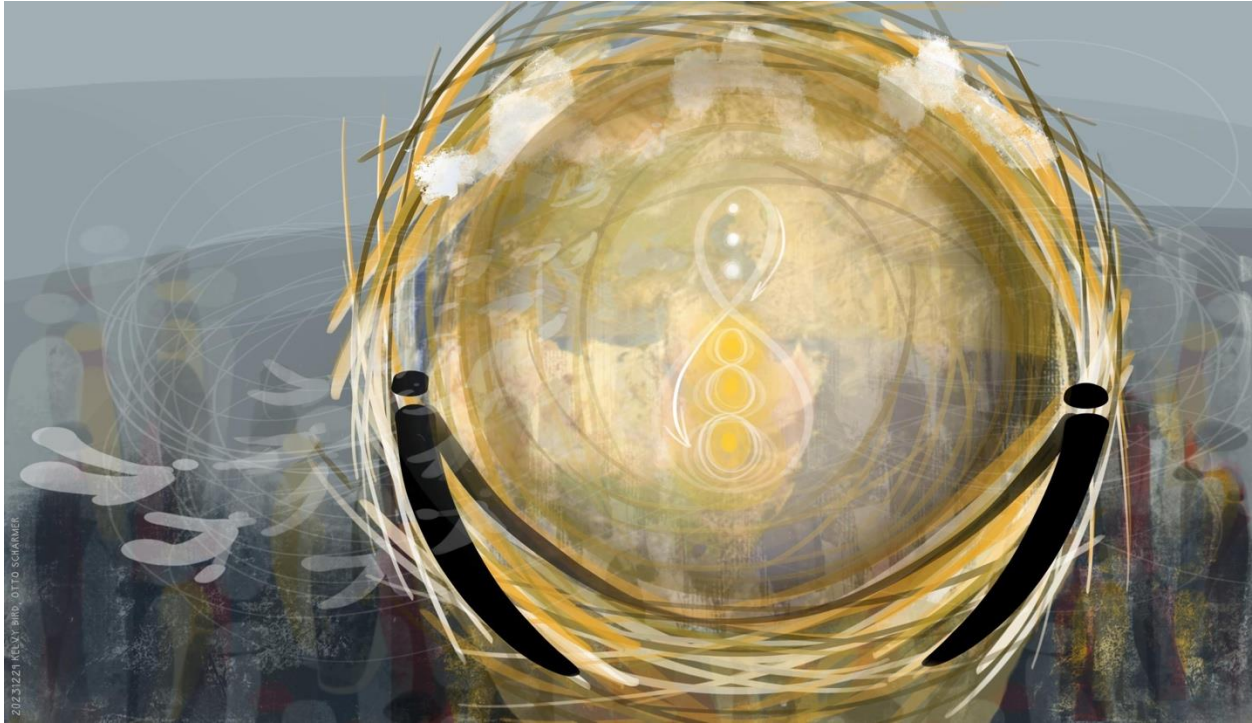

Seven Core Capacities for Co-creating the Emerging Future

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1. Challenge: Two Faces

We live in a world of hyperpolarization, escalating violence, inequality, and climate destabilization. The challenges we face as a society feel overwhelming and have produced a widely shared sense of hopelessness, pessimism, and even depression, particularly among teenagers. These collective feelings affect what happens in classrooms, in schools, and in our communities. A felt loss of agency and well-being is in my view perhaps the primary challenge that we are facing today.

At the same time, the solutions to many of these problems are known. Consider the climate crisis. The required technologies for reducing pollution and slowing global warming exist. We know how to address inequality. Often we know what needs to be done, but we aren't doing it. There is a massive *knowing-doing gap* on many levels of societal action today. We know what many of the solutions are, but we don't have the collective capacity to act on them.

This gap sets the stage for the question that organizes this paper: How can we reimagine and reshape education in ways that are relevant to the current polycrisis and transformative for a future of human and planetary flourishing?

According to a CDC report published in 2023, "nearly 3 out 5 (57%) U.S. teen girls felt persistently sad or hopeless in 2021" (https://www.cdc.gov/media/releases/2023/p0213-yrbs.html). Even though these numbers tend to be somewhat lower in other countries around the world, they are shocking to us as parents, educators, citizens, and educational leaders. How

can educational systems enable students to gain action confidence and learn to address the challenges we face creatively and collectively?

Two Metafunctions of Education

If Heinonen (2022) is correct in suggesting that there are two metafunctions of educational systems—(1) the transfer of knowledge and (2) empowering the next generation to shape the future—then our collective score card regarding the second metafunction is probably worse than the worst PISA achievement results ever measured. In light of the disruptive challenges that continue to come our way, the *capacity to co-sense and co-create a future* that we want—a future for human and planetary flourishing—may well be the most important capacity of our time.

As we watch the rapid advances in AI, it seems obvious that many of our current institutional activities will soon be done by AI and related applications. Many activities that we have assumed only humans can do will be done or augmented by machines.

But there are of course things that AI can't do. AI doesn't have the uniquely human capacity to *co-sense and co-create a future* that is profoundly different from the past—a future that is connected to who we really are or can be, a future of human and planetary flourishing. The blind spot of AI is the capacity to sense and presence our highest future potential.

Disintegration of World and Self

The situation in our schools, universities, and communities can be framed as a dual issue. On the one hand there is the disintegration of our *exterior* world in the form of polarization, inequality, and ecosystem breakdown. But there is another story of at least equal importance. That is the story of the falling apart of our *interior* worlds, of what makes us human—the disintegration of our *self* caused by the loss of hope and agency.

These two stories of disintegration, one exterior and one interior, contribute to disconnecting us from the essence of who we are as a human species: our ability to *relate to, envision, and enact a future* that we truly care about.

Here I explore this dual challenge—the accelerating *disintegration* of our *exterior world* and our *inner self*—from the viewpoint of human flourishing. In outlining a practical perspective, I introduce a set of *seven core capacities* that I believe can be critical in dealing with the exterior and the interior disintegration that we face by strengthening our capability to hold and transcend these polarities through transformative action.

2. Context: The New Convergence

If the future of education depends on strengthening the second metafunction of learning—empowering the next generation to shape the future—then the question is this: What future are we trying to prepare for?

The truth, of course, is that no one really knows. But having been deeply involved as an action researcher in transformation processes in different sectors and industries for more than a decade, I have a perspective on the transformations that are already underway—transformations that offer glimpses into an emerging landscape of societal change that our existing educational systems are mostly ill-prepared to serve.

Systems Thinking

Since the early 20th century, general systems theory and, starting a bit later, systems thinking have used the metaphor of the iceberg to describe the difference between visible symptoms and invisible root issues. The visible issues are those above the water line; the deeper root issues are beneath the surface.

I have been trying to develop a better metaphor for the deep systems change in the 21st century, as I describe in the following paragraphs.

Social Fields: Social Systems + Social Soil

I grew up on a farm in northern Germany that used regenerative farming practices. So the new metaphor that I propose relates to the foundation of agriculture: the soil and the field. A core principle of regenerative agriculture is that the visible result, the crop that grows in the soil, is a result of the quality of the soil, which is mostly invisible to the eye. This same principle applies to the *social* field. A social field is defined by both what is above and what is below the surface. As shown in figure 1, the visible realm above the surface depicts the tangible side of social systems, while the intangible realm below the surface depicts the layers of *interiority* of social systems (which tend to be ignored by the more traditional approaches to systems thinking).

In other words: a social field is a social system with *interiority*, or if you like, a "soul." But what does that actually mean? What are the distinct qualities of that largely intangible *social soil*? Just as in the agricultural field the quality of the visible plant above the ground is a function of what's below the surface (soil, seeds, and roots), the visible and tangible results of social systems or social fields are a function of what is below the surface level of the field: the quality of *awareness* and *relationships*. For example, whether a collaboration is characterized by a toxic, transactional, or transformational relational qualities determines very significantly the quality of results.

Figure 1: Social Fields: Social Systems (above) and Social Soil (below)

Theory U, which takes a systems perspective, is grounded in a recognition of the *different qualities* of the soil and the principle that the quality of results is a function of the quality of its social soil. In regenerative farming one role of the farmer is to improve the quality of the soil. Likewise, in this view, the main role of the leader or educator is the same: to increase the quality of the social soil, whether that is in the classroom, in the school as a learning organization, or in the entire educational ecosystem.

What do we see when we look at sectors and industries from a systems view? What do we see *above* the surface? We see basically the same thing. We see that all these sectors have evolved (and keep evolving) in strikingly similar ways: (1) from output- and efficiency-centric to (2) user- and stakeholder-centric to (3) ecosystem- and regeneration-centric ways of operating (see figure 2). Currently the mainstream is still in the output- and efficiency-centric mode, but moving into the user- and stakeholder-centric mode, while the innovators are now moving from there to the regeneration and ecosystem-centric mode of operating.

The "northern hemisphere" of the figure shows how operating system "upgrades" have taken shape across sectors. The sectors depicted in figure 2 are at the heart of our current global efforts to implement climate-related transformational change to safeguard the future of our planet:
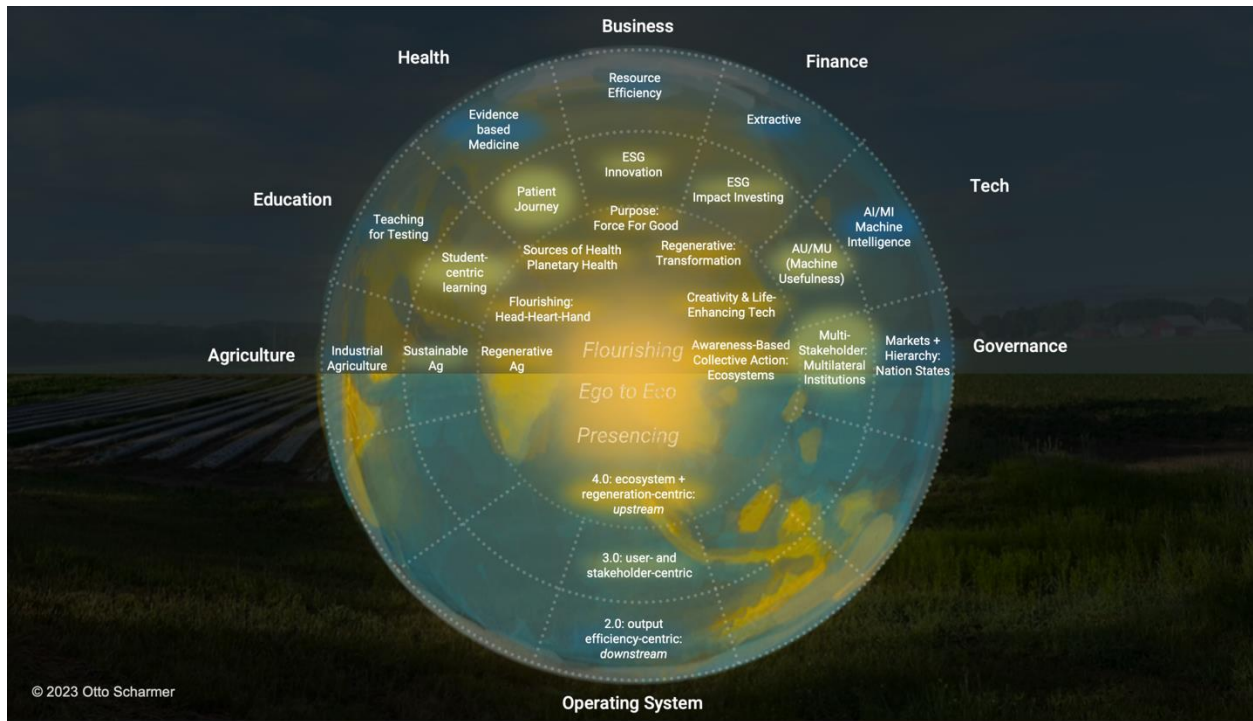
Fig 2: The Evolution of Systems: From Output- to User- to Ecosystem-Centric

- *Agriculture*: from industrial ag (maximizing output and efficiency at great environmental cost), to sustainable ag (less negative environmental impact), to regenerative ag (food as the medium for healing planet and people)
- *Education*: from teaching for testing (maximizing test scores at considerable developmental cost), to student-centric learning (organizing around the questions and the journey of the learner), to education for human flourishing (whole person and whole system learning)
- *Health*: from evidence-based medicine, to reorganizing the system around patient journeys, to noticing social determinants of health and reorganizing the health system around strengthening the sources of human and planetary health and well-being
- *Sustainability in Business*: from maximizing resource efficiency, to driving ESG-related innovation of the core business, to transforming purpose: business as a force for good
- *Finance*: from extractive, to ESG and impact investing, to transformative finance focusing on regenerating our social, ecological, and cultural commons
- *Tech*: from AI and machine intelligence, to machine usefulness, to creativity- and life-enhancing technologies (tech that is life- and creativity-enhancing rather than diminishing)
- *Governance*: all the evolutionary changes are grounded in an evolution of governance from the traditional forms (markets and hierarchies) such as the nation-state, to more participatory multi-stakeholder structures of multilateral institutions, to new forms of acting from a shared awareness of the whole: ABC (awareness-based collective action),

which we often see in local, city, and regional contexts, and occasionally also in the international arena (such as the Paris Agreement).

Figure 2 may look complex, but the underlying evolutionary logic and structure is straightforward: **the current evolution of our societal institutions and systems can be seen as the manifestation of an *evolving human consciousness from ego to eco*—i.e., from an operating system based on siloed thinking, input-output, and efficency (2.0), to one based on stakeholder- and user-centric awareness (3.0), to one based on regeneration and ecosystem awareness (4.0).**

As mainstream institutions and systems are moving from 2.0 to 3.0, and the leading innovators from 3.0 to 4.0, we see something interesting taking shape: in the 4.0 realm, the inner sphere, or perhaps the emerging heart, that connects and renews all the sectors and systems across hemispheres, a new developmental space opens; the boundaries between these sectors collapse and allow for an awareness of the whole, or both an awareness of the whole and a space of possibility where something new can emerge (figure 2).

What are the deeper challenges, patterns, and issues that people and their institutions in the 4.0 realm are dealing with? As figure 2 shows, they are dealing with the challenges of moving

- from extractive to regenerative relationships
- from human decline to human flourishing
- from egosystem to ecosystem awareness, and
- from reacting against the past to co-sensing and co-creating the emerging future.

The Empty Core of Convergence

Figure 3 is identical to figure 2 except that it has an empty core. It depicts the current reality of the holding space that serves these deeper developmental needs: moving from extraction to regeneration, from decline to flourishing, from ego to eco, and from reacting to co-creating. Everyone in all sectors needs to advance these deeper developmental capacities to effectively respond to their challenges. But almost no one is receiving help in how to cultivate and develop them.

Why is the evolution from 2.0 to 3.0, and from there to 4.0, not progressing as fast as many leaders and change makers have hoped?

I believe that transformations are not progressing faster and that the massive knowing-doing gap continues to exist because we lack an *intentional support structure* that focuses on building these capacities. The educational system is the most obvious institution to take on this role. If realized, it would fully deliver on education's second metafunction: the empowering of learners to co-sense, presence, and co-shape the future.
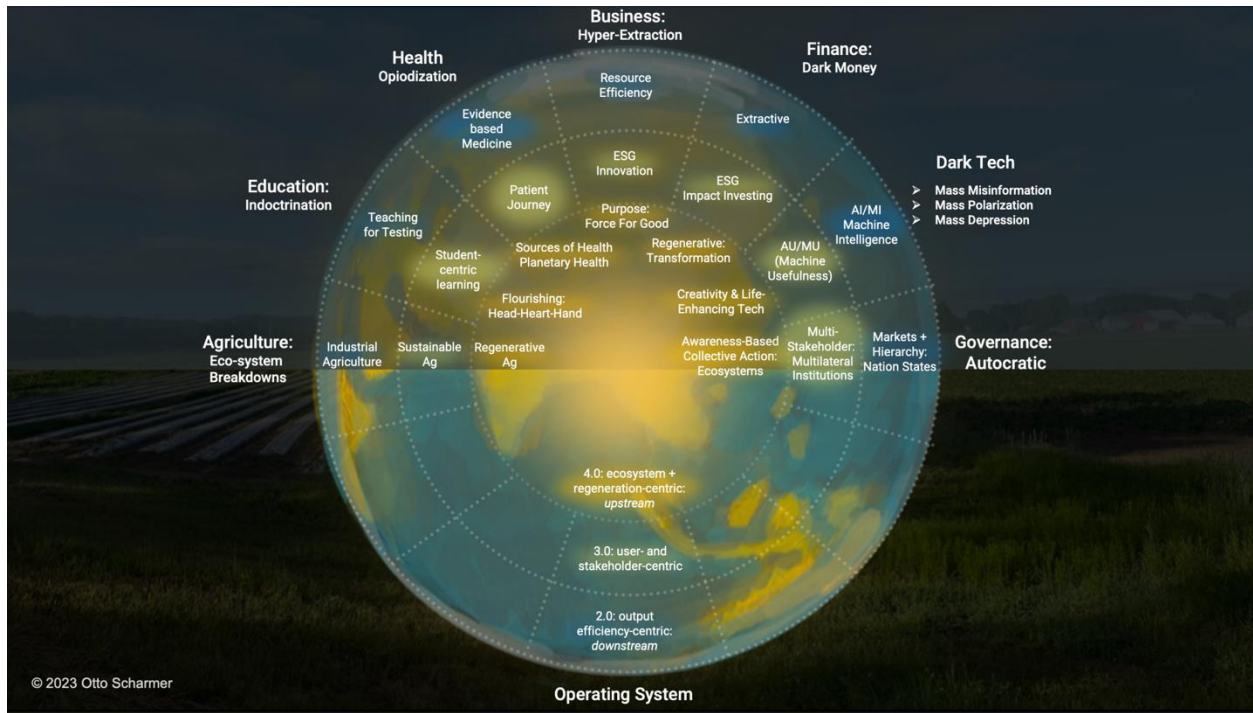
Figure 3: The empty core of convergence has everything to do with the future of education

In other words, such an education system would both transmit explicit knowledge and support the development of tacit knowledge, which includes both *embodied* and *self-transcending knowledge* (Scharmer 2001). It would focus on improving the quality of the soil—that is, the quality of the relational and transformational capacities that prevent most societal systems from progressing on their journey of transformation (from a 2.0 to a 3.0 or a 4.0 way of operating) at a pace that is commensurate with the challenges facing our planet and communites.

Education for Human Flourishing

Education for human flourishing matters, not only from a viewpoint of a fullfilled life experience. It is also a **systems imperative** if we consider the **challenges facing our species** and the **transformational societal changes** that are called for now.

The OECD's High Performing Systems for Tomorrow (HPST) grounds the "education for human flourishing" concept in three ways: as part of the Western and non-Western lineage starting with Aristotle, in the recent science on the subject, and in the current challenges facing advanced educational systems (OECD 2023).

The HPST group established three principles for the future of education, including (a) "new ways of seeing, sensing, and interpreting the world" to rebuild meaning and restore well-being; (b) "opportunity and fulfillment for everyone, respecting and nurturing a broader range of

strengths, including dispositions for caring and creativity"; and (c) equipping people to "design and establish the next set of economic, societal, and organizational models."

The group suggests three main capabilities or competencies that integrate these principles for reshaping education around flourishing: adaptive problem solving, ethical decision making, and aesthetic perception.

The aspiration of the new framework is to link education to human flourishing, rebalancing it in the service of a broader idea: "to nurture, in all of us, a balanced suite of distinctive human capacities, that equip us not only to flourish as individuals but contribute to flourishing societies and economies, in harmony with the planet."

The questions that I inquire into in the remainder of this paper begin with "How?." How can that timely and necessary aspiration be made practical? How can it be moved from the margins to the center of our educational systems?

3. Seven Core Capacities for Creating Futures of Flourishing

The perspective that I propose is this: We should reconceive schools and eduation systems as *social fields*—that is, not just for the visible knowledge they convey (their first metafunction) but also for the less visible capacities they cultivate and teach: how to co-sense and co-create the future in ways that advance human flourishing (their second metafunction).

In other words, educational systems should be structured around what is below the surface: soil, seeds, and strong roots. These elements, if nurtured and cultivated in the right way, will begin to grow into the practical competencies that are visible above ground and together embody agency, flourishing, and hope. This extension of perspective from the practical **competencies** above ground to the underlying enabling conditions that are less visible to the eye focuses on the primary enabling **capacities** of the educational process. These capacities reflect the learner's inherent abilities and highest potential to develop skills and knowledge.

The seeds are there, as pointed out by the HPST group quoted above; they are inherent in all learners. In education and early childhood development we sometimes use another metaphor to describe this deeper work of improving the quality of the environment (or "social soil"): the *cradle*. We need supportive, cradle-like *holding spaces* for any of these capacities to be activated. Building on that idea, I use CRADLES as an acronym representing the seven core capacities required to put this foundational level of learning into practice:

1. **Co**-creating: Co-sensing and co-creating a future of flourishing
2. **R**elating: Empathic and generative listening with your mind and heart wide open
3. **A**wareness: Being present and paying attention to your attention
4. **D**ialogue: Thinking together across social and cultural boundaries
5. **L**eading: Holding the space for co-sensing and co-shaping the future
6. **E**mbodying: Focusing on the whole person learning and multiple intelligences
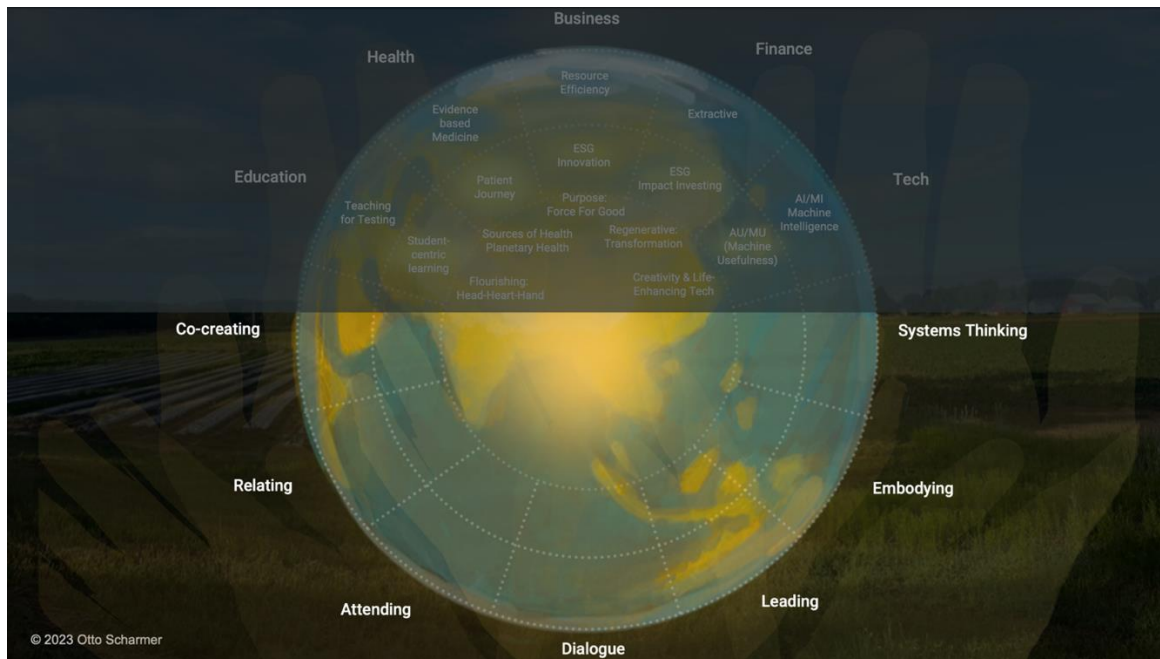7. **S**ystems thinking: Sensing and presencing with the whole system in mind

Figure 4: CRADLES—Seven Core Capacities for Co-creating a Future of Flourishing

CRADLES: Nurturing and Growing the Capacity to Create the Future as It Emerges

The Indo-European word root for *cradle* is *ker-* or *kere-* and is associated with growth, creation, and nurturing. Why does this matter? Because of the stark challenges that educators face in preparing the next generations to deal with planetary and social disruptions, which will need more than just a transfer of knowledge to address. These challenges felt in classrooms across the planet include:

- A lack of agency and a sense of **collective depression**
- Social media-based **echo chambers** that amplify the behavior of "othering"
- A condition of **cultural ADHD** that amplifies the disconnect with ourselves and others
- **Hyperpolarization and violence** that undermines trust and collective agency
- **Authoritarian leaders** who promote architectures of separation and a return to the past
- A **disconnect from natural ecosystems** amidst accelerating ecological breakdowns

- Siloed and **shallow ways of thinking** that prevent us from seeing the world in its full complexity

These seven challenges can seem overwhelming, not only to educators, which is why the CRADLES capacities matter: they address each of these challenges at their root.
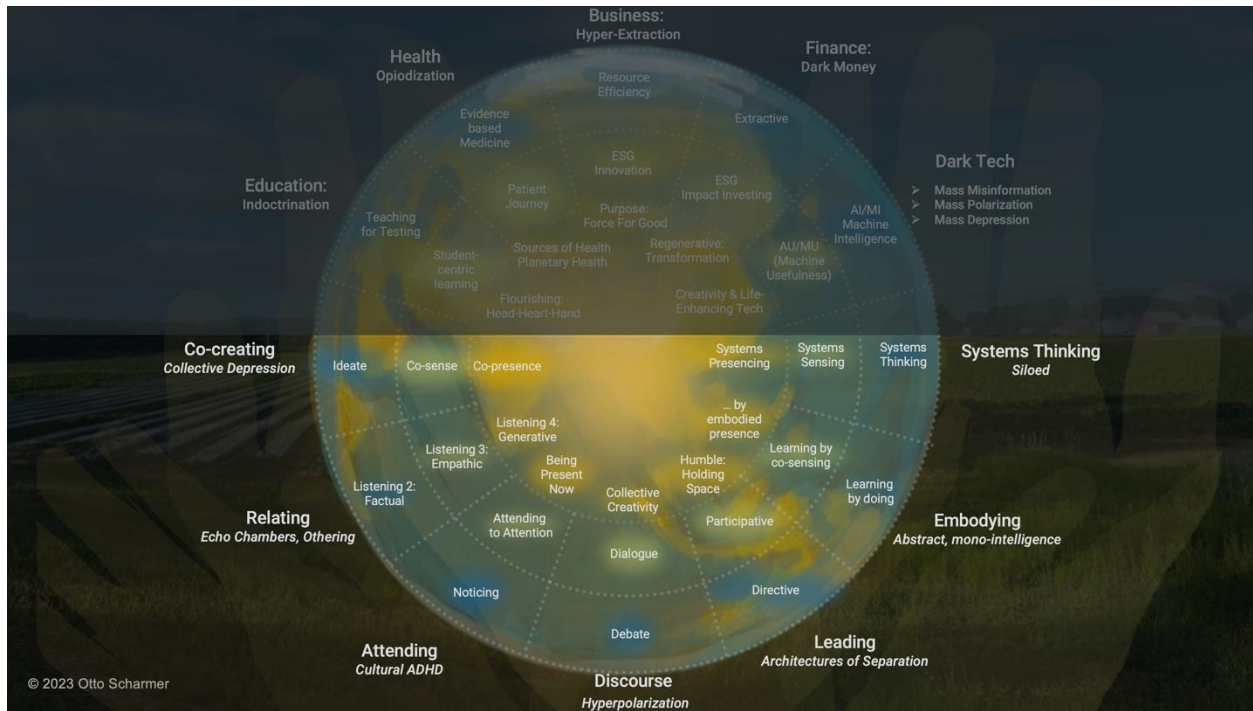
Figure 5: Seven Core Capacities for Addressing the Core Challenges of Our Time

Figure 5 depicts two contradictory storylines and underlying forces that can be observed in our societies and systems. At times, the tensions between them seem to almost rip us apart. One is the storyline from 2.0 to 3.0 and 4.0. That's the story that nudges us gently toward the collapsing boundaries at the empty core.

The other story is connected to the challenges discussed above and pulls us into the outer sphere. That story has to do with Dark Tech (leading to mass misinformation, mass polarization, and mass depression), Dark Money (particularly in the US after the disastrous Citizens United Supreme Court decision in 2010), hyper-extraction and "opioidization," and the manipulation of educational content (such as book banning or the selective teaching of history in the US, Russia, Turkey, and India). All of these disturbing phenomena are enabled and amplifed through the challenges depicted on the outer sphere of figure 5.

Seven Core Capacities

The lower half of figure 5, the southern hemisphere, shows how these challenges can be addressed by strengthening the seven foundational core capacities, as detailed below.

1. Co-creating: From collective depression to inventing the future by doing

Co-creation is the capacity to create together, to bring something new into being. It's the essential antidote to depression, which is a symptom of being unable to access one's deeper sources of creativity.

The seeds of co-creativity are innate in all humans, but often dormant. Conditions that allow these seeds to develop (the "soil") include a challenge, a process, and a holding space. Each challenge includes a task, an audience, and a time limit ("Here is your task. Each team will present its prototype to the rest of the group in five hours.").

As the seeds of co-creativity grow and evolve, three distinct skills need to be developed:

- Co-ideation and an *open mind* to generate new ideas
- Co-sensing and an *open heart* to tune in to relevant contexts and user-worlds
- Co-presence and an *open will* to surrender to and channel what wants to emerge

The quality of a co-creative process is a function of mastering these competencies or skills.

In summary, *co-creating* is a foundational capacity that can be learned and that is applicable and relevant to all sectors of society. The capacity of co-creating is based on three areas of competence: co-ideation, co-sensing, and co-presencing.

2. Relating: From echo chambers to empathic and generative listening

Listening is the capacity to relate: to others, to the planet, and to oneself. It's the essential antidote to echo chambers and othering because it pierces the walls that separate us.

The seeds of relating and listening are innate but often dormant. Conditions that allow these seeds to develop (the "soil") include being listened to by individuals and by a community, as well as a practice of listening and receiving feedback.

Listening is one of the most underrated learning skills, but it is a core skill for transforming human relationships. How we relate to the world and to ourselves depends on the quality of listening we engage in. As the seeds of listening grow and evolve, the listener develops three distinct skills or areas of competence:

- *Factual listening* reflects curiosity and open-mindedness. The listener is focused on taking in new facts and information, allowing new questions and observations to emerge.

- *Empathic listening* moves the focus from the objective world of things, figures, and facts to another person's lived experience, activating our empathy and building our ability to see a situation through another person's eyes. Whereas factual listening originates from *inside* the boundaries of our own cognitive organization, empathic listening originates from what another person is saying. The source of our listening moves from inside to *beyond* the boundary of our own organization: the listening originates from the other.

- *Generative listening* further expands on the qualities of listening by encompassing the whole social field. The listener shifts the source of listening from what *is* (what has already emerged) to what wants to emerge. The listener attends to the present, to what is emerging from the moment, from the now.

In summary, *relating* and *listening* are foundational capacities that can be learned and that are applicable and relevant in all sectors of society today. The capacity of listening encompasses three areas of competence: factual, empathic, and generative listening.

3. Awareness: From cultural ADHD to paying attention to your attention

Awareness and how we pay attention shape how we perceive, attend, and become aware. The ability to pay attention is, in the context of the 21st-century attention economy, the ultimate scarce resource that everyone is fighting for. All educators are battling diminishing attention spans (cultural ADHD). *Paying attention to our attention* is the antidote to this condition, because it allows us to take back agency and control.

The seeds of awareness and attention are innate.The conditions that allow these seeds to develop (the "soil") are created by practices. Awareness or mindfulness practices are among the essential "fertilizers" that nourish the seeds and contribute to the three related skills or areas of competence:

- The ability to suspend habits of judgment and see with fresh eyes
- The ability to redirect your attention from the object to the source of attention
- The ability to let go and turn from focused attention to open awareness, to being fully present now

Learning to pay attention more consciously is key for all 21st-century learning and leadership capabilities. It is particularly important now because *energy follows attention*. Whatever you pay attention to as an educator or as a leader is where the energy of the people around you—and your own energy—will go.

In summary, *awareness* and *paying attention* are foundational capacities that can be learned and that are relevant in all sectors of society. They are based on three areas of competence: seeing with fresh eyes, paying attention to the source, and being fully present.

4. Dialogue: From hyperpolarization to generative dialogue

Dialogue is the capacity to shift regular conversations into a process of thinking and creating together. Dialogue is not just what happens when people talk to each other. Dialogue is the capacity of a system to see itself, to bend the beam of observation back onto itself. In a world where hyperpolarization prevents us from acting collectively in response to the challenges facing our planet, dialogue can transform that self-destructive pattern and restore collective agency.

The seeds of dialogue are innate. To allow these seeds to grow and mature we need high-quality holding spaces (fertile soil). A holding space is the context that you create for a deeper conversation to take place. As the seeds of dialogue and conversation grow, three distinct skills or areas of competence need to be developed:

- *Debate*: moving from polite phrases to speaking your mind (confronting)
- *Reflective dialogue*: from advocacy to inquiry; speaking from the whole (connecting)
- *Generative dialogue*: speaking from flow, from what is moving through (collective creativity)

Engaging in conversation and dialogue is not just another process. It's more important than other processes because it creates the world in which educators, leaders, and change makers operate.

Society has seen a massive degradation of conversation (echo chambers, hyperpolarization, etc.). Dialogue matters because it allows us to move from polarization and echo chambers to collaboration and co-creation. Conversation shapes how we show up in the world, how we connect to others, how we work, and how we reflect and learn.

The question "How are you?" and the response "I am fine" reflect conversational downloading: We say what we believe others want to hear. It is a polite form of conforming and staying in one's own bubble.

When an exchange takes the form of "How are you?" followed by "Not so well," the quality of conversation is elevated, as the speakers shares their genuine feelings in the moment, opening the possibility for something unexpected to be heard. Attention is heightened; the speakers listen for the unexpected or unknown. This type of exchange might be called a discussion or even a debate, where divergent views are exchanged. Progress is made. But a debate can also be confrontational: me versus you, if the goal is to win.

Dialogue is different. Bill Isaacs described dialogue as the art of thinking together (Isaacs 2002). Moving from debate to dialogue involves a profound shift, from beating down the opposing view toward curiosity and inquiry. Dialogue does not imply that everyone agrees but describes a collective process of reflection and inquiry.

Generative dialogue deepens this inquiry, and the boundaries in the social field disappear. This happens in moments of co-creation. When working in a collective flow, we might lose track of time and place and be fully engaged in what is emerging from the now. In these moments of creative flow new ideas emerge and our relationships transform and deepen.

Learning to navigate these different types of conversation is an essential capacity. It requires understanding what quality of conversation is appropriate in the moment.

In summary, *dialogue* is a foundational capacity that can be learned and that is relevant in all sectors of society. The capacity of dialogue is based on three core competencies: (1) engaging in debate (confronting), (2) engaging in inquiry or reflective dialogue (connecting), and (3) engaging in generative dialogue (collective creativity).

5. Leading: From architectures of separation to architectures of connection

Leadership is the capacity to co-sense and co-create the future. The Indo-European root of the word *leadership* is *leith*, meaning "to go forth," "to cross the threshold," or "to die." In a world where *architectures of separation* and leaders, driven by ego, have become more prevalent, the capacity to move beyond narrow, ego-focused aims and step forth to co-sense and co-create is much needed.

The seeds for sensing and stepping into the future exist in everyone. To allow these seeds to grow and mature we need high-quality holding spaces (fertile soil) that encourage trust and action confidence.

As the seeds of leadership and self-leadership begin to grow, three skills or areas of competence need to be developed:

- Directive leadership: Leading by identifying objectives
- Participative leadership: Leading by including multiple voices
- Humble leadership: Leading by holding the space for co-sensing and co-creating

These qualities of leadership require inner work on the source, the inner place from which we operate when we act, communicate, perceive, or think.

In summary, *leading* in the sense of co-sensing and co-creating the future is a foundational capacity that can be learned and that is highly relevant in all sectors of society today. This capacity is based on three areas of competence: leading by giving direction, by including others, and by creating a nurturing environment.

6. Embodying: From abstract mono-intelligence to grounded multiple intelligences

Embodying is the capacity to manifest the new not just through the intelligence that resides in the brain, but through the multiple intelligences in our whole being, through individual and collective action. It is the antidote to all the unwanted side effects of disconnections from our bodies related to artificial intelligence (AI) and machine intelligence (MI), and to disconnections from the natural ecosystems that we belong to. While AI and MI move us in the direction of disembodied and decontextualized learning, embodied learning can help us to reground and reroot ourselves and link what we do and who we are with our real relationships and sources of energy.

The seeds for embodied learning are innate in everyone, but too often we have been cut off from our embodied senses through an overemphasis on cognitive learning. Creating environments that nuture these seeds begins with becoming aware of the multiple intelligences (Gardner 2008). These whole-person intelligences are also reflected in non-Western and Indigenous epistemologies and ways of knowing (Goodchild 2021).

As the seeds of embodying grow and evolve, three distinct skills or areas of competence need to be developed:

- Learning by doing: learning by linking the intelligenceS of the head and the hand
- Learning by co-sensing: learning by extending the body of awareness from me to we
- Embodied presence: learning by linking the intelligences of the head, heart, and hand both individually and collectively

These three approaches to learning differ signficantly but share one common trait: the use of embodiment combined with awareness or reflection practices, as a source of learning.

The first stage of embodied forms of learning emerged years ago in the various forms action learning. When I look at my environment at MIT, particularly the Sloan School of Management, real-world action-based learning has gone from marginal to mainstream in just the past two decades. All action learning entails three elements: preparation, active immersion, and reflection.

Learning by co-sensing may have even greater implications for the future of learning but currently is far less developed. Today we see a variety of forms of sensemaking that are critical for deepening social and collaboration skills. Co-sensing consists of three elements: first a practice, something that you *do* (for example, looking at an image in stillness, or or visiting a

place or community); second, a structured process of sensemaking, of surfacing and attending to your own observations and insights and to those of everyone else in the group; and third, sitting with it, staying with it for a moment, letting the dust settle, and allowing the awareness to move from focused to open. Learning by co-sensing moves your attention and awareness from the me and the it (practice) to the we (sensemaking).

Learning through embodied presence means taking the process of embodied awareness to a level that encompasses head, heart, and hand individually and collectively. At the individual level embodiment occcurs in our physical body. But what are the bodies that we collectively enact (or are part of)? My colleague and Presencing Institute co-founder Arawana Hayashi likes to say that in all social art-inspired deep learning we are dealing with three bodies: our physical body; the big body: planet earth; and our social body: the sum total of relationships that we collectively enact moment to moment.

Some of the moments when we experience these other bodies are well known: for example, silence in nature, when you spend an hour (or five minutes) listening to the forest. And in fact Mother Nature, as we have learned from our colleagues (Goodchild 2021, and others), is perhaps our greatest teacher. But there is yet another source of embodied learning that goes largely unnoticed. And that is art. At the Presencing Institute, we have developed a set of *social art* disciplines. These include Generative Scribing and Social Presencing Theater (Bird 2018; Hayashi 2021).

In summary, *embodiment* is a capacity for bridging our profound disconnects from nature, from each other, and from ourselves by using practices that help us to become more aware of and connected with our own body, our "social body," and the planetary body that we share. The innate intelligences that reside in all three of these bodies are the key to activating intention, imagination, and inspired action that can help to transform our ways of operating.

7. Systems Thinking: From silos to making systems see, sense, and invert themselves

Systems thinking is the capacity to see the whole and make sense of our levels of interconnectedness with existing patterns and with what is emerging. Systems thinking closes the feedback loop that connects what we see, what we think and say, and what we collectively enact. In other words, it is at the core of addressing the knowing-doing gap.

Systems thinking is grounded in one of today's most misunderstood concepts: *thinking*. Thinking is misunderstood from multiple angles. In AI-related discourse, thinking is often equated with what machines can do: computation based on existing algorithms. Even large language models like ChatGPT are essentially just brilliant sentence-completion machines that, if fed with the right real-world data (based on human input) can perform in amazing, astonishingly intelligent ways. But that's not real or deep thinking.

In contemporary popular culture, thinking is usually criticized as abstract, disembodied thought because it disconnects our bodies from our experience. Even though I agree with the criticism that abstract thought is disconnected from body and experience, I disagree with the conclusion. The rejection of thinking doesn't solve anything. It's just another way of handing over the keys of society to machines.

Both of these views misconceive the nature of real thinking: it is one of the most powerful creative forces in the world. Like conversation, it is a primary process and foundational capacity for creating the world we operate in. Deep thinking is a core capacity and competence that must be learned, cultivated, and activated in all institutions of education.

The seeds of deep thinking-based systems thinking are innate in all human beings. The environment (the "soil") that nurtures them bends the beam of observation back onto the self—back onto its source. Activities that foster creative and generative thinking include attention, reflection, and awareness practices.

As the seeds of generative thinking grow and evolve, three skills or areas of competence need to be developed:

- *Systems thinking*: thinking with an awareness of patterns, interrelationships, and feedback loops
- *Systems sensing*: thinking from the heart rather than the head; using feelings as an organ of perception that allows us to tune in to the perspectives of other stakeholders in a situation
- *Systems presencing*: deep sensing and thinking that turns itself into an instrument for the highest future potential to manifest through who we are and what we do

I have written about the evolution of systems thinking to systems sensing and presencing in other places (Scharmer 2018), so I will keep it short here. Briefly, the evolution of systems thinking toward the competences of co-sensing and co-creating the future needs methods, tools, and practice fields (supportive soil).

In summary, *systems thinking* is the capacity that allows the learner to shift from a siloed to a whole-system view of both the patterns of the past and the highest future that wants to emerge.

4. New Infrastructures for Learning and Leadership

What does the shift in education from what is above the soil to include what is below its surface look like in practice? How can it be co-developed by educatational institutions in their own contexts?

The shift from 2.0 to 3.0 to 4.0 operating systems will happen through innovations in curriculum, learning, and pedagogical methods, of course. **But perhaps the most important component will be a strengthened leadership that creates innovations in learning and leadership infrastructures that support CRADLES-type competencies and capacities throughout the system.**

Educators and leaders on a journey of transformational change need support. Transformational change does not happen because someone talks about it—even if that someone happens to be the boss. Transformational change is a complex social and emotional process that involves the inner leadership work of letting go and letting come. It involves cultivating the CRADLES capacities of co-creation, listening, and dialogue, paying attention to your attention, humility, embodied presence, and a deepened quality of systems thinking that is sourced from sensing the emerging future. All seven of these capacities are not only foundational to the future of learning, but also essential to the future of leadership. To transform our social operating system, says OECD HPST expert Stevenson, we must realize that "*to lead is to learn* from the emerging future" and "*to learn is to lead* from the emerging future."

Matrix of Educational Evolution

Operating System	Learner	Educator	Relationship	Organization	Governance
1.0: Input & Teacher-Centric	Passive Recipient	Authoritarian	Downloading (Teacher Centric)	Centralized and siloed: Low degrees of local autonomy	Machine Bureaucracy: No Feedback Loop
2.0: Output & Efficiency-Centric	Memorizing Correct Answers	Expert	Transactional (Input-Output)	Decentralized: Increased degrees of freedom, focus on testing scores	Professional Bureaucracy: Slow Feedback Loop
3.0: Outcome & Lerner-Centric	Exploring Questions	Facilitator	Dialogic	Networked: higher degrees of freedom and of openness to local context	Learning System: Institutionalized Feedback Loop
4.0: Co-creative & Eco-System-Centric: Human Flourishing	Co-sensing and Co-creating the Future	Generative Coach / Midwife	Transformative: Generative, Co-creative	Eco-systemic: Breathing-in, breathing-out, shifting the locus of learning	Innovation Eco-System: Awareness-Based Collective action (ABC) in real time

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Fig. 6: Upgrading the educational OS in the classroom, in the school, and in systems governance

The matrix in figure 6 outlines some of the dimensions of upgrading the educational operating system: how they show up in the classroom, and how they play out in the evolution of the school as a learning organization and in the governance of the whole educational ecosystem.

Innovations in infrastructures for transformative learning and leadership will vary significantly depending on context. But generally speaking, three types of infrastructures are largely missing from today's system.

Infrastructures for Co-sensing: There is no shortage of sensemaking in society today. So what's the problem? It's all happening in silos. There is a profound lack of infrastructures for co-sensing in society and in school. The social arts can play a critical role here, as discussed above. So can infrastructures that support deep and transformative connections between learners (in schools and higher ed) and the communities at the margins (often minorities) or on the frontlines of grassroots innovation and renewal. Co-sensing infrastructures combine three elements: preparation, deep-dive experiences into a social context, and collective sensemaking.

Infrastructures for Co-presencing: There is no shortage of reflection, mindfulness, or stillness practices in society today. But what's missing are widespread practices that are accessible when it matters most: when you are young and exposed to the noise and distraction of social media perfectly designed to amplify misinformation, anger, hate, and fear. Deep contemplation and reflection practices, particularly in conjunction with immersion experiences in nature, can be a major source of personal, energetic, and spiritual renewal. These infrastructures and practices also combine the three elements of preparation, a deep-dive experience, and collective sensemaking.

Infrastructures for Co-creating: These infrastructures are perhaps the most developed in society today. Processes and tools like design thinking for the production of new things (gadgets) are a good example. What's often missing from innovation processes, though, is a focus on social innovations, on transforming how the players in a system relate to one another and work together (i.e., to upgrade the "operating system" in use).

All three of these infrastructure innovations provide a great opportunity to renew our educational system; they are equally needed by the surrounding institutions and place-based communities. In other words, new types of infrastructures could support the evolution of both our educational systems and society's other systems as an activation of the boundaryless core at the heart of the above visuals (figs. 1–5), linking the northern and the southern hemnispheres.

5. Theory of Change: Small Islands and Ecosystems of Coherence

Let me say one thing about the underlying theory of change by quoting the Nobel Prize-winning chemist Ilya Prigogine (2020): "When a system is far from equilibrium, small islands of coherence in a sea of chaos have the capacity to lift the entire system to a higher order."

Prigogine talks about the significance of bifurcation points. When a nonlinear system is moving from one state to another, it hits moments in which small differences can have an outsize impact on the future. In my experience this idea has considerable resonance for people both in the specific domain of education and in the broader domain of our collective journey on earth. Small islands of coherence have the capacity to lift an entire system to a higher order.

What I would add to this from my own experiences is this: yes, small islands of coherence are one element. But there is another as well. An **ecosystem of coherence** is needed to connect the islands and to intentionally align and amplify the good work that is being done at the grassroots (and other) levels to advance systems change toward a future of flourishing.

Relating to the Future

The practice of presencing is grounded in thinking about the future differently. Normally, when experts talk about the future, they refer to what *other* peole will do in a *different* time and place. That's not what I have learned in working with innovators, creators, change makers, and entrepreneurs. For them the future is not something abstract "out there," but something very personal right *here*, right *now*: it is a possibility that is *looking at me* because *it depends on me* to bring it into reality. It doesn't get more personal. There may be other species in nature that perhaps are organized by a higher intelligence. But human beings are the only ones who have *agency* in creating the future that we choose and want. And that is what the seven root capacities essentially are about. The more AI advances, the more critical these capacities will become.

Three Narratives

I started this inquiry by exploring the dual structure of our current educational challenge: the increasing polarization and disintegration in society (he larger world), and the disconnect and disintegration of our inner mental health-related realities (the self). I suggested that in order address this challenge at its root we need to apply a social field perspective that extends the systems view from traditional academic competencies (as exemplified by the STEM disciplines) *above* the ground to the CRADLES capacities and competencies *below* the surface.

At a moment when many of us are beginning to lose hope, it is important to remember that hope is not optimism. Hope is, as the late Vaclav Havel reminded us, "not the belief that things will turn out well, but the conviction that something makes sense, regardless of how it turns out." Perhaps the answer to our current predicament has to do with accessing the deeper layers of our humanity that Havel referred to. These are the same layers that the seven aforementioned core capacities originate from.

As we move deeper into uncharted territory of this century, we will face profound choices as individuals, organizations, communities, and countries, and as a species. Perhaps the most important decision will be choosing what kind of future we want to live in and work for.

Is it a future that remains in the realm of the current structures—that is, in the realm of 2.0 and 3.0 types of organizing. In this narrative the old 2.0 structures of modernity (including markets, property rights, nation-states, etc.) are still working fine, and can, with some modifications around emerging 3.0 structures, continue to work going forward. We would have a blend of 2.0 and 3.0 (modern and postmodern) ways of thinking, structuring, and organizing. In my view, that would constitute *muddling through.*

The alternative views agree on one thing: *more of the same is not an option*. We need radical change. The nature of that change, however would be strikingly different in the two views.

A second view revolves around a narrative about making your country great *again*. Its a populist narrative that appeals to many people. It reorients our focus on the past, at least culturally, and is powered by a host of powerful tech- and social media-enabled amplifiers.

A third view of the future of education would come with the most significant changes. It's a view of society in which something is ending and dying and something else is about to be born. What's ending and dying are the old structures of modernity that have been based on ego, extraction, colonialism, and degradation. The new structuresthose waiting to be born—are based on eco (rather than ego), regeneration, restoration, and human and planetary flourishing. In her book *Hospicing Modernity (2021)*, Vanessa Andreotti offers a powerful account of that narrative.

The Future That Is Looking at Us

What do these narratives mean for the future of learning, leadership, and institutional change? Most people agree that more muddling through and more of the same will not get us where we want to be. The second narrative of course is a real possiblity. But so is the third one.

For the third scenario to come into being, we need to strengthen the CRADLES-related capacities and competencies. They are critical for dealing constructively with the growing conflict and disconnect between these three diverging narratives, mindsets, and views of the future. The seven foundational capacites will be critical for cultivating the soil of the social field that benefits and supports all systems and all sectors.

The cultivation of the *agricultural soil* in the agricultural field (humus) plays a critical role in the climate-related transformation of food systems and land use today; but in all the other societal sectors the cultivation of the *social soil* is of no less significance.

It is no coincidence that humus, humility, humanity, and humor all share the same Indo-European wordroot. All are related to a deep planetary and human potential represented by the boundaryless empty core of figure 7 below.

Fig. 7: Enabling Conditions for Flourishing: Humility, Humanity, Humus

All these words point into the direction of a profound generative potential that *could*—but does not have to—be activated. Advancing the seven core capacities is critical for evolving the current structures of education from current modes of operating--which are still in the grip of modernity (2.0) and postmodernity (3.0)--toward new forms of thinking, conversing and operating in ways that are inclusive of non-Western and Indigenous epistemologies. These emerging and still experimental approaches have many faces and do not yet even have a name.
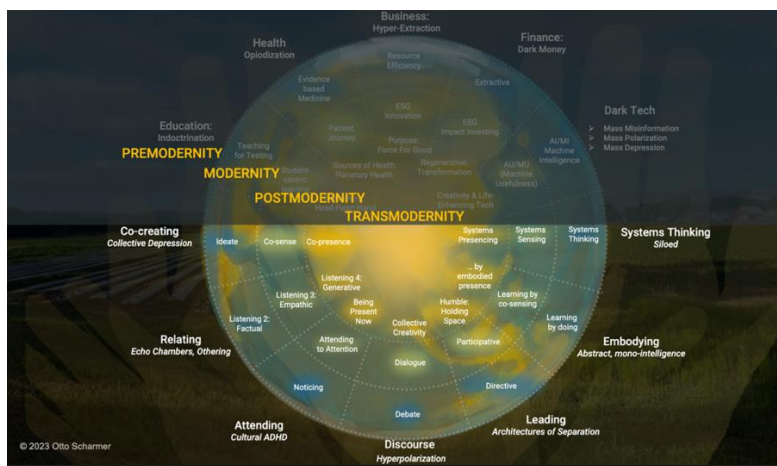

Fig. 8: The evolution of societal structures from modern to postmodern to transmodern modes of operating

Initial conversations around metamodernity (the attempt to integrate modern and postmodern elements), polymodernity (opening up to non-Western epistemologies and narratives), and

transmodernity (doing all of the above but emphasizing the emerging dimension of planetary awareness) are first steps into this direction.

Transmodernity perhaps is the most appropriate of these concepts as it transcends current old structures more explicitly towards organizing around our planetary challenges and the emerging planetary awareness that we can observe taking shape particularly among younger people.
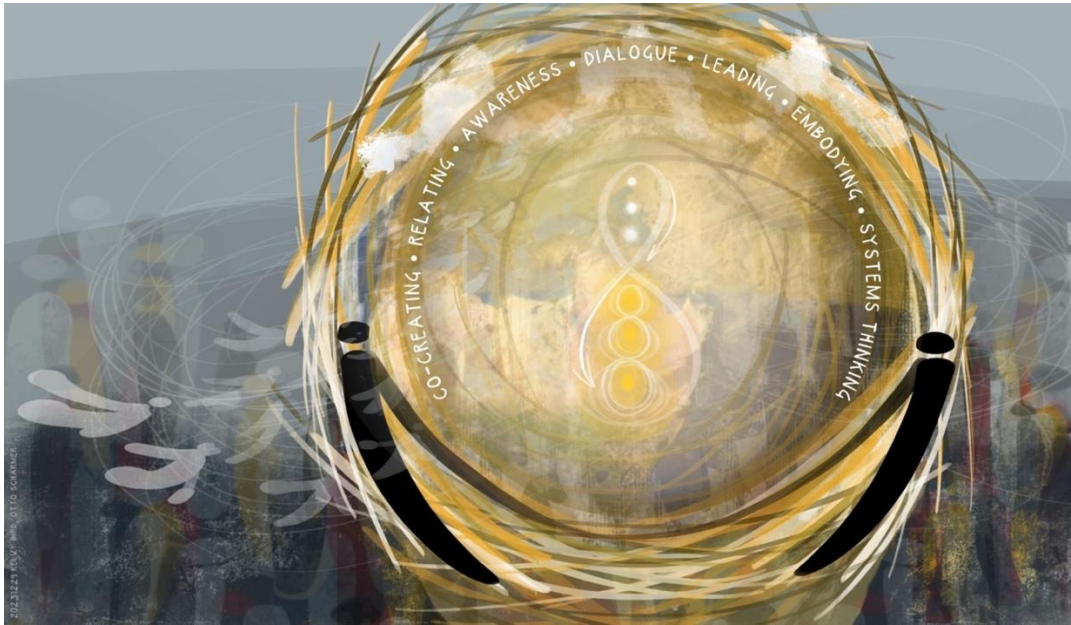

Figure 9: Seven Capacities (CRADLES)

Helping this new distributed awareness to develop, and supporting it with the right kind of holding spaces (cradles) is perhaps the primary responsiblity that living generations have to the planet and to the future that depends on us.

The most important letter in the word CRADLES is the last one, S, for "systems thinking": because the letter S creates the plural form: more than *one* cradle. Scientists and historians acknowledge that there is not just one cradle of mankind but many *cradles* of mankind, most famously around the Great Rift Valley in East Africa. Likewise for civilizations: there is more than one civilization, and most have more than one cradle (including Ancient China, the Indus Valley, Mesopotamia, Ancient Egypt, Mesoamerica, and the Andean South America).

As we continue to move from a previously *bipolar* to a *unipolar* world, and from there to a more *multipolar* world, our epistemological foundations (underlying our concepts of modernity) also need to evolve toward formats that are more in synch with the realities of this century.
The CRADLES capacities are part of the foundational equipment that, if cultivated and developed appropriately, will help educational systems to deliver on *both* of its metafunctions by empowering current and subsequent generations of learners to co-sense and co-shape the future as it emerges.

References

Andreotti, V. de O. (2021). *Hospicing Modernity: Facing Humanity's Wrongs and the Implications for Social Activism*. North Atlantic Books.

Bird, K. (2018). *Generative Scribing: A Social Art of the 21st Century*. PI Press.

Bohm, D. (1996). *On Dialogue.* Lee Nichol (Ed). Routledge.

Cajete, Gregory A. (2010). Santa Clara Pueblo. Contemporary Indigenous education: A nature-centered American Indian philosophy for a 21st-century world. *Futures*, 42(10), pp. 1126-1132, https://doi.org/10.1016/j.futures.2010.08.013. Accessed December, 23, 2023.

Centers for Disease Control (CDC). (2023). *Youth Risk and Behavior Survey*. Data Summary & Trends Report. 2011-2021, p. 60. https://www.cdc.gov/media/releases/2023/p0213-yrbs.html. Accessed December, 20, 2023.

Gardner, H. E. (2008). *Multiple intelligences: New Horizons in Theory and Practice*. Basic Books.

Goodchild, M. (2021). Relational systems thinking: The Dibaajimowin (Story) of re-theorizing "systems thinking" and "complexity science," *Journal of Awareness-Based Systems Change*, 2(1), May, pp. 53-76, https://jabsc.org/index.php/jabsc/article/view/577 Accessed January 1, 2024.

Isaacs, William. (2002). Dialogue and the art of thinking together. *Journal of Organizational Change Management,* 15.

Kegan, R. (1994). *In Over Our Heads*: *The Mental Demands of Modern Life.* Harvard University Press.

Kolb, D. (1984). *Experiential Learning: Experience as the Source of Learning and Development.* Financial Times/Prentice Hall.

Heinonen, O.-P. (2022). *How to Lead and Educate for the Future?* https://www.aalto.fi/en/news/how-to-lead-and-educate-for-the-future. Accessed December 22, 2023.

Hayashi, A. (2021). *Social Presencing Theater: The Art of Making a True Move.* PI Press.

Machado de Oliveira, V. (2021). *Hospicing Modernity: Facing Humanity's Wrongs and the Implications for Social Activism*. North Atlantic Books.

Meadows, D. (2008). *Thinking in Systems: A Primer*. Chelsea Green.

OECD (2023). *High Performing Systems for Tomorrow*. Conceptual Framework Paper. https://www.oecd.org/pisa/aboutpisa/High%20Preforming%20Systems%20for%20Tomorrow%202023%20Framework.pdf. Accessed December 22, 2023.

OECD (2020). *Back to the Future of Education: Four OECD Scenarios for Schooling, Educational Research and Innovation*. OECD, Paris. https://doi.org/10.1787/178ef527-en.

OECD (2019). *Artificial Intelligence in Society.* OECD, Paris. https://doi.org/10.1787/eedfee77-en. Accessed December 22, 2023.

OECD (2018). *The Future of Education and Skills, Education 2030.* OECD Learning Framework 2030. https://www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf. Accessed December 22, 2023.

OECD (2017). *The OECD Handbook for Innovative Learning Environments, Educational Research and Innovation.* OECD, Paris. https://doi.org/10.1787/9789264277274-en.

OECD (2005). *The Definition and Selection of Key Competentices*. OECD, Paris. https://www.oecd.org/pisa/definition-selection-key-competencies- summary.pdf. Accessed December 22, 2023.

Pomeroy, E., & Oliver, K. (2021). Action confidence as an indicator of transformative change. *Journal of Transformative Education*, 19(1), pp. 68-86.

Scharmer, O. (2016). *Theory U: Leading from the Future as It Emerges.* Berrett-Koehler.

Scharmer, C. O. (2001). Self-transcending knowledge: Sensing and organizing around emerging opportunities. *Journal of Knowledge Management*, 5(2), pp. 137-151. https://doi.org/10.1108/13673270110393185.

Scharmer, C. O. & K. Kaufer (2013). *Leading from the Emerging Future: From Ego-System to Eco-System Economies.* Berrett-Koehler.

Scharmer, O. & Pomeroy, E. (2020). Action confidence: Laying down the path in walking. Blog: *Field of the Future*. https://medium.com/presencing-institute-blog/action-confidence-laying-down-the-path-in-walking-3d42805116fd. Accessed December 22, 2023.

Scharmer, O., Pomeroy, E. & Kaufer, K. (2021). Awareness-based action research: Making systems sense and see themselves. In D. Burns, J. Howard, J. and SM Ospina (Eds.), *The SAGE Handbook of Participatory Research and Enquiry*. SAGE.

Schein, E. (2013). *Humble Inquiry. The Gentle Art of Asking instead of Telling.* Berrett-Koehler.

Schön, D. A. (1983). *The Reflective Practitioner. How Professionals Think in Action.* Harper Collins.

Senge, Peter (1990). *The Fifth Discipline: The Art and Practice of the Learning Organization.* Doubleday.

Stein, S., Andreotti, V., Ahenakew, C., Susa, R., Valley, W., Amsler, S., ... & Lickerman, B. (2022). Methodologies for gesturing towards decolonial futures. In *Weaving an Otherwise,* pp. 141-158. Routledge.

Stevenson, M. (2019). *An OECD Learning Framework 2030*. In Bast, Caryannis, Campbell (Eds), *The Future of Education and Labour*. Springer.

Varela, Francisco J., et al. (1991). *The Embodied Mind: Cognitive Science and Human Experience*. MIT Press.