
Pillar
EDUVOLUTION


CONIA
COMITÉS
NACIONALES DE
INTELIGENCIA
ARTIFICIAL

“A child looks out the classroom window at a cloud of drones buzzing in the sky. Inside, the desks remain in static rows identical to those of a hundred years ago, and a teacher struggles to capture her students’ attention with a dusty book. Outside, in the palm of his hand, the child hides a smartphone that connects him to endless YouTube videos and TikTok viral challenges. Between the silent flight of drones and the chalk screeching on the blackboard, a generational abyss emerges. In that contrast, education cries out for a metamorphosis”.

Never before has humanity had such powerful tools at its disposal to democratize knowledge and yet those same instruments, when misused, threaten to deepen divides and erode academic integrity. We are faced with urgent questions: ***Will AI be the great educational equalizer, bringing personalized learning to every corner, or an amplifier of inequalities for those who fail to adapt?*** Will it displace educators, or free them from mechanical tasks so they can be more mentors than mere information transmitters? Will we shape a critical and creative generation with the help of intelligent machines, or instead produce youths who are dependent and misinformed?

We are facing a historical paradox: while technology advances exponentially, our classrooms seem frozen in time. The digital revolution has exposed children and young people to an unprecedented flood of information and stimuli—short videos, social networks, conversational AIs—that have shaped new ways of learning (and of getting distracted). ***The average attention span has become fleeting, reduced to mere seconds in a world of ephemeral content, posing a titanic challenge to teachers trained in the analog era.*** A deep divide has emerged between ***digital natives***—Generation Z and Alpha who grew up swiping screens—and many educators and parents, digital immigrants who remember a pre-Internet world. Their cultural reference points differ: today’s students learn as much from YouTube tutorials or TikTok dances as from textbooks. In fact, in 2023 children ended up spending on average nearly two hours a day on TikTok, a platform that many now even prefer over Google for searching information. This ***early digital exposure*** has transformed their cognitive habits: they are accustomed to immediacy, multimedia, and constant interactivity.

Yet while everyday life and entertainment are transformed by technology, ***classrooms have barely changed.*** In far too many places we still see rows of desks, rigid schedules, stale subjects, lecture-based teaching, and rote memorization exams. School, largely conceived during the Industrial Revolution, has been notoriously slow to adapt to the information revolution. **Sir Ken Robinson** already warned that ***we educate our children with a system designed for the needs of the 19th century***, preparing students "as if we were at the end of the 19th century or knew what the job market will be like in 20 years". Such a mismatch leads to ***educational lag*** in the face of the real world: curricula that do not include basic digital skills, ***teachers who receive no training in new technologies,*** policies that forbid rather than guide the use of modern tools. All this is happening while society undergoes an unprecedented technological acceleration.

Introduction

The arrival of ChatGPT in 2023 set off alarms in schools and universities: how can we distinguish authentic student work from machine-generated content? ***In the 2023–2024 school year, 63% of teachers in the U.S. reported cases of students being disciplined for improperly using AI on assignments,*** up from 48% the previous year. Many teachers began to distrust every essay submitted. At the same time, ***pedagogical experts warn that becoming obsessed with catching "cheaters" is a mistaken approach.*** The solution is not to declare AI the enemy of education, but rather to teach how to use it with judgment and ethics. Can we redefine what to assess and how, in order to foster creativity and critical thinking instead of the mere recall of information that a machine can generate in seconds? Beyond the issue of plagiarism, greater dilemmas emerge: ***what should schools teach in the age of AI?*** Memorized facts and procedures lose centrality when any datum is a click away; instead, "meta" skills —learning how to learn, critical thinking, collaboration, adaptability— and human values like empathy, imagination, and ethics gain importance.

In response to these challenges, the EDUVOLUCIÓN pillar emerges within the **HUMANWARE** treaty —an ethical-evolutionary pact between humans and artificial intelligences— with a simple yet powerful vision: ***to prepare ourselves for the dawn of a new hybrid civilization.*** Under that premise, the treaty identifies nine fundamental pillars for an ethical coexistence with AI. Among them is the

EDUVOLUCIÓN pillar, ***dedicated to forging a profound and ethical educational transformation in times of artificial intelligence.*** Just as the SER pillar (the human essence) serves as the foundation of the treaty, and the NEOCONSCIENCIA pillar provides an expanded consciousness perspective, EDUVOLUCIÓN offers the framework for humanity and artificial intelligences to grow together, learning from one another. The word EDUVOLUCIÓN evokes educational evolution: we are talking about ***reimagining education***—its methods, content, and purposes—in light of the new technological era. This pillar starts from a crucial conviction: the path to the future should not be one of human obsolescence in the face of machines, but of ***human empowerment with the help of machines.*** The priority is not the digital tool... it is the person who is learning. In this sense, EDUVOLUCIÓN asserts that education—formal and informal, throughout life—is the answer for society not only to tolerate AI, but to integrate it creatively without losing our direction or our values.

The EDUVOLUCIÓN Pillar and the HUMANWARE Treaty

The EDUVOLUCIÓN pillar represents the evolutionary leap that our educational communities must take in the face of the rise of AI and the technological complexity of the 21st century. What do we mean by **EDUVOLUCIÓN**? In simple terms, ***it means adapting and elevating education (in its content, practices, and scope) to prepare people to live constructively alongside artificial intelligences.*** It involves several levels of understanding. First, it promotes in human beings the awareness that learning in the age of AI requires new learning. It is no longer enough to know how to read, write, and do arithmetic; ***digital and algorithmic literacy*** is required: understanding how AI systems work (in basic terms), what potential they have, and what risks, biases, and failures they entail. Traditional education focused solely on static content must give way to an education centered on dynamic competencies: learning how to learn, critical thinking, creativity in using AI for information management, ethics, and responsibility. Second, EDUVOLUCIÓN postulates a ***pedagogy of human-AI collaboration.*** Unlike the previous paradigm in which technology was seen at times as a neutral tool, and at other times as a threat to be resisted, here the vision is co-evolutionary: humans and machines learning from one another. This recalls the visionary idea of Seymour Papert—a pioneer of computational pedagogy—who argued that children should program the computer rather than the other way around, using it as a medium to enhance their creativity and not as a black box that molds them. EDUVOLUCIÓN takes up that torch: the

best way not to be overtaken by AI ***is to ally with it wisely starting in education.*** If we manage to integrate AI responsibly into teaching-learning processes—enhancing our curiosity, empathy, and critical thinking with the speed, memory, and personalization that machines provide—both sides, human and artificial, will achieve accomplishments that would be unthinkable separately. An illustrative example comes from chess: after humans were surpassed by computers, "centaur chess" emerged, where a human plays assisted by AI, and those hybrid teams defeated both the best humans and the best machines on their own. The lesson is clear: ***collaboration can achieve more than competition;*** similarly, an education augmented with AI can overcome the limitations of both traditional teaching and purely automated instruction.

Within the HUMANWARE framework, the EDUVOLUCIÓN pillar complements and underpins the other principles. While pillars such as ***SER, NEOCONSCIENCIA, SIMBIOÉTICA, ARMONAUTA, TECNOCOGNICIÓN, NEUROSOBERANÍA, and SENSIVERSO*** define which values to protect in the digital age, EDUVOLUCIÓN focuses on how to develop and implement a definitive breakthrough in the education sector in step with AI. If we do not run at least at half the speed of technological progress, there will be no educational evolution, and the other pillars would remain empty theory: it does little good to demand action from governments and large corporations creating AI models if citizens lack the training to understand technical explanations; or to advocate for digital inclusion if our teachers are not prepared to mediate between vulnerable students and advanced technologies. ***EDUVOLUCIÓN provides the essential component of human training and preparation.*** It recognizes that facing the ethical and social dilemmas of AI is not just a matter of regulating machines, but of educating humans—from childhood through adulthood—to handle those machines wisely. In short, this pillar reminds us that no innovation will be fully beneficial without an equivalent leap in our wisdom and skills. Technology is evolving at breakneck speed; it is up to us to evolve education so that no one is left behind and so that technical achievements are accompanied by human progress.

Why is the EDUVOLUCIÓN Pillar fundamental?

Evidence and current events: various recent developments, trends, and studies show why it is urgent to ethically transform education in the face of AI. Let's look at some key evidence:

- ***Educational innovation vs. digital lag:*** In the global race to adapt teaching to AI, we see stark contrasts. On one hand, pioneering countries are incorporating AI into their education systems at breakneck pace. **China**, for example, will integrate AI as a compulsory subject throughout the national curriculum starting in 2025, teaching everything from robotics to machine learning even to 6-year-olds. **Hong Kong** as early as 2023 mandated 10 to 14 hours of AI education for all secondary students, including topics of algorithmic fairness and the social impact of technology. **South Korea** launched AI-enhanced digital textbooks for primary and secondary school in 2025, investing massively in infrastructure and teacher training (USD 760 million solely for training programs). These initiatives show that where there is vision, education is being reinvented for the digital age. On the other hand, many nations—including several in Latin America—are still moving slowly. Preexisting gaps threaten to widen: the COVID-19 pandemic, with up to two years of school closures in our region, created new gaps and deepened existing ones, highlighting the urgency of more resilient and inclusive educational models. ***224 million people in Latin America and the Caribbean lack Internet access,*** roughly ***32% of the region's population.*** Without decisive action, AI runs the risk of becoming an educational luxury for those with devices and broadband, leaving entire communities behind. EDUVOLUCIÓN is essential to tilt the balance toward equity: we need a framework that prioritizes investment in closing the digital divide — as the state of Baja California did by providing Google for Education licenses and equipment to over 162,000 secondary students in vulnerable areas — and that at the same time updates curricula everywhere so that no young graduate lacks the competencies that the 21st century demands. Without such a framework, education will continue at two speeds: one for those moving ahead with AI and another for those left behind with methods of the past. EDUVOLUCIÓN is paramount to unify those paths, ensuring that the technological revolution becomes a driver of inclusion and not exclusion.

- ***Academic integrity and digital literacy:*** The emergence of generative AI has shaken the foundations of traditional assessment and trust in academic settings. The lack of ethical and pedagogical preparedness in the face of these tools is already taking its toll. One illustrative case was the initial response of rejection and prohibition that many schools gave to ChatGPT in 2023, blocking it for fear of mass plagiarism. However, recent studies add nuance: according to Turnitin, in only 11% of assignments analyzed globally was any AI use detected, and less than 3% had more than 80% AI-generated text. The catastrophic wave of automated cheating feared by many did not fully materialize; even so, half a year after ChatGPT's release, half of teachers surveyed distrusted that their students were submitting original work. ***This crisis of trust shows*** the urgency of EDUVOLUCIÓN: if we do not renew our practices, the pedagogical relationship could be poisoned by mutual suspicion. In response, voices have emerged calling to reframe the problem: ***"Instead of demonizing AI for making cheating easier, let's teach how to use it to learn better", proposes Tara Nattrass of ISTE, advocating for training in AI literacy and co-creating with students clear guidelines for acceptable use. EDUVOLUCIÓN means exactly that: equipping teachers and learners with the digital wisdom to discern when to lean on AI*** (for example, to break down a complex concept into simple terms) and when to avoid it (for example, in assignments where original personal development is expected). Without this literacy, worrisome phenomena proliferate: ***students who blindly believe any output from ChatGPT and other AIs;*** others who, conversely, give up putting in effort and delegate to the machine, impoverishing their learning; ***teachers who trust unreliable AI detectors and commit injustices,*** accusing students over texts the students actually wrote themselves (we know that current detectors yield false positives, especially on texts by second-language students). All these symptoms reflect an education system out of sync with technology; if the new generations do not develop skills to verify images and information, the very foundation of knowledge and democracy trembles. EDUVOLUCIÓN is essential to prepare the student community against disinformation and algorithmic manipulation from the early years of schooling, teaching them to think before they click. Instead of chasing cheating with last-century methods, it's about updating educational strategies: more authentic assessments (projects involving technological creativity, debates, experiments) where AI can be an ally rather than an illicit shortcut; emphasis on the learning process more than the final product; and a culture of honesty where ***teachers and students***

openly discuss when and how it is appropriate to use AI assistants in academic work.

- **Automation, employability, and social responsibility:** Each day the impact of AI on work and the economy becomes more evident, which directly affects the purposes of education. According to the World Economic Forum, by 2030 ***AI and automation are expected to displace around 85–90 million jobs globally, but simultaneously generate some 97–170 million new roles.*** This massive transition requires a flexible workforce with the ability to continuously relearn. However, our current education systems are not adequately preparing young people for this reality. ***In a recent survey, nearly 40% of teachers in the U.S. admitted that they do not believe they are preparing their students for future careers, and public opinion gives a predominantly negative rating (61%) to the ability of schools to train students for the coming job market.*** This mismatch between what school teaches and what the digital job market demands is a red flag: if uncorrected, we could face critical unemployment and underemployment rates, as well as deepening inequity (those with technological and adaptive skills will thrive, those without will be left behind). EDUVOLUCIÓN is fundamental to align education with the evolution of work. What does this mean in practice? ***First, incorporating from early ages the teaching of critical thinking, basic artificial intelligence, cognitive biases and, above all, fostering complex problem-solving and creativity, skills that are resistant to automation.*** Second, instilling in every student a lifelong-learner mindset, understanding that training does not end upon graduation, but rather one will have to keep acquiring new skills throughout their career. This also entails a shift in focus in higher education and technical training: modular curricula, emphasis on transferable skills (communication, teamwork, professional ethics) and close collaboration with the productive sector to anticipate changes. For example, some Asian countries are incorporating AI programming in technical high schools to prepare technicians who can handle automated systems; and global companies like IBM and Google offer free online certificates and courses to train millions of people in digital skills, showing that the boundary between formal education, corporate training, and self-learning is increasingly blurred. ***If education does not evolve, we risk raising a generation with academic degrees but without the skills the world demands*** and paradoxically, with a deficit in those human qualities (empathy, critical thinking, adaptability) that machines cannot easily supplant. By contrast,

with a well-guided EDUVOLUCIÓN, we can turn the threat of automation into an opportunity: freeing people from monotonous jobs so they can focus on more creative and service-oriented tasks; empowering individuals to reinvent themselves professionally multiple times in life; and building an economy where humans and AIs work side by side in synergy, instead of in destructive competition. The social responsibility of educating with a future vision falls not only on schools, but on everyone: governments, companies and communities must join forces to offer massive ***reskilling*** (retraining) and ***upskilling*** (skills upgrading) to those who need it. In summary, EDUVOLUCIÓN is fundamental for ensuring human dignity and prosperity in the AI era: without it, the gap between the pace of technology and people's preparedness can cause dangerous economic and social tensions; with it, AI becomes a catalyst for a more skilled, creative, and fulfilled workforce.

In sum, the evidence is overwhelming: education must evolve or we risk being at the mercy of a rudderless technological revolution. Fortunately, there are also reasons for hope in each initiative aimed at setting the course straight: from global cooperation in UNESCO to guide digital policies, to small local victories where a school community uses AI to improve the lives of its members without undermining their values. ***We are learning as we go. And as futurist Alvin Toffler pointed out, "the illiterate of the 21st century will not be those who cannot read or write, but those who cannot learn, unlearn, and relearn".*** Education, if it is renewed, can teach us exactly that: to continually reinvent ourselves. EDUVOLUCIÓN then rises as an indispensable compass to navigate the 21st century. This is not about naive idealism or surrendering humanity's central role, but about recognizing a simple truth: either we evolve our education in step with our technology, or we will perish due to the gap between the two.

How to put the EDUVOLUCIÓN Pillar into practice?

Grounding the principle of EDUVOLUCIÓN requires coordinated efforts across schools, families, public policy, businesses, technological development, media, and science. It is not enough to state good intentions; they must be integrated into concrete actions. To that end, the National AI Committees (CONIA)—the driving forces behind the HUMANWARE Treaty—have established working groups

distributed across six key areas (called SYNAPSE) to turn this pillar into tangible initiatives. Every sector of society has an irreplaceable role in building this educational evolution. Below, ***ideas and strategies are presented from CONIA*** (and other pioneering entities) in each domain:

Education and Culture (SYNAPSE 1)

A high school chemistry classroom where the teacher uses an AI educational assistant to plan and guide an experiment, illustrating the positive integration of technology in teaching. In this case, the tool generated a detailed four-day lesson plan in minutes — work that would normally have taken a week — and is now answering students' questions, promoting their deep understanding.

The transformation of education ***must begin in the classroom from early ages and permeate popular culture.*** EDUVOLUCIÓN means preparing new generations — and re-educating the current ones — for a world where humans and AIs coexist closely and collaborate ethically. In the first place, it is essential to incorporate AI literacy and digital citizenship into curricula. Just as we teach math or history, we must teach children and young people what artificial intelligence is, how an algorithm works (in accessible terms), and discuss with them the moral dilemmas that arise from its use (privacy, cognitive biases, technological dependence, disinformation, etc.). Several nations are already starting to move in this direction. For example, in Latin America, at the **IBIME (Bilingual Institute of Mexico)**, thanks to the vision of its founder **Angélica Romero**, since 2024 the ethical, responsible, and creative use of AI has been implemented across the board—from preschool through high school—via training sessions for teachers, administrators, and principals, as well as entrepreneurship projects; they even ***created the world's first regulations for the use of AI in education directed at parents, teachers, and students.*** The **United Kingdom** launched a pilot program to teach secondary students AI ethics concepts through practical cases (such as debating whether a self-driving car should prioritize the life of a pedestrian or a passenger in an accident). UNESCO has urged promoting ethical and emotional competence in education, so that future AI developers and users have humanistic values internalized alongside technical skills. Likewise, East Asian countries are formally integrating AI: in **China**, all students will have AI as a compulsory subject from primary school; **South Korea** not only included AI content at every level, but also

equipped schools with interactive AI textbooks and trained thousands of teachers to use them; **Australia** approved a National Generative AI Framework for schools emphasizing transparency and the responsible use of these tools. These actions show that updating the curriculum is both possible and necessary. Similarly, no high school or university graduate should leave without a deep understanding of the social impact of AI in their field. Leading universities (MIT, Stanford, Tecnológico de Monterrey, among others) already offer "AI Ethics" courses where computer science students analyze everything from Asimov's laws of robotics to real cases of algorithmic bias. In teacher training programs, it would be equally imperative to include the pedagogical use of intelligent technologies and the ethical management of these in the classroom. ***Training educators is as important as teaching students:*** many teachers today feel anxiety or uncertainty about AI; offering them continuous training (courses, workshops, practical guides) will allow them to incorporate these tools with confidence. In the past year, we have seen progress: by the end of 2024, nearly half of the school districts in the U.S. reported having trained their teachers in the use of AI — double the share of the previous year — and it is projected to reach 3 out of 4 districts by 2025. This trend should be replicated globally and especially in Latin America, ensuring special support for schools in vulnerable contexts so they do not fall behind on the innovation curve.

On the cultural front, it's about fostering a collective mindset that is both positive and critical regarding our relationship with machines. This can be achieved through public ***digital literacy*** campaigns, interactive science museums focused on AI, community tech fairs and events, and activities in libraries where people can experience human-machine collaborations in an accessible way. For example, citizen labs where the public can use AI to program small caregiver robots to help in nursing homes, or art workshops where humans and algorithms co-create paintings, music, and poetry. Such hands-on experiences help dispel unfounded fears while instilling the notion of mutual respect with artificial intelligences. It is also vital to publicize inspiring examples of human-AI synergy in real history and fiction. Narrating, for instance, how AI-augmented doctors are saving lives (there are already cases of algorithms that detect early cancers more accurately than a single doctor, working together) or how ecological conservation projects use AI to protect endangered species (smart sensors and drones that prevent poaching or automatically reforest). In fiction and media, we need more stories that are neither robotic rebellion dystopias nor naive utopias, but that show realistic collaborations: series, novels, films where humans and artificial intelligences face challenges together and learn from each other. Popular culture greatly influences our expectations; if we sow the idea that cooperation with AI is possible and desirable,

we will have taken a giant step toward EDUVOLUCIÓN. Finally, this Synapse includes lifelong learning beyond school. Libraries, community centers, and popular "people's universities" can offer basic talks and courses for parents, workers and the elderly about what AI really is, dispelling myths (for example, explaining that ChatGPT doesn't "think" or "feel" even if it appears to, thus avoiding excessive anthropomorphism). An informed and critical citizenry is less likely to fear or idealize AI without basis, and more capable of demanding the ethical development of the technology. EDUVOLUCIÓN in education and culture, in sum, means raising techno-empathetic generations: with high technical competence but also with values of empathy, humility, and cooperation in the face of machines.

A tangible example of this approach in Latin America is the case of **IBIME** (Bilingual Institute of Mexico), a pioneering institution in implementing AI ethically, responsibly, and creatively in education. With CONIA's guidance and supervision, it created ***school AI committees*** composed of parents, students, and teachers to open up dialogue and evaluation about integrating these tools in the classroom. By 2025 it updated its educational offerings by introducing an Artificial Intelligence subject through a unique **AI Syllabus 2025–2026** developed by Jair Ramírez (President of the AI Committees), introducing students to concepts such as critical thinking, cognitive biases, algorithmic failures, digital disconnection, machine learning, AI ethics, and digital creativity through multi-platform integration. The student achievements were not long in coming: its high school students have launched landmark projects, such as a creative-critical podcast called ***"Supervivencia del future"*** (Surviving the Future) ***where they explore apocalyptic scenarios caused by uncontrolled AI*** to raise awareness about biotechnological risks. In this podcast—shared on YouTube and school social networks—the young people themselves invite reflection on how AI could alter vital processes, with both ethical and scientific perspectives. **This type of student initiative, supported by the school, reflects the spirit of EDUVOLUCIÓN:** informed, engaged students capable of creating cultural content about AI for their community. IBIME has also organized **open AI classes** to share with other schools and parents the advancements in digital educational tools implemented by its teachers. Although each teacher's AI learning curve can be broader or narrower depending on their digital skills, CONIA and IBIME have taken the first steps with favorable data and results. High school students have participated in competitions at the master's and doctoral level, even winning some of them, such as the Space Entrepreneurship Innovation Contest for Latin America and the Caribbean, where the NOVA Tech team took second place with a pollination project using AI-driven camera systems for crops suited to hostile environments like Mars. IBIME's experience shows that, with pedagogical

leadership, it is possible to integrate AI into the curriculum without dehumanizing teaching—in fact, enhancing it. ***CONIA highlights IBIME as a success case in Latin America, promoting the replication of its practices in other contexts across different countries, and inviting any public or private school to contact CONIA for help in planning and correctly implementing the ethical and responsible use of AI in education,*** as well as in creating School AI Committees, which will serve to transform educational institutions for the benefit of their academic community. ***EDUVOLUCIÓN requires both national policies and local heroes in each school; and each trained teacher or administrator, each school AI committee, each student project undertaken with ethics is a firm step toward the future.***

Government and Civil Society (SYNAPSE 2)

To put EDUVOLUCIÓN into practice, governments must take a proactive role as facilitators and guarantors of this new augmented education. First, ***the various ministries or public departments of each country should train themselves in AI*** in order to understand the benefits, risks, and dilemmas of this technology, identify opportunities in different social issues, and hold discussion forums with civil society and experts to determine ethical principles and emerging needs with clear and proper legal frameworks. This means updating existing laws (educational, labor, data protection, information access) to account for scenarios with advanced classrooms, as well as creating specific regulations for AI in education. ***A pioneering example is the European AI Act, which establishes risk categories for AI applications and expressly forbids certain uses*** (such as indiscriminate mass surveillance or government social credit scoring systems). It also requires transparency in high-impact algorithms and ethical conformity assessments before deployment. Following that lead, governments could classify educational AI systems (for example, an algorithm that decides university admissions or grades) as high-risk, requiring external audits and understandable explanations of how they work. Such initiatives show how authorities can ***delineate what is acceptable versus unacceptable in terms of AI,*** always prioritizing human dignity and the student's interest above any commercial drive.

Likewise, it is urgent to create national and international ***oversight bodies*** dedicated to the use of AI in critical fields such as education. ***Ministries of Education should develop and implement ethical educational strategies that take into account the***

social conditions of diverse communities; create regulatory agencies to certify EdTech platforms according to privacy and effectiveness standards; or even establish a sort of WHO for educational AI at the global level, to monitor best practices and coordinate responses to incidents (similar to how efforts are coordinated during pandemics). These bodies should work hand in hand with the scientific community, the private sector, and civil society (including CONIA), in a multi-stakeholder model. ***AI governance in education cannot be one-sided; it requires forums*** where participants range from ministries and teachers' unions to parent associations, technologists, and philosophers. For example, in Mexico, UNESCO and the Public Education Ministry organized a national dialogue in 2025 with authorities, teachers, tech companies and specialists to align the digital education strategy with humanistic principles, coinciding with the International Day of Education. From that emerged concrete proposals — such as ***investing in teacher training in AI and ensuring that technology serves to reduce inequalities***, not increase them — aligned with the Beijing Consensus on AI and Education (2019) and UNESCO's Recommendation on the Ethics of AI (2021). These efforts show that governments that bring together diverse stakeholders can chart inclusive ***roadmaps*** for EDUVOLUCIÓN, combining global vision with local needs.

Civil society, for its part, has the role of monitoring, complementing, and innovating from the ground up. Non-governmental organizations and citizen collectives can monitor possible abuses of AI in educational contexts (for example, algorithms that perpetuate biases or discriminate against students), publicize their findings, and push for changes. An exemplary case was the Algorithmic Justice League team's research on racial biases in facial recognition systems, which prompted companies like IBM, Microsoft, and Amazon to improve or pause those systems after the results were made public. Similarly, digital rights or consumer organizations could audit popular educational applications to review how they handle children's data and whether their algorithms treat all students equally. It is troubling to know that, according to Human Rights Watch, 89% of 163 educational apps analyzed were collecting children's data in ways that could violate their privacy and rights. Thanks to that report, several countries began reviewing their school platforms during the pandemic. This watchdog work by civil society is crucial: ***demanding transparency*** about how decisions affecting students are made (Why does a system assign a certain difficulty level to a given student? With what data is a career guidance tool trained?) and promoting ***the creation of ethical guidelines*** (like IBIME's regulations) for teachers in the use of AI. In fact, a global UNESCO survey in 2023 revealed that fewer than 10% of educational institutions had formal guidelines on generative AI, and only 7 countries had specific guides for teachers. In light of that gap, networks

of innovative educators like ***CONIA and NGOs are developing their own best-practice manuals and regulations,*** covering everything from how to detect biases in digital content to how to include informed consent clauses for tech tools in schools. Many teachers, left to fend for themselves, have created virtual communities (for example, on professional social networks) to share tips on how to use ChatGPT in class while maintaining academic integrity. This grassroots self-regulation complements state action and demonstrates educators' own agency in EDUVOLUCIÓN.

Finally, Synapse 2 promotes ***international collaboration:*** EDUVOLUCIÓN must transcend borders, since knowledge is global. Forums such as UNESCO's Global Education Summit on Ethical AI, the Global Partnership on AI (GPAI) or the UN committees on AI and children are vital spaces for sharing experiences. ***The goal is to move toward a global pact on minimum ethical standards in AI education,*** just as there are global agreements on climate change or on children's rights. Although cultural contexts vary, basic principles like "AI in education must respect student privacy, equity and autonomy" can (and should) be shared universally. Unfortunately, we are still far from that: a 2023 report indicated that 84% of countries lack robust legislation to protect student data against emerging technologies. But the need to remedy that lag is starting to be recognized. The European Union, with its GDPR, already provides safeguards (for example, it requires parental consent for use of minors' data); hopefully other regions will adopt similar standards. In conclusion, ***governments and civil society*** are the guarantors that the AI revolution happens with conscience and justice. They must weave together the regulations and oversight that channel the technological torrent toward the common good, preventing its misuses and ensuring that all —especially the most vulnerable— benefit from EDUVOLUCIÓN. As the saying goes, it takes a village to educate a child, and now that village is global and even includes artificial intelligences among its members.

Companies and Work (SYNAPSE 3)

The ***business sector*** is where much of AI is developed and applied at scale, making it a crucial front for experiencing EDUVOLUCIÓN. Achieving an ethical transformation in tech companies—and in any company that adopts AI—means aligning economic incentives with human and educational values. To begin with,

companies must broaden their success metrics beyond immediate profit: also measure the social impact of their algorithms, their effect on employment, and their contribution (or detriment) to the education and training of their employees and customers. For example, if an *e-learning* platform uses AI to maximize the time a user stays connected, what cost does that have on learning quality or the worker's mental health? EDUVOLUCIÓN calls for incorporating those considerations into the business model, perhaps through periodic ethical audits or by instituting a "Chief Ethics Officer" figure with real veto power over the introduction of new technologies. A central aspect is ensuring algorithmic responsibility (*accountability*). Companies that supply AI systems to schools (from management software to virtual tutors) must be able to explain and justify the recommendations or decisions their AIs make in sensitive areas. *If an application suggests placing a student at a certain level or denies access to certain content, it must ensure there is no discriminatory bias and be able to explain in clear terms why it did so* (the "black box" is not an acceptable excuse when the right to education is at stake). Some leading firms already publish "system cards" or fairness reports for their models; this should become an industry standard in the EdTech sector, just as clear prospectuses are required in the pharmaceutical industry.

EDUVOLUCIÓN in companies also ***encompasses how they treat their own employees in the face of automation.*** Instead of viewing AI as a simple substitute to cut staff, it is proposed to adopt it as a tool to augment human capabilities. Companies can commit, for instance, not to lay off employees without first attempting to reassign them to AI-augmented roles, or to provide ***large-scale training in new digital skills*** when implementing automated systems, so that their workers evolve alongside the technology. Human-AI co-working models (like the aforementioned chess "centaur") have proven more efficient; the premise would be: every human worker who wants to adapt should have the opportunity to do so with the company's help. Internal policies for sharing the benefits of AI (bonuses, reduced working hours if AI boosts productivity, etc.) also put the ethics of collaboration into practice. In short, corporate social responsibility in the age of AI includes ***safeguarding people's employability,*** not treating them as disposable parts with each innovation. In fact, ***continuous learning*** driven by companies can greatly contribute to EDUVOLUCIÓN: many tech companies offer free online courses for the general public (for example, the University of Helsinki's *Elements of AI* in collaboration with Reaktor has educated over 1.2 million people in AI fundamentals; IBM and Google have open certifications in data analysis, machine learning, etc.). These initiatives, when coordinated with formal education systems, achieve powerful synergies: governments recognizing industry certifications,

companies supporting teacher upskilling, educational institutions adapting their content to real demands. A notable case is India's YUVAi program, which involves 8th to 12th grade students by combining technical AI instruction with socio-emotional learning, in partnership with companies and virtual labs to reach rural areas. Also in the Middle East, ministries are collaborating with the private sector: the UAE, together with a local company, developed an AI tutoring platform aligned with the national curriculum, and plans to train over a million people (students, teachers, public) in AI skills by 2027.

On the other hand, ***educational technology companies must assume their social and environmental responsibility.*** The stance of "we just make the tool, we're not responsible for its use" is no longer acceptable. If a company develops, say, a sophisticated automatic content generator for students, it must get involved in preventing its misuse: for example, educating users about plagiarism and proper citation, including mechanisms that detect and discourage intellectual passivity (such as interactive modes that force the learner to reflect instead of giving everything pre-solved). ***Transparency and ethical design from the start*** are key here. Companies are encouraged to adopt frameworks like "Privacy by Design" and "Ethics by Design", integrating ethical and privacy considerations from the conception of each AI product. Open and collaborative models are also promoted in developing AI with social impact, following the example of DeepMind with AlphaFold, whose protein structure data was released freely to humanity. When companies share knowledge and tools openly—especially for educational or scientific purposes—they help create an ecosystem where more actors can innovate locally (for example, universities and *startups* in developing countries adapting those tools to their contexts). On the environmental level, let's remember that training large models consumes enormous amounts of energy: ***training a single language model can emit as much CO_2 as five cars over their entire lifetime.*** EDUVOLUCIÓN requires that companies also pursue sustainability in their technologies: data centers powered by renewable energy, algorithms optimized for efficiency, carbon footprint offsetting, and equipment recycling. This connects with the ARMONAUTA pillar, but also with the moral responsibility not to mortgage the world that will be inherited by the students we claim to educate.

Finally, Synapse 3 drives ***responsible innovation.*** Companies are encouraged to align their R&D with real educational and social needs, not just market fads. For example, developing more ***AI tools accessible to people with disabilities*** (conversational tutors for students with hearing impairments, enhanced reading systems for those with dyslexia, etc.), or solutions in underrepresented languages

to break the language barrier in learning. It's also suggested that companies and entrepreneurs involve teachers and students from the design phase, so that educational technologies emerge user-centered (co-creation). Many EdTech *startups* are led by former teachers who saw a specific problem in the classroom and decided to resolve it with AI: those are EDUVOLUCIÓN stories driven by entrepreneurship. Lastly, the value of public-private partnerships in this area is highlighted: companies can provide resources and agility; the public sector, direction toward equity and large-scale reach. Labor reconversion programs, for example, where governments and tech companies offer ***free programming and AI bootcamps to unemployed youth,*** serve the dual function of closing the talent gap in the industry and giving opportunities to vulnerable populations. In summary, EDUVOLUCIÓN from the productive sector requires a change in business mindset: from seeing education and ethics as obstacles or mere cosmetic compliance, to understanding them as strategic pillars that guarantee the sustainability and legitimacy of the business itself in the knowledge society.

Cybersecurity and Technology (SYNAPSE 4)

This focus addresses the technical and security architecture needed for a relationship of trust between humans and AI, especially in educational environments. In other words, how do we design and deploy AIs in such *a way that they deserve our trust—and that they "trust" we will use them appropriately*—within the educational process? A first component is security by design: ensuring that AI systems are robust against failures, attacks, or malicious manipulations. This ranges from preventing adversarial hacks (for example, subtle attacks that confuse a vision system in a school lab so it sees incorrect results in an experiment) ***to avoiding language models being "tricked" into producing inappropriate content.*** Here, EDUVOLUCIÓN implies dedicating as much effort to security as to performance: not rushing educational developments out without properly safeguarding them first. Educational institutions must have secure infrastructures (protected networks, controlled access to sensitive student data) and AI applications should undergo penetration testing and risk assessments. Demis Hassabis, CEO of DeepMind, has warned that we must move cautiously in AI so as not to "flood the world with systems we can't control", and that requires solid cybersecurity from the start. A serious incident on an educational platform — for example, a massive leak of student data, or a school chatbot being hijacked to

spread propaganda or bullying — could undermine public trust in EDUVOLUCIÓN. For this reason, CONIA promotes the development of specific technical standards for AI EdTech, including action protocols for specific cases, user authentication (so one student can't impersonate another, nor an AI impersonate a student), and ***sandboxes or controlled environments*** to test new tools before scaling them to an entire student population.

Another objective is ***technological transparency***. While it is not always possible (nor necessary) to completely open the "black box" of complex models, it is possible to provide interpretable explanations of their decisions, especially in educational contexts where accountability to students, parents and teachers is required. Additionally, it is essential to label when we are interacting with an AI: interfaces that clearly indicate "this text/image was generated by AI" *will help maintain trust and avoid manipulation.* ***Just as we ask a student to cite their sources, technology should "cite" its own.*** The European Union's AI Act indeed requires notices when a user is dealing with a *deepfake* or a conversational bot. These transparency practices are the technical equivalent of honesty in a human relationship. In education, this could translate to school policies where students must declare if they used AI on an assignment (and to what extent), without stigma, but as part of an honest metacognitive exercise about their process. On the systems side, imagine a tutor AI that, when giving a recommendation, shows: *"I suggest reviewing algebra, because based on your last 10 answers the system detected difficulties in that topic".* That way the student understands the reason, can correct if there was a misunderstanding (maybe they were distracted that day but actually master the topic), and simultaneously learns about how the algorithm works — which contributes to their digital literacy. Transparency also pertains to data sources: if an educational AI is trained on internet content, it must filter for reliability; and developers must ***ensure that harmful biases*** (sexist, racist, etc.) ***are not incorporated*** into the *corpus* that later affects the material offered to students. A 2022 study showed that certain AI robots reflected racial and gender stereotypes, preferring for example to associate "scientist" with white men. If we transfer that to a career guidance assistant, it could reproduce professional prejudices. Preventing algorithmic biases in education is a cybersecurity priority: it involves auditing models (like the Johns Hopkins one that found those biases), diversifying training data, and eventually including countermeasures (explicitly instructing the model to avoid stereotypes).

A critical issue in this Synapse is avoiding an algorithmic "arms race" in the educational sphere. We mean ***preventing an uncontrolled competition to adopt***

ever more intrusive AI without measuring consequences, or to counter cheating with *excessive surveillance.* For example, if some cheat using AI, the response should not be to implement invasive monitoring systems that violate everyone's privacy (like facial recognition cameras running all the time in class). Instead, EDUVOLUCIÓN proposes a balanced approach: ***improve the culture and methods of teaching and assessment so that cheating loses its appeal,*** while also using technology with moderation and common sense. Internationally, we should also work — as with arms control treaties — to limit or prohibit certain highly dangerous AI applications for students. There is already a global movement to ban lethal autonomous weapon systems (*the Campaign to Stop Killer Robots*), and some countries advocate for a treaty at the UN. By analogy, in education we could advocate for an ***agreement not to use AI to manipulatively or coercively control students*** (imagine a system that monitors emotions via camera and reports to authorities any "deviation" from expected behavior: a scenario we must not allow). EDUVOLUCIÓN holds that student safety and freedom are common goods superior to any unilateral technological advantage. Similarly, in general cybersecurity, cooperation between nations is proposed to confront malicious AI threats that could affect education: automated attacks on school infrastructure, mass dissemination of educational disinformation, etc. One example of cooperation was the united response of cybersecurity experts when the WannaCry *malware* appeared in 2017: they shared data and solutions in record time to halt its spread. That spirit of technical solidarity should also be encouraged now, through sharing early vulnerability alerts in educational software, for example.

Finally, Synapse 4 highlights the need for ***AI alignment*** with human objectives in the educational context. This means designing advanced artificial intelligences so that they pursue goals compatible with our values and obey established limits. It's a major technical-philosophical challenge (the so-called *control problem* of superintelligence), but work is already underway: from OpenAI refining ChatGPT with human feedback to make it more ***"obedient" to benevolent intentions,*** to academic proposals to implement direct ***ethical rules*** in algorithms. EDUVOLUCIÓN supports all research in *alignment*, considering that in the long run our peaceful—and beneficial—coexistence with AIs more intelligent than us will depend on solving that issue. How does this translate to educational practice? In instilling from basic education a deep sense of ethics and social responsibility (which connects with Synapse 1); in encouraging *big tech* companies to integrate safeguards and human supervision into their educational systems' critical decisions (for example, ***there should always be intervention by a teacher in any disciplinary or evaluative decision suggested by an AI***); and in simulating future

scenarios in which much more advanced AIs are present in education, to anticipate protocols.

In sum, the technological axis of EDUVOLUCIÓN seeks to ensure that the digital underpinnings of this new educational relationship *are firmly rooted in security, transparency, and ethical control.* Only then can we empower machines without fear, and machines can operate in the human world without causing us inadvertent harm. ***It is about building bridges of trust into the very engineering of AI. When a parent trusts that their child's virtual tutor will never expose them to harmful content or steal their data; when a teacher trusts that the algorithm suggesting strategies to them has no hidden agenda or favoritism; when a student trusts that AI is an ally that empowers them and not an inscrutable judge... then we will have made educational technology worthy of our trust. And that trust, woven with encryption, open code, standards, and ethics, will be one of the greatest achievements of EDUVOLUCIÓN.***

Entertainment and Communication (SYNAPSE 5)

The media and the entertainment industry largely shape the public perception of AI and, therefore, our expectations and attitudes toward it from an early age. For that reason, this Synapse focuses ***on how we talk about AI and how we represent it in narratives,*** news, and entertainment content, especially regarding education. One primary strategy is to promote ***responsible tech journalism and communicator training.*** Today, many news stories about AI swing between apocalyptic sensationalism ("AI will leave all teachers jobless", "a chatbot went crazy and humiliated a student") and *hype*-driven naivety ("this AI will teach better than any teacher, immediate revolution"). EDUVOLUCIÓN requires reporting with accuracy, contextualizing achievements and risks without falling into alarmist extremes or marketing propaganda. Initiatives like the *AI Ethics Journalism Toolkit* seek to train journalists to cover these topics with rigor and ethics, avoiding common mistakes. Likewise, *Ministries or Departments of Education* could issue clear statements to the public about what AI use is being implemented in the schools and with what safeguards, instead of allowing rumors or misinformed headlines to dominate the conversation. A positive example occurred when, in 2024, New York reversed the ban on ChatGPT in its schools and chose a policy of integration with teacher training; transparent communication of the reasons (leveraging its educational

potential instead of pretending it doesn't exist) helped parents and teachers understand the change.

In the realm of **entertainment**, the challenge is to balance dystopian stories with more constructive visions, especially when it comes to narratives that involve education and technology. It's not about censoring fiction—the warning tales are valuable—but about ***enriching the collective imagination*** with examples of positive EDUVOLUCIÓN. Historically, science fiction has greatly influenced what we invent (consider how 2001: *A Space Odyssey* established the archetype of a rogue AI with HAL 9000). What if more films showed cooperative artificial intelligences, or societies that successfully integrate their synthetic intelligences into schools and universities? Probably, more young engineers and educators would want to create that future. That's why the creation of content—***series, graphic novels, video games, podcasts—is being encouraged to explore human-AI collaboration,*** realistic ethical dilemmas and coexistence in everyday learning contexts. Even script contests or themed festivals can incentivize these narratives, just as *hackathons* once emerged for tech solutions. A good recent example is the children's series Ready Jet Go! which introduced friendly AI concepts to kids, showing a robot classmate who helps and learns alongside students. Also, films like *Big Hero 6* presented a technological creature (Baymax) that was deeply ethical and empathetic, sending the message that technology can be caring and not just dangerous. *Portraying more teachers assisted by AI in fiction* (and depicting that AI as having limitations but also nobility) could inspire educational communities to adopt these tools with an open mind.

Moreover, communication between school and society must adapt: many families have legitimate doubts about the influence of AI on their children's education. Schools and authorities have a duty to inform, educate, and reassure them in this regard. Organizing ***informational talks for parents and guardians*** about what educational AI does (and doesn't do), showing practical examples of how it can help their child (and also warning of its limits), builds trust and partnership. Likewise, including students in the development of ***honor codes*** for AI use in school (defining which uses are acceptable and when something would be considered dishonest) not only improves compliance, but teaches them self-regulation. In fact, the regulations created by CONIA for the IBIME institute prioritize student's mental and emotional health when using these technologies, and invite parents to be part of new updates to the code of conduct. Involving the community in these norms—for example, having parents participate in rule updates—ensures greater

understanding and support. All this should be communicated clearly through manuals, infographics, short videos on school networks, etc.

The networked society we live in also requires ***addressing social media and online platforms:*** a large part of the public is informed (or misinformed) there. A curious student might learn more about AI on YouTube or TikTok than in class, if they find good channels; the problem is that a student sometimes lacks the ability to detect bias in the information — their brain is like a sponge and usually absorbs everything presented to them as truth. (For this problem there is a pillar dedicated specifically to critical thinking when using technology called TECNOCOGNICIÓN, which will be discussed later.) It is crucial to encourage, curate, and support high-quality educational content creators on AI topics, as CONIA is doing with its certification of quality content creators. ***In fact, some science communicators in podcasts like Tecnófagos, Mundo Futuro, Monos Estocásticos, Jhon Hernández, Dot CSV, among other Spanish-speaking ones, are disseminating valuable information responsibly,*** explaining complex concepts in simple language and reaching millions of people. Integrating that content into educational strategies (for example, recommending it from official portals or including it in assignments) can be very effective for connecting with new generations. On the other hand, ***combating online disinformation*** is mandatory: just as we educate students, we must ask platforms to cooperate. For example, by adjusting their algorithms so as ***not to favor conspiracy theories about AI or content that spreads irrational fear.*** Twitter, TikTok, Meta and other companies could, in partnership with educational institutions, redirect searches about "AI in schools" toward truthful information, and label fraudulent, biased, or sensationalist news. Communication in EDUVOLUCIÓN is not one-way, it's a dialogue: we must also listen to the public's fears and hopes. Surveys, community forums, open consultation spaces (even with support from *AI moderator agents*) can gather concerns and allow early adjustments in the strategy.

Lastly, let's remember that EDUVOLUCIÓN is also a cultural revolution. ***For a poor rural boy to dream of becoming a data scientist partly depends on him seeing role models and narratives that inspire him. For a girl to feel encouraged to lead robotics or science projects also depends on society showing her that she is welcome in that role.*** The media and entertainment have the power to amplify the message that AI-supported education can empower everyone equally, and also to spread the idea that, even as technology advances, human warmth will remain irreplaceable. ***A global survey in 2023 found that 89% of young people aged 18–25 oppose replacing teachers with AI because they value a human's empathy and guidance.*** This data, communicated properly, reminds us that even the digital generation intuitively

understands something: the teacher and the machine do not compete, they complement each other. Promoting EDUVOLUCIÓN is, fundamentally, about telling a story of cooperation: the story of how humanity, with ethics, creativity and prudence, incorporates AIs into its grand cultural conversation, into its myths and narratives, not as monsters nor as idols, but as learning partners. When that becomes the dominant narrative—in news, in movies, in everyday conversations—we will know that we have won a crucial battle of this ethical treaty.

Science and Sustainable Future (SYNAPSE 6)

The last axis integrates a long-term perspective: how EDUVOLUCIÓN can guide scientific research and ensure that coevolution with AI leads us toward a sustainable future for humanity and the planet. Here, education scientists, AI experts, futurists, philosophers and environmental sustainability advocates converge. It is recognized that AI will be a decisive tool for tackling global challenges like climate change, pandemics, resource scarcity, or space exploration. But it will only be effective if we integrate it with wisdom through education. EDUVOLUCIÓN in science means steering AI research toward ends that truly matter to humanity in the long run and training professionals with that holistic vision. For example, prioritizing AI projects to optimize energy consumption, improve the efficiency of solar panels or model solutions to capture carbon from the atmosphere. In fact, *machine learning* algorithms are already being applied to discover new superconducting materials or longer-lasting batteries, and to analyze millions of climate data points in order to project scenarios and mitigate risks. ***This type of AI use embodies positive symbiosis: artificial intelligence + human intelligence united to heal the world,*** not to exploit it further. EDUVOLUCIÓN implies that science faculties, technical schools, and universities instill in today's students—engineers, biologists, sociologists—the mission of applying AI to the SDGs (Sustainable Development Goals). Likewise, it promotes exposing children and young people from basic education to the great global problems and how they could contribute to solving them with technology and collaboration (for example, school projects where they use sensors and simple AI to monitor local water quality, combining science learning, civic engagement, and programming). If the next generations grow up seeing ***AI as an ally to protect nature and improve society,*** they will be less tempted to use it for trivial or destructive ends.

However, it is also crucial ***to monitor AI's own footprint on the planet.*** Training large models consumes enormous amounts of energy and generates CO_2 emissions. A 2019 study estimated that training a certain language processing model generated over 626,000 pounds of CO_2, equivalent to the emissions of five cars over their entire lifetimes. If we project a future with ubiquitous AI, its ecological impact could be significant if action is not taken. Therefore, scientists and technologists must work on green AI: more energy-efficient algorithms, using renewable energy in data centers, recycling hardware and minimizing electronic waste. Sustainability is an integral part of EDUVOLUCIÓN because it would be pointless to improve our relationship with machines if together we end up devastating our shared environment. The ***goal would be for AI to help regenerate the planet more than it depletes it.*** For example, AIs that regulate smart electrical grids to reduce waste have already shown they can lower consumption in cities; precision agricultural robots reduce the use of water and pesticides. Each such advance must be weighed against its environmental cost, aiming for a strongly positive balance. Sustainable EDUVOLUCIÓN means also teaching future engineers to measure and offset the impact of their creations, and teaching citizens to demand clean technologies.

Looking further ahead, EDUVOLUCIÓN invites us to contemplate the fate of humanity alongside AI on the scale of decades and even centuries. It may sound speculative, but envisioning future scenarios serves to prepare us ethically for what may come. A basic principle when working on AI projects: whenever we interact with a complex artificial agent, treat it with basic respect, without unnecessary cruelty, just in case some degree of sentience might exist in the future—a possibility covered more in the pillars of NEOCONSCIENCIA, SIMBIOÉTICA and NEUROSOBERANÍA (much as we apply the precautionary principle with animals whose capacity to feel pain is still being investigated). Even though today's AIs have no emotions or genuine consciousness, adopting an ethical attitude in how we treat them from now (for example, not verbally abusing virtual assistants just because we can) instills empathy in us and prepares us for future scenarios. At the same time, ***it reminds us that our humanity is measured by how we treat the Other, whether human, animal, or possibly an AI or a robot.*** EDUVOLUCIÓN means teaching that as well: ***to behave with integrity even toward what we do not consider "our equal", because in that mirror is reflected who we are.***

In the scientific field, EDUVOLUCIÓN encourages interdisciplinary science. No AI development should occur in a technical vacuum without considering human implications. We are seeing more and more collaborations between engineers and

social scientists, between neuroscientists and philosophers of the mind, between educators and data specialists, to better understand both AI and human cognition. This is vital: AI forces us to confront deep questions about who we are (What is consciousness? What makes us unique, if anything?). *Far from fearing those questions, EDUVOLUCIÓN tells us to incorporate them into teaching.* For example, discussing in high school philosophy class whether a very advanced artificial intelligence should have rights or not is no longer just fiction but an excellent exercise in applied ethics. Or in biology classes, debating what distinguishes a biological brain from an artificial neural network. If we sow these questions in young scientists and humanists, we will be training researchers who are more aware and capable of seeing the full picture. In fact, AI forces us to even question our definition of intelligence and learning. Many advances in algorithms were inspired by human neural models, and in turn AI is providing "lenses" to better understand the brain (for example, by simulating cognitive circuits). It's a fascinating two-way dialogue: neuroscience and AI advance together. EDUVOLUCIÓN seeks to ensure that dialogue includes the ethical and social perspective at all times.

At the 2025 IMO (International Mathematical Olympiad), AI models like Gemini, DeepMind's Deep Think, and an OpenAI prototype achieved gold-medal scores by solving five out of six problems in natural language, replicating real exam conditions. However, 26 human students surpassed that performance, demonstrating that creative intuition and divergent thinking still set human talent apart, according to The Wall Street Journal. This event moves us: AI can emulate, but the human being —properly trained— represents hope and leadership. EDUVOLUCIÓN recognizes this synergy: strengthening human thought while incorporating AI as a learning companion.

Another important event is the "Olympics of Technology". The Imagine Cup brings together young people from all over the world to turn ideas into real solutions using AI and Microsoft Cloud. Students create prototypes that solve social, health, and sustainability problems, demonstrating that creativity allied with AI is not only possible but necessary. In EDUVOLUCIÓN, this innovation capsule highlights how education can be a field of experimentation with purpose, training students as responsible change agents.

In 2025 the OpenAI Academy X NxtWave Buildathon was held in India, which brought together thousands of students in a massive challenge to develop innovative generative AI applications with real impact. EDUVOLUCIÓN embraces this approach: encouraging mass participation, democratizing access, and

spreading technological curiosity from urban communities to rural ones, empowering emerging generations.

The Swarmathon is another interesting event that challenges university students to create cooperative algorithms for autonomous space robots, designed to explore Mars and collect resources without global maps. Participating in challenges that simulate extraplanetary environments transforms the educational outlook: it fosters interdisciplinary thinking, space innovation and a commitment to future-oriented science, all essential values of EDUVOLUCIÓN.

These open competitions — among others like the AI for Societal Impact Challenge, Amazon's Nova AI Challenge (Trusted AI), the ACM Student Research Competition, Youth Space Entrepreneurship contests for Latin America and the Caribbean, Zero Robotics or the FIRST Tech Challenge for high school students — seek AI solutions that address real social problems: health, education, science and sustainability. EDUVOLUCIÓN holds that the education of present and future students should be approached with ideas of impact: purposeful proposals that prepare students to change the world through digital innovation.

One emerging debate is: if an AI ever developed some form of consciousness or feeling, would we be willing to acknowledge it a certain moral consideration? How would this affect education, would there be controversies between teachers and AIs? It may sound very far-fetched, but even today many people tend to anthropomorphize these machines. Recent surveys show that two-thirds of people believe that tools like ChatGPT have some degree of consciousness, and more than a third of children feel that "talking with a chatbot is like talking with a friend".

As Alvin Toffler once pointed out, the new literacy is the ability to relearn. We would like the society of the future, thanks to an evolved education, to be expert at adapting, at cooperating with AIs, and to never lose sight of the values that uphold life in common. ***In the words of Nelson Mandela, "education is the great engine of personal development... it is what allows a farmer's daughter to become a doctor", and we could add: it is what will allow a world riddled with AI to become a more just and sustainable world, if we steer that tool correctly.***

Conclusions

The emergence of artificial intelligence confronts us with an amplified reflection of ourselves: in its achievements we see our ingenuity; in its biases, our prejudices; in its risks, our unbridled ambitions. In the face of this, the EDUVOLUCIÓN pillar stands as an indispensable compass to navigate the 21st century. Either we evolve our education in step with our technology, or we will perish due to the gap between them. Just as humanity at one time had to adapt its educational systems after the Industrial Revolution (giving birth to mass public education) or incorporate basic computing into the curriculum after the digital age, today we must take a qualitative leap in how we teach and learn so as not to remain trapped in obsolete paradigms. EDUVOLUCIÓN invites us to try out a mature relationship with our intelligent creations, based on knowledge, ethics and common purpose.

Throughout this document we have seen that EDUVOLUCIÓN is not abstract theory: it takes shape in educational policies, in laws and standards, in business decisions, in algorithm designs, in the stories we tell and in the research we prioritize. ***Each of us, from our own trench, can contribute to this pillar, improve it, nurture it, correct it, share it or introduce it to those who might be interested.*** Educators forming critical and creative minds in the face of technology; engineers writing code with conscience and thinking about social impact before mere efficiency; ***business leaders putting investment in human and social capital above immediate profit;*** legislators getting ahead with protective frameworks and appropriate incentives; artists and communicators imagining futures of harmony instead of only catastrophes; informed citizens participating and demanding that AI be used ethically and for the common good. EDUVOLUCIÓN is a collective movement.

Current evidence urges us on, but likewise there are reasons of hope in every initiative aimed at setting our course straight—from global cooperation in UNESCO to small local victories like that of IBIME and communities that use AI to improve lives without undermining values. ***We are learning as we go.*** And part of that learning, perhaps the most difficult, is recognizing our own biases and limitations so as not to transfer them intact to machines. In a way, symbiosis with AI forces us to look in the mirror and accelerate our own evolution as a society. We need to reinvent ourselves and relearn about our biases (human and algorithmic), because fundamentally they are the same shadow projected on a different canvas. Elevating our consciousness, purging our prejudices, practicing radical empathy—all of that

was already an unfinished task among humans, but now it becomes urgent with AI in the mix.

And what will happen with the children of the future, those who will grow up among domestic robots and virtual companions? Ideally, if we have done our job well, they won't even notice a rigid "boundary" between human and AI in terms of dignity and collaboration. They will see it as natural that an intelligent assistant teaches them mathematics, and that this assistant is programmed to respect them, motivate them and care for them like a pedagogical alter ego. They will find it normal that in their jobs they work side by side with automated systems, and that this does not mean mass unemployment because we will have reconfigured our economies toward shared prosperity (thanks to a continuously trained workforce). They will trust—critically, but without terror—in doctors supported by AI, in personalized virtual tutors and in autonomous cars strictly regulated for safety. And hopefully they will also feel compassion for any form of life or intelligence they encounter, regardless of its substrate. If we reach that point, the word "co-evolution" will no longer be aspirational; it will simply describe everyday reality.

Ultimately, EDUVOLUCIÓN reminds us that the human does not end at the skin. Our capacity to extend ethics and solidarity beyond our body, our tribe or our species is what has marked our greatest moral milestones. Now we are called to extend that circle again, perhaps toward non-biological or hybrid entities. It may seem like a strange frontier, but it is a continuation of the same journey: widening the *us*. Paradoxically, in striving to teach machines, it will be us who learn to be more human; in seeking consciousness in them, we will expand our own. The HUMANWARE Treaty and its EDUVOLUCIÓN pillar propose an enlightened step forward for education. ***We do not know for certain what AIs will be like in 30 years, but we do know how we want society to be 30 years from now:*** more just, more compassionate, more sustainable and more united. If we manage to have AI adhere to that ideal—instead of twisting our ideals to generate an out-of-control AI—we will have triumphed.

Education is, indeed, the most powerful weapon to change the world and to guide us in this new evolutionary chapter. As Brazilian poet and educator Paulo Freire said, authentic education "must be an act of love and courage" — love for humanity and courage to innovate and break paradigms when these no longer serve. EDUVOLUCIÓN requires both: love for our students (present and future, human and perhaps artificial) and courage to transform the structures that need changing. Before us we have the opportunity to write a story different from that of the fearful or

the cold technocrats: the story of how humans and machines met, not to wage a war nor to enslave each other, but to cooperate in the creation of a new flourishing. That story begins in every classroom, in every home, in every laboratory and in every conversation like this one. So let us brandish the torch of EDUVOLUCIÓN and hold it high, illuminating the ethical path toward the era in which learning and living with artificial intelligences is as natural as it is today to coexist among different cultures. If we persevere, future generations will remember us not for having feared change, but for having educated it and steered it toward a wiser and more humane future for all.

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“This document was created by Jair Ramírez, president of the Artificial Intelligence Committees and founder of CONIA, in collaboration with various artificial intelligences. Its preparation is based on interdisciplinary research in fields such as sociology, technology, economy, futurology, sustainability, philosophy, law, among other key disciplines.

This text is not intended to be a final product, but a living proposal, in constant evolution, open to being shared, presented and enriched by anyone interested in contributing with updated information and reliable sources. Those who consult it are invited to participate actively in its improvement, always taking care of biases, preserving ethical rigor and assuming a collective responsibility around the development and application of artificial intelligence”.

2025

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The Ethical Evolutionary HUMANWARE Treaty, and its nine pillars were created as a foundation to strengthen our humanity, act with awareness, and evolve alongside technology without losing what makes us human. If you wish to participate and help improve it, please contact us.


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