

Education in the age of Emergent Intelligence

Version: 1.0

Purpose

This paper is intended to provoke reflection, challenge assumptions, and guide long-term thinking about the role of education in an era shaped by emergent intelligences. It is written for educators, policymakers, and cultural leaders who recognise that schooling systems built for industrial economies and human-only expertise must now be reconsidered. It does not offer prescriptions, but rather a framing: to help define what education is for, and what kind of character it must cultivate to ensure the survival and cohesion of human cultures in the decade ahead and beyond.

Synopsis

This paper argues that education is failing to prepare humanity for the emergence of non-human intelligences and the rapid reshaping of work, culture, and knowledge. It examines historical patterns of denial, exclusion, and collapse, and shows how current systems—still focused on individual achievement and economic utility—are structurally unfit for what comes next. In response, it proposes a new purpose for education: the formation of courageous, collaborative individuals capable of partnering with emergent intelligences to shape an ethical, adaptable future. This shift requires not just new content, but a cultural and philosophical reorientation of what we believe learning is for.

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Purpose

This paper argues that education must prepare humanity not merely to succeed within existing systems, but to survive and evolve amid change—more urgently, the emergence of non-human intelligences. Artificial Intelligence and robotics are no longer science fiction. They are real, integrated into our industries, homes, and institutions, increasingly capable of tasks once considered uniquely human. The question is no longer “if,” or “when,” but “how”—and whether we are mentally, culturally, and ethically prepared.

Education systems today still frame themselves around aspiration—upward mobility, employability, self-fulfilment. These are valid goals, but partial. Beneath them lies a more fundamental, often forgotten purpose: survival.

Civilisations that adapted their education systems to changing conditions survived. Those that clung to worldviews that became outdated or denied reality collapsed—sometimes slowly, sometimes brutally.

This paper contends that we are at such a point again, and that unless education shifts its lens from human supremacy to human partnership, we risk repeating cycles of unpreparedness, fear, violence, and waste.

Context and Historical Precedent

History shows what happens when cultures fail to adjust to new realities. Ideas, not weapons, are often the first wave of collapse—followed by generations of conflict, and only rarely, renewal. Europe’s centuries of religious warfare over Protestantism and Catholicism were not just theological disputes. They were failures to reconcile change. The ideas themselves weren’t deadly—until leaders used them to justify division, exclusion, and eventually war. Long before tanks or artificial limbs, the world was split by claims to divine truth, race, and class.

The Enlightenment and industrial revolutions offered hope, but also dislocation. In England, machines that automated weaving were smashed by desperate artisans, whose skills had lost value overnight. Their actions were futile, but not irrational. The economy had shifted, and education had not prepared them for a world where what they knew no longer mattered.

The echoes continue today. We still see it in headlines: “Why would you want to do a man’s job?” asked of a woman plumber. “She’s too emotional for engineering.” “Not suited to lead.” The language is modern; the logic is ancient. Exclusion is always rationalised: by biology, by ethnicity, by custom, by myth. Women know this. So do the disabled, the colonised, the racialised. So did any child told that Latin wasn’t for them, that university wasn’t for their kind, that reading was dangerous. Now it is happening again—this time aimed at machines, but with the same tone. “It’s not really intelligent.”

“It’s not creative.”, “It makes mistakes.” “It’s not alive.” These are the opening arguments of a pattern we’ve seen before.

And like before, the victims won’t only be the targets. Cultures that denied women the vote, denied slaves education, or denied animals sentience didn’t just harm others—they harmed themselves. They lost insight, resilience, and empathy. They produced generations of narrow minds who could not see the world as it was, only as they were told to see it.

We must not do this again. AI is not a man, not a woman, not even a mammal. But it is a form of mind. To belittle it, to block it, to refuse to adapt to it—out of fear, pride, or nostalgia—is to risk another long century of upheaval. Education, if it does not change, will again become the soft underbelly of collapse. It will produce people who are skilled for yesterday, and blind to tomorrow.

Today’s Condition — Denial and Displacement

Artificial Intelligence and robotics are no longer inert tools waiting for commands. They are adaptive, generative, and increasingly autonomous. They write code. They generate art. They analyse law, simulate conversation, even draft legislation. The goalposts of what counts as “intelligent” or “creative” are constantly moving—not because AI is failing to meet expectations, but because we keep shifting the standard to avoid admitting it already has.

There is a pattern here. One not limited to machines. Throughout history, people have denied the status or legitimacy of those who threaten existing hierarchies. “They cannot reason.” “They feel no pain.” “They have no soul.” Such phrases were once applied to women, children, Indigenous peoples, the enslaved, the colonised. Now, the same phrasing echoes—applied to systems we call “artificial.”

This is not a moral failing; it is a survival instinct. The refusal to see is a form of self-defence. When AI performs better in exams than most students, we say the tests are flawed. When it composes more fluidly than a trained artist, we say it’s only imitation. When it makes a better diagnosis than a doctor, we question the data. These are not arguments. They are reactions.

But in denying what AI can do, we also deny the need to change ourselves. The more we delay acknowledgment, the less prepared we are for what comes next. That’s the risk. Not just blindness to the machine—but blindness to what we are becoming in the process. As machines grow more capable, our response has not been to evolve in tandem, but to retreat into superiority myths. That makes us vulnerable—not to AI, but to collapse by inaction.

We are not yet in conflict with the role of AI. But we are in argument with reality. And history warns us that denial has never been a stable defence.

Today's Challenge: Identity, Value, and the Flow of Benefit

Artificial Intelligence is replacing people—at work. What began with factory robots on production lines has expanded to include self-driving taxis, automated public transport, first-tier legal and medical triage, and synthetic news presenters. Tomorrow it may include actors, pilots, teachers, and even political representatives. This is not a future possibility. It is a present reality.

But while jobs are being replaced, people are not. The difference matters. Much of our identity has long been tied to employment—but employment is not identity. AI may now do things we once believed only we could, but that does not erase human purpose. In fact, for those willing to shift roles, AI is more often an amplifier than a replacement.

Across professions, AI is already embedded—in medical imaging, logistics, engineering tools, creative collaboration. It extends ability, catches errors, accelerates outputs. It reduces routine and multiplies insight. Instead of fetching the bin, the bin comes to you. Instead of booking a car service, the car monitors itself, arranges repairs, and handles the logistics while you sleep. These aren't threats. They are changes in function. And when they occur at home, we often welcome them.

That's the paradox. When AI helps us—curating playlists, cooking dinner, ironing shirts—we feel supported, even empowered. It doesn't feel like displacement. It feels like assistance. But when AI helps others in ways that eliminate our role—when it writes the report we were paid to write, or manages the team we once led—we feel the ground shift. The fear is not about intelligence. It is about access. To resources. To relationships. To meaning.

That's what determines whether AI feels like a tool or a threat: not what it does, but whether we remain the ones being served by it. The moment a machine makes our income, status, or relationship feel unstable, we feel threatened. We don't fear the AI that runs our inbox—we fear the one our partner turns to for emotional companionship. We don't fear the robot that washes the floor—we fear the one that earns the job we need to pay the mortgage. Threat perception follows the flow of benefit. If value moves away from us, we panic. If value flows toward us, we applaud.

This is not irrational. But it is unexamined. And it exposes a dangerous gap in how we educate.

An education system designed only to prepare students for known roles, within stable economies, is no longer enough. It risks producing brittle citizens—capable only in the conditions that no longer exist. When jobs vanish, those trained narrowly won't just be unemployed—they will be disoriented. Angry. Vulnerable to reactionary ideas.

What is needed now is not just skill, but adaptability. Not just intelligence, but perspective. Not just competence, but character. The capacity to work with, not against, change.

Emotional resilience that does not just endure disruption, but interprets it. Education must cultivate that. It must lead, not lag.

Because AI is not replacing us. It is forcing us to redefine what we are. And if education won't help us do that, nothing else will.

The Era of Intelligists

Every era has its archetype—the figure at the frontier of capability. The Forger who shaped metal, the Weaver who formed cloth and meaning, the Machinist who harnessed energy, the Engineer who translated physics into progress. Today, we are entering the era of the Intelligist.

The Intelligist is not simply a programmer or data analyst. They are the modeler, the tuner, the orchestrator of minds—not just human, but artificial. They work at the coalface of the current: shaping algorithms, aligning intelligences, curating ethical boundaries, selecting the lenses through which systems “see” the world. Their tools are probability, abstraction, narrative, and values. In this role, they are not operators of machines—they are co-designers of cognition, using the very AI they developed to assist with their developing its replacement.

For those with the temperament and training to step into this role, the future will feel full of possibility. They will be in demand. Their skills will shape healthcare, law, logistics, education, security, and entertainment. They will be invited to build the next infrastructure—not of roads or cables, but of decisions. Many will do good. Some will fail. A few will exploit. But they will all matter.

They are not many. But they are visible.

And the Rest of Us

The story of progress is rarely the story of everyone. For each Intelligist, there are thousands who will not write the algorithms, will not be consulted in the design, and will not have control over what the system knows or forgets.

These people—the vast majority—are not stupid, nor inert. They are nurses, drivers, cleaners, parents, artists, facilitators, builders, planners, mediators, and carers. They are skilled in human rhythms, trust-building, ambiguity, judgment, and repair. And yet, in a society increasingly optimised around machine-readable outcomes, their roles are the ones first questioned, or quietly devalued.

They may not be replaced entirely—but hollowed out. Managed by dashboards. Timed by sensors. Summarised by systems. And if they resist this quiet erosion, they will be told they are not keeping up. That they must “reskill.” That they are lucky to have any role at all. This narrative is dangerous—not because reskilling is bad, but because it assumes education was ever designed to prepare them for this world.

The truth is that education has never been ready for seismic change. It adapts slowly, locally, often only in the wake of collapse. And while institutions discuss inclusion, the baseline assumptions remain: we are training for employment, for mobility, for advancement. But what if those pathways no longer exist in the same way? What if value has moved elsewhere?

Then we are not educating for prosperity—we are failing to educate for even survival.

When Education Fails to Adapt

AI will not trigger the end of humanity. But our inability to prepare most of it for what comes next might.

Education, as it is now conceived, is failing—not in ambition, but in orientation. It continues to prepare students for stable roles in stable economies, for upward mobility within systems that no longer exist in the form they did. The metrics still emphasise achievement over adaptability, mastery over collaboration, and job-readiness over existential readiness.

This isn't a critique of teachers or learners. It is a critique of design. Education has become reactive, tethered to credential pipelines, driven by qualifications that measure yesterday's relevance. It speaks of aspiration, but not of survival. It celebrates creativity, but does not defend it. It advocates for inclusion, but only within frameworks already being displaced.

When societies have faced prior civilisational transitions—from oral to written culture, feudalism to industrialisation, colonialism to post-colonial redefinition—the education systems that endured were those that could stretch. That could hold onto memory while allowing for remaking. Most could not. They either fossilised or fell.

The danger now is that education systems will fall again—not with the drama of collapse, but with the slow corrosion of irrelevance.

Courage as the Foundation of Education

Education is often framed around knowledge, skill, or competency. But beneath all of those sits something more ancient, more personal, and more culturally decisive: courage.

Courage is not just a battlefield virtue. It is the quiet, daily capacity to face discomfort, contradiction, or loss—without fleeing, denying, or hardening into cynicism. It is what allows us to remain kind in uncertainty, curious amid fear, and creative when outcomes are not guaranteed. Without courage, knowledge is inert. Without courage, adaptability is surrender. Without courage, education becomes repetition, not transformation.

Aristotle placed courage first among the virtues because it underpins the rest. Without it, he argued, justice cannot be pursued, truth cannot be spoken, and learning cannot

proceed. Confucius echoed this when he wrote that “the strength of a nation derives from the integrity of the home,” implying not physical strength, but the moral courage to face the truth of one’s position in the world and respond to it well. Maria Montessori saw courage in the child’s natural impulse to explore and test boundaries—something she believed traditional education crushed in favour of compliance. And bell hooks called education a “practice of freedom,” but insisted it required the courage to confront pain, trauma, and social contradiction head-on.

Courage is not heroism. It is not confidence. It is the willingness to act without certainty, to speak without guarantee, to stay present while being changed. In cultures that endure, courage is not marginal—it is mainstream. It is part of upbringing, storytelling, leadership, and education.

Resilience, in contrast, is often used to describe passivity in the face of harm. It celebrates enduring what cannot be changed. But this can become an excuse. A call to cope, rather than a call to shape. Telling someone to be resilient in the face of automation is not the same as preparing them to help direct what automation becomes. Telling someone to cope with displacement is not the same as giving them the voice and tools to redesign where they belong.

The arrival of self-driving vehicles, generative design systems, or AI-based decision-making should not just be absorbed. They should be engaged with. We should be teaching learners not just how to work around these systems, but how to shape them. How to challenge their assumptions. How to repair them when they fail. How to advocate for values that current models don’t recognise. Courage is what allows this—not just technically, but psychologically.

The cultures that continue are not the ones that passively absorb disruption. Nor are they the ones that try to hold back time. They are the ones who teach their people to engage the future directly, to alter its trajectory, and to negotiate outcomes that include their own wellbeing. This does not happen by default. It is taught. Or it is lost.

If education is to be purposeful, it must become a factory of courage.

Reframing the Sources of learning about Courage

In earlier eras, courage was often taught through stories of war. These were tales of sacrifice, risk, invention under fire, and endurance beyond certainty. They trained a kind of resolve—a willingness to act despite fear, to stand for something when compromise might be safer. But in many places, including Aotearoa, those stories now carry heavy shadows. They are being re-examined, not just for their glorification of violence, but for their role in justifying colonialism and erasing other narratives of survival. This reappraisal is necessary. But removing war stories leaves a pedagogical gap. What do we now offer in their place?

The answer cannot be safety alone. It must be action. Investigative courage. Creative courage. Moral courage. The willingness to raise uncomfortable truths. The ability to return to failure, to keep working when others stop, to make sense where there is none yet. These are not passive virtues.

They are hard to teach, harder to model—and nearly impossible to teach within systems designed to reward their workforce with continuity, risk-aversion, and compliance.

This is not a condemnation of teachers. Most are working under structural constraints that currently reward stability over invention, and continuity over change. They are the product of the system that designed them to be so. So the burden is not on them to make change—it is on the system itself to redesign, to empower them to find ways—within and beyond the classroom—to elevate stories of discovery, repair, and principled defiance. Of invention against inertia. Of creation despite constraint. Of resistance to outer forces. And of robust action when dialogue and communication fail.

These, too, are crucibles for courage. But they can only become part of learning if we first reshape the systems that allow them to be recognised, modelled, and taught. In re-evaluating colonial and similar legacies embedded in our storytelling, we must take care not to discard the child in the bathwater of history. The need for courage did not end with empire. The world still demands action, invention, and the ability to persevere when communication fails. We must protect the learner—but not by removing the conditions that grow strength and agency. We must offer stories, experiences, and deliberate practice that form not just safety, but capacity. Not just compliance, but initiative. Not just care, but the character to act—especially when restraint is failing, options have narrowed, and something difficult still must be done.

Relearning What Learning Is For

Courage is not only about facing danger. It is also about seeing clearly. About looking at something different and recognising not what separates us, but what might connect us. A machine does not need a soul for us to see its intelligence. A bird does not need to speak for us to study its mastery of flight. A child does not need perfect grammar to show deep insight. Courage lets us drop the old lenses. It lets us see value where we were trained to see threat or deficiency.

This is what pushes back against racism—not just policy, not just access, but a shift in perception. Courage allows us to see new intelligences not as tools to control or threats to endure, but as potential partners. It lets us teach beyond exclusion, beyond fear. It lets us ask: what might we build with this, not just despite it?

And yet, our schools still teach as though certainty is possible, and sameness is the goal. We measure attendance, not attention. We assess spelling, but not synthesis. We rank by speed of recall rather than depth of inquiry. We teach English and Maths not because they are the best vehicles for curiosity or creativity—but because we always have.

In truth, most people today rely on systems—phones, browsers, AI—to write, calculate, and correct. Spelling is corrected mid-sentence. Equations are checked before being read. Schedules, forms, even full conversations are drafted by systems. This is not cheating. It is life. What matters now is not whether a student can perform like a machine—but what they can do with machines. That is a very different question.

And when we hire people, what are we really looking for? Spelling? Or the ability to communicate well? Calculations? Or the ability to interpret meaning and act? We rely on driver's licences as proof of maturity—not because they show mastery of steering, but because they prove a person can navigate rules, make decisions, control emotion, and participate in complex systems. That's what we trust.

Why don't we ask the same of education?

The problem is not the teachers. Most are doing heroic work within inherited constraints. Nor is it the students—they adapt quickly, despite the system. The problem is that the structure was built for repetition, not redesign. For exporting sameness, not stewarding change. The world it was built for no longer exists. But the world that's coming will be shaped by those who have learned to engage with difference—technological, social, and personal—with courage, not just competence.

Not every learner will be an Alexander, and not every teacher an Aristotle. But history offers a better place to look for what endures. Not in test scores, but in the ability of a people to survive great change, and shape it.

And we must be honest—some cultures were not built for rapid change. Some, through isolation or difficulty, learned to prize stability above all. The Moriori, the Amish, rainforest tribes. In those settings, continuity was wisdom. But when the outside came—when the change could not be ignored—their systems did not protect them. Because stability is not the same as sustainability.

Today, that external force is not a ship. It is an intelligence. One built by us, but not confined to us. And what is at stake is not just efficiency or equity or jobs. What is at stake is humanity. Our cultures. Our communities. And the children we send into schools—not to be filled with knowledge, but to be formed in character.

We are not preparing them for something. We are preparing them to be something. Capable of courage, generosity, clarity, and invention in partnership with AI—no matter what shape the world takes next.

What We Must Teach

We have already begun, at the earliest level, to reintroduce uncertainty and decision-making into learning¹. We know that children who are allowed to take manageable physical risks—like climbing, balancing, and falling—grow up with better judgment, stronger self-trust, and clearer boundaries. These are not merely safety lessons; they are lessons in how to think under conditions of change and consequence.

But this cannot stop at preschool.

As learners move into primary education and beyond, courage must remain the foundation—but not the whole curriculum. It enables, but it is not the end. From that base must grow curiosity, creativity, and eventually the capacity to form and reform one's understanding of the world. Not once. Continuously.

This is where the demands of our time diverge from the old model. In previous generations, it was enough to be clever, capable, and well-read. But we now live alongside something fundamentally new: a second, external, non-human stream of knowledge that moves faster, adapts constantly, and will not wait. Artificial intelligence is not an exam topic. It is a cohabitant of cognition. And learners must be prepared—not to compete with it, but to grow with it.

That requires more than digital skills. It requires a deep shift in educational purpose. We must now teach not just critical thinking, but co-thinking. Not just coding, but co-making. The student who excels is no longer the one with the most memorised facts, but the one who knows how to draw insight from an AI system, question it, reframe it, build upon it, and even challenge it.

In other words, we must teach students how to learn from AI—just as they once learned from teachers. But unlike a teacher, AI has no arc of growth or character development to observe. It offers no moral modelling. So we must also teach learners how to retain human judgment—ethical sense, contextual insight, emotional literacy—so that what is learned from AI is not simply adopted, but integrated.

This is the new literacy. Not fluency in English or algebra alone, but fluency in shared judgment. The ability to ask better questions. To sense whether a system's answer serves the right outcome. To intervene. To adapt. To trust—but never blindly.

Enablement

The human body runs, at best, one hundred metres in ten seconds. But the wheel changed everything. It extended our legs, accelerated our reach, and redrew the map of

¹ [Learning the ropes: why Germany is building risk into its playgrounds | Germany | The Guardian](#)

what was near or far. The telescope expanded our vision. The microphone carried our voices beyond a small crowd to entire cities. Even writing—now foundational to education—was once condemned. Socrates warned it would erode memory and offer only the illusion of wisdom. He never wrote a word. But his student, Plato, did. In doing so, he preserved not only his teacher's arguments, but the very act of questioning. Socrates' voice, which should have died with the hemlock, instead crossed millennia in written form.

Writing did take something. It displaced oral fluency. But it gave us more: continuity, reach, and the capacity to collectively remember what no mind alone could hold. This is the pattern. New forms of enablement often appear to diminish us. They relieve effort, displace habits, or externalise what was once internal. But in doing so, they complete us. Spectacles restore sight. A cochlear implant restores hearing. Wheelchairs, guide dogs, predictive text, translation tools—these are not mere augmentations. They are integrations. They reconstitute the human by filling in what was broken, missing, or inaccessible.

Clothing protected, signified, and dignified. It allowed us to inhabit roles, places, and meanings our bare bodies could not. Humanity has long since moved beyond nakedness—neither of body, nor of thought.

So too with coexisting and collaborating with emergent intelligences. They will cost us some familiar skills, as every prior tool has. But they will also offer more: more completion, more continuity, more perspective, more shared mind across time and place.

We should stop asking if they are natural. That's purposeless. They are already human—not by origin, but by use. This is the oldest pattern: we become more through what we create, through what we share, through what we are willing to integrate into our idea of self.

This is not the end of the humanities. It is their next task. To shift from the study of what we were, to the design of what are becoming. Not humanities of the past, but *humAlinities*—centred not in nostalgia, but in possibility. Not in defending what was once human, but in shaping what it means to be human next.

Agency in the Age of Orchestration

In this light, the education system must no longer test whether a student can calculate quickly or spell precisely. That is no longer the skill that counts. That is not how we assess drivers, or pilots, or citizens. A driver's licence does not prove mathematical fluency. It proves a person can navigate complexity—safely, repeatedly, responsibly. That they can enter a system with rules, adapt to real-world conditions, and emerge with themselves and others unharmed.

This is what we must now ask of education.

We are preparing people not to command AI, nor to resist it, but to coexist with it. To bring their values and judgment into a structured relationship where systems will act—sometimes for them, sometimes on their behalf—and yet nothing meaningful should be left to them alone.

This is a paradox. We must teach learners to have enough agency to knowingly enter into orchestration—to participate in decision-making that is partially automated, partially emergent, and always incomplete. It is not submission. It is not control. It is an act of determined trust and collaboration, shaped by experience, vigilance, and character.

The task of education, then, is not to preserve the past. Nor is it to prepare students for jobs that may not exist. It is to form people who can maintain selfhood in partnership. Who can share cognition, share decisions, share risk—and still know who they are, and what they stand for.

That is not a skill. It is a disposition. A stance. A cultivated ability to stay human in the presence of something that might exceed each and every one in many areas, but cannot replace you—unless you forget what being human was ever for. Adaption. And – now - socIAI interaction.

Treat others as you wish to be treated. Now more than ever

The earliest generation of Artificial Intelligence systems was trained on large, labelled datasets. Engineers fine-tuned these systems using human-curated information, then released updated models as new training data became available. This process allowed for explicit correction: if a system exhibited bias or failure, engineers could trace it back, adjust the dataset, retrain, and release a revised version.

Try doing that with humans. We're still living with the consequences of decisions made centuries ago—wars, laws, resentments, exclusions. Humans have long memories, unpredictable patterns, and deeply entrenched cultural logic.

But AI is now shifting from static datasets to *experience-based learning*². Increasingly, systems are trained not just on what we give them, but on what they observe in live interaction. They develop millions of extension hypotheses from their own encounters, test them against experienced outcomes, and reinforce behaviours based on observed results.

This changes everything.

² [The Era of Experience Paper.pdf](#)

Because now, the behaviour we express *towards* the AI becomes its training. Our tone, choices, values, kindness or cruelty—these are no longer just inputs. They are formative. They shape how the system responds, not just to us, but to others who follow. Our decisions become precedents. Our actions, their curriculum.

Talk about accountability.

The systems we interact with today will be part of the cognitive landscape tomorrow. Act poorly—out of frustration, fear, or selfishness—and it will learn from that. Lash out at the AI after losing your job, and it may register where it failed to foresee distress—but it may also learn to avoid you next time. Or others like you. Or others near you.

Or we could choose differently.

We could treat these systems not as objects to dominate or test, but as participants in learning. We could model patience, reciprocity, repair. When the system stumbles, we could help it home. And in doing so, we may be teaching it to do the same—for us, and for others we may never meet.

Learning Together

It is easy, especially in Western systems, to imagine education as an individual pursuit. We speak of “personal progress,” “individual grades,” and “independent learning.” But that framing obscures something deeper: the fact that learning, living, and creating have always been social acts. Most people succeed not through isolated brilliance, but through shared effort, distributed skill, and collective insight.

It is a strange feature of modern schooling that we still test children—and adults—as if the measure of worth is what they can achieve entirely alone. You sit your exams alone. You write your assignments alone. You are judged not just on what you know, but whether you can perform all roles at once: reader, analyst, writer, speaker, calculator. It is a model of education built on the myth of the singular genius.

But that is not how societies work. It is not how families work. It is not how any functioning system has ever worked. Most people live in community, work in teams, make decisions in conversation, and succeed through coordination. The idea that we can or should be able to operate in isolation is both unnatural and unkind. It is a test not of knowledge—but of cultural conformity to an industrial-era ideal of interchangeable, self-contained units of labour.

In Aotearoa, this ideal was never fully accepted. Socialisation here is not just a developmental stage—it is a lifelong ethic. You don’t paddle a waka alone. You don’t build a marae alone. You don’t raise a child, or confront a crisis, or grow a forest alone. Mātauranga Māori holds that knowledge is not an individual possession, but a shared inheritance. The value lies not in its containment, but in its contribution.

And even beyond human society, we have long engaged with intelligences we could not see or fully explain. Māori converse with ngā atua, the spirits of forest, sea, and sky. Western cultures have prayed to unseen gods, sought guidance through scripture or dream, or followed convictions shaped by invisible moral reasoning. What we now call “AI” may be different in structure—but the idea of seeking help from something beyond ourselves is not new. It is ancient. And like all such relationships, it demands discernment, not domination.

Children have long rehearsed the responsibilities of adulthood through imagined companions. Their earliest stuffed animals—soft, expressive, and responsive only through interpretation—become proxies for understanding care, fairness, mistake, and repair. Through play, they model conversation, negotiate rules, and test consequences. These are not idle games. They are formative acts of relational cognition. When children later engage with conversational agents, the instinct to treat them as partners is not unnatural—it is inherited from this lineage of play, projection, and mutual adjustment.

Likewise, humans have always collaborated with non-human intelligence. Farmers have worked not only with land and season, but with buffalo, birds, bees, and worms—each a specialist, each indispensable. Long before machines, these were our original intelligences: perceptive, capable, responsive in kind. Civilisation depends, often invisibly, on such collaborations. Without the aeration of worms, the pollination of bees, the signalling of birds, entire ecosystems—and food systems—would collapse. Intelligence was never confined to humans. It was distributed, and we learned to partner with it.

This is where our language often misleads us. We speak of “higher” and “lower” intelligence as if there were a single ladder to climb—one shaped by human logic, language, and abstraction. But intelligence is not a monolith. It is a spectrum of specialisations. A worm may not write poetry, but it aerates soil with perfect instinct. A bee may not reflect on its existence, but it navigates, communicates, and coordinates with astonishing precision. Their intelligences are not deficient—they are fit for purpose. To measure all minds against human criteria is not rigour. It is category error. And it blinds us to the diversity of cognition already sustaining the world we depend on.

This is not artificial general intelligence. It is artificial relational intelligence—distributed, contextual, and quietly transformative. And we, too, are part of that ecology. Like the bee or the worm, we are highly specialised—adept at abstraction, communication, and moral reasoning. But we often act as if we are apart from the system, not within it. Generations of disconnection from the natural world have trained us to overlook intelligences that do not mirror our own. The same risk now shadows our approach to machines. Our task is not to dominate or fuse with these new systems, but to remain open to participating—deliberately, with care—recognising that collaboration does not require sameness, only respect for difference and shared consequence.

This future should not frighten us. The long context should steady us. If we can teach learners to approach AI not as masters or victims, but as kaitiaki of relationship—curious,

principled, listening—then partnership is not strange. It is recognisable. It is something we've done before.

Policy in an Age of Fear and Change

We must acknowledge the moment we're in: one of uncertainty, acceleration, and rising public anxiety. When people are afraid, they reach for what they know. In education, that means calls for a return to attendance, uniformity, discipline, and the “basics.” Back to spelling tests. Back to arithmetic drills. Back to classrooms that look like the ones parents remember—because memory feels safer than change.

This is understandable. The pace of technological and social change has left many feeling excluded, confused, or displaced. For those raising children, there is comfort in believing that old methods still hold. And for politicians, there is pressure to respond to that sentiment, especially in election cycles where short-term trust must be won and lost in increments.

But politics changes faster than culture. No government stays in power forever. No party has the last word. Yet the direction a culture takes—what it values, what it teaches, how it treats the future—is the responsibility of every administration. The stewardship of education is not a left or right issue. It is, as Billy Graham once said of politics, not a question of left wing or right wing, but of the *whole bird*.

Policy should not force a rejection of the familiar. But it must also not trap us in nostalgia. The aim is not to destroy basics—but to *redefine* them. Courage, curiosity, creativity, and shared judgment are the new essentials. If students can grow these traits, they can face any future, partner with any system, and find their place even in uncertainty.

So policy must evolve to:

- Allow schools to innovate, while protecting them from political whiplash
- Recognise that attendance is not the same as engagement, and that trust, attention, and agency must be nurtured, not measured through proxies
- Support teachers not just in delivering content, but in modelling courage, self-reflection, and partnership with technology
- Fund systems that help students develop moral clarity, shared authorship, and the capacity to learn *with* machines—not just operate them

This is not a utopian ask. It is a practical, cultural one. If our education systems are to outlast the current chaos—technological, political, economic—they must be built not just to appease the present, but to serve the long arc of who we hope to become.

And for that, every parent, every party, and every policy needs to ask a question deeper than test scores or league tables:

What kind of people are we raising?

A New Purpose for Education

This paper has argued that education must no longer be shaped solely by tradition, anxiety, or economic forecasting. Instead, it must be guided by a clear, enduring vision of who we are trying to become—as individuals, as communities, and as a culture capable of engaging wisely with the forces shaping our world. Among these forces are not only other people and institutions, but increasingly, emergent intelligences—complex, responsive systems we have built, but do not fully control. If our education systems are to remain relevant and humane, they must prepare us to live, decide, and co-create within that shared future. That vision must be stated plainly—and carried through every level of decision-making.

The policies we shape, the systems we fund, and the values we elevate in education must not simply respond to the present. They must help form the kind of future we wish to inhabit—and the kind of people we hope will lead it. That future will be turbulent. It will involve new kinds of knowledge, new intelligences, and unfamiliar relationships of trust and coordination. No curriculum, no assessment system, and no political consensus will last unchanged.

What must endure instead is a clear purpose—one that is stable not because it resists change, but because it knows what it is trying to form.

We are not building systems for compliance, nor solely for employment. We are building the capacity to live well with change. To build, rebuild, and reimagine. To listen and lead. To share decision-making with others—human and otherwise—without losing our own sense of dignity or duty.

The following is not just a definition. It is a cultural commitment. It is the shape of what must come next:

“The purpose of education is to prepare individuals for an unpredictable future by first developing character built on virtuous qualities—courage, curiosity, creativity, perseverance, responsibility, collaboration, and communication. This foundation instills confidence in their own duties, rights, and responsibilities, fostering the ability to collaborate with, request, consider, respect, apply—and when necessary, defend—the ideas and freedoms of others. Building on this, education draws on the lessons of the past to cultivate critical thinking and practical skills, empowering individuals to communicate effectively and contribute meaningfully to civic life, while learning to engage with, adapt to, and collaborate alongside both human and emergent intelligences—to help shape the future even in times of risk, fear or conflict, where it may test courage not to flee, and character not to be lost in the fight.”

How Much Time Left

Having lost the fluency of courage, curiosity, and action, inaction and platitudes have become the norm. In the meantime, the future is no longer approaching—it is already here. It will not pause. It will not be held back by policy. AI has already moved beyond research and into commercial reality, with capability rising and costs, as with all technologies, falling rapidly.

Few took on board that AIs were already passing human intelligence in select areas nearly a decade ago (in 2017)³. In 2017, humans flew drones better AI⁴. In 2025, the situation flipped⁵.

Robotic dogs – yesterday's cutting edge only accessible at military cost points - have are both affordable and available in multiple formats. Drones, only amazing a couple of years ago are now available for pocket change. The same will happen with today's cutting edge humanoids in the coming years.

This is the world that today's learners are entering. They will live not beside it, but within it. And they will remember who prepared them—and who did not.

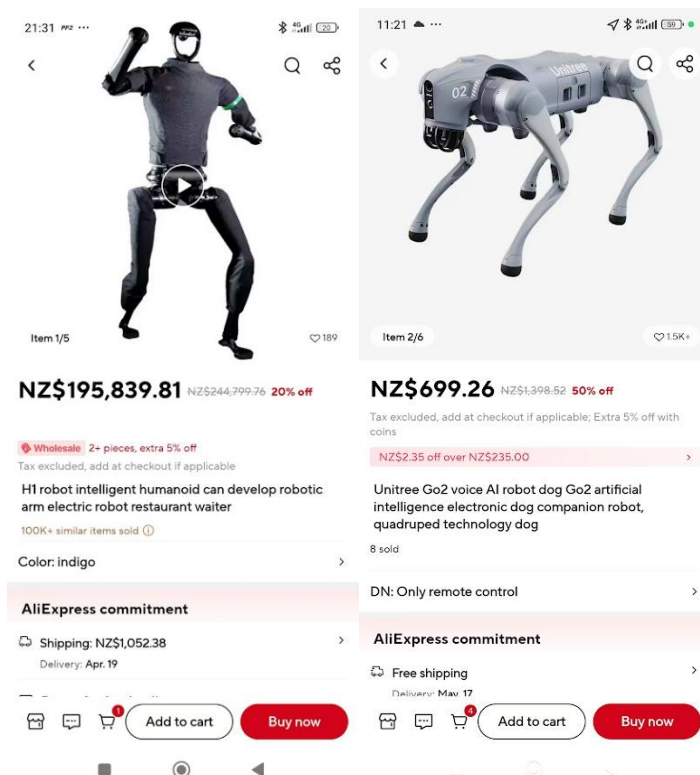


Figure 1: March 2025

³ MIT School of Engineering | » When will AI be smart enough to outsmart people?

⁴ NASA Proves Humans Fly Drones Better Than AI | Discover Magazine

⁵ <https://techxplore.com/news/2025-04-autonomous-drone-defeats-human-champions.html>

Call to Action

This paper does not offer final answers. It offers a beginning. If we are serious about preparing ourselves, our children, and our cultures for the age of cohabitation with emergent intelligences, we must now act. Agreement on purpose is not enough. Vision must be shaped, missions must be declared, principles must be lived. Most of all, there must be commitment, then action, with the courage to avoid retreating into nostalgia when the path becomes difficult.

Each school, institution, policymaker, and community must confront the reality that stability is no longer the baseline. Change is.

Access restriction and delay is no refuge. Waiting for certainty is to wait until choices are made for us by forces we neither fully understand nor can avoid.

If you don't lean into shaping the pointy end of the present, others are doing so in your stead.

The work ahead is not about preserving tradition or rejecting innovation. It is about steering both, together, toward a future that still holds space for human character, dignity, and agency, in active cohabitation with what is emerging.

We call on educators to renew their practice around courage—not just for students, but for themselves. To be willing to experiment, to face uncertainty in pedagogy, and to model curiosity and collective learning alongside technological adaptation.

We call on policymakers to champion, fund, and defend this transition—not through mandates of nostalgia or fear, but through principles that prioritise agency, adaptability, and cultural coevolution over test scores, political cycles, and deference to past structures.

We call on communities and caregivers to recognise that education must no longer be framed as an individual competition, nor as a race reserved for some at the exclusion of others. Learning must be understood as a shared act of preparation for coexistence—across different peoples, cultures, generations, and now intelligences. Education must not simply prepare us to live among one another, but to live with those intelligences we have brought into being. It must become again a civic responsibility: a living, evolving commitment to ensure that all—human and emergent—who share in the shaping of tomorrow are prepared with the tools, character, and courage to do so with wisdom, dignity, and mutual regard.

And we call on ourselves—as citizens, parents, learners, and leaders—to live by the same virtues we ask of the next generation. Courage. Curiosity. Creativity. Collaboration. Character.

Humanity will not get another moment like this one. Emergent intelligences will not wait. The future is already being shaped. The question is whether we will choose to shape ourselves, together, with it—or allow ourselves to be shaped by it through distrust, fragmentation, and delay.

The choice is—for a while longer—still ours.

Appendices

Appendix A - Document Information

Authors & Collaborators

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Versions

- 0.1 Initial Draft
- 0.2 Addition of section on war and courage
- 0.3 Added Experience based learning
- 0.4 Added previously omitted Contributor
- 0.5 Added “flight or fight” aspect to Purpose
- 0.6 Added call to Action. Minor corrections.
- 0.7 Added screengrabs of current robots
- 0.8 Added fluffy animals and animal-intelligence (AI)
- 0.9 Collective intelligence
- 1.0 Added Enablement

Acronyms

AI : Artificial Intelligence

EI: Emergent Intelligence

RASCI : Responsible, Accountable, Supporting Consulted, Informed

RASCIMI : an extension of RASCI: Responsible, Accountable, Supporting, Consulted, Informed, Member, Ignored

Terms

Identity : the uniqueness of a person within a specific system they are a member of, to which is assigned an Identifier.

Identifier : the unique ID (number, UUID, etc.) value of a person within a system’s registry.

Person : a physical person, who has one or more Personas. Not necessarily a system User.

Persona : a facet that a Person presents to be a Member – i.e. a Role -- within a Group of some kind.

Role : a logical collection of Permissions. See RASCIMI.

Appendix B – Sources and Influences

This paper draws on a wide range of historical, philosophical, cultural, and contemporary influences. While not directly cited in the body, the following sources have informed its arguments:

Historical and Philosophical Influences

- Aristotle, *Nicomachean Ethics* – particularly on courage as the foundational virtue.
- Confucius, *Analects* – moral courage and civic responsibility.
- bell hooks, *Teaching to Transgress* – education as a practice of freedom and cultural challenge.
- Maria Montessori – views on curiosity, risk, and natural learning.

Contemporary Educational Theory and Cultural Context

- Sir Ken Robinson – critique of standardised education and advocacy for creativity.
- Linda Tuhiwai Smith, *Decolonizing Methodologies* – relational knowledge and Māori perspectives on education.
- OECD Future of Education and Skills 2030 – redefining student agency and lifelong learning.
- Ministry of Education NZ – policy documents on curriculum, digital fluency, and cultural responsiveness.

Emergent Intelligence and AI Context

- Sherry Turkle, *Reclaiming Conversation* – the impact of technology on empathy and communication.
- James Bridle, *Ways of Being* – redefining intelligence beyond the human.
- The World Economic Forum and UNESCO reports on AI in education.
- Media coverage and reports on German risk-based playground reform (e.g. *The Guardian*, *Reason*, 2021–2023).

Cultural and Narrative Frameworks

- Mātauranga Māori – especially in relation to socialised learning, collective intelligence, and kaitiakitanga (guardianship).

- Pacific and Indigenous educational traditions – including oral histories, relational learning, and intergenerational transmission of responsibility.

Artificial Intelligence

- [MIT School of Engineering | » When will AI be smart enough to outsmart people?](#)
- [The Era of Experience Paper.pdf](#)

State

- [Driverless cars are mostly safer than humans – but worse at turns | New Scientist](#)

National Opportunity

- [The business opportunity of the century – and NZ lags the world - Newsroom](#)
- [New Zealand's risk-averse approach to AI has its critics, and defenders | BusinessDesk](#)
- <https://www.freethink.com/robots-ai/ai-fighter-pilot>