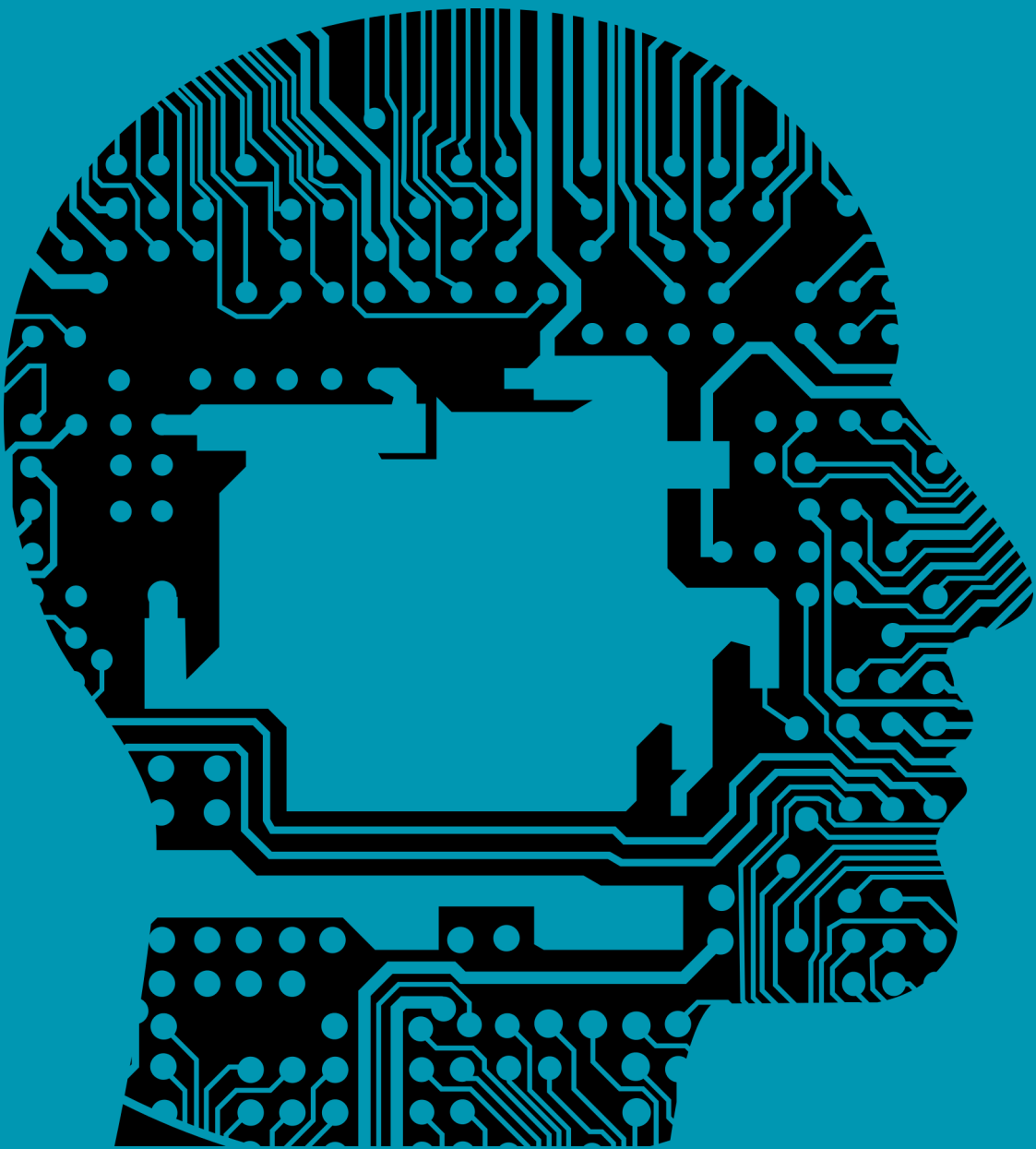


V1. Ideas on University Teaching in the Age of AI

DOCENTIA LECTURES

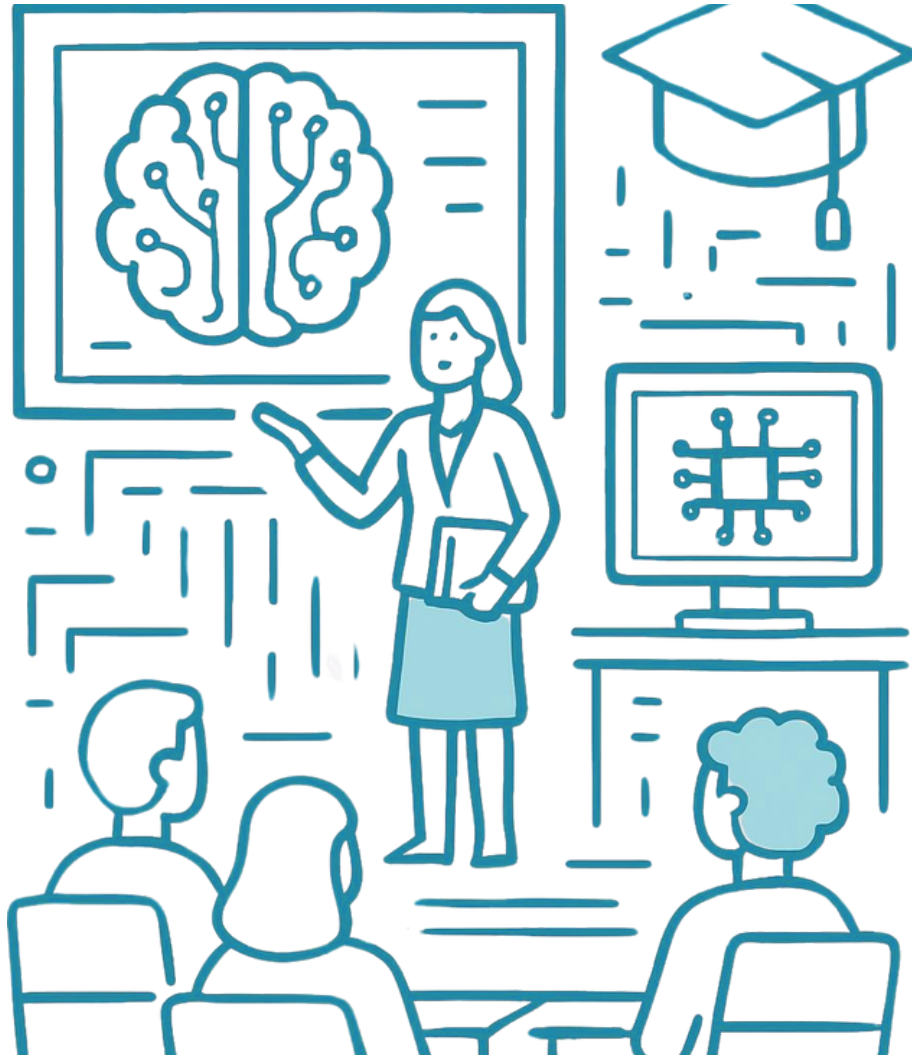


AI in Higher Education:
An opportunity to reduce learning gaps

What does this contain?

INTRO: What we do at DOCENTIA

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- 2.– Classroom in 2030 will have teachers... and agents.
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- 4.– Cognitive automation: What competencies should universities prioritize?



Teachers are not all the same — they don't learn the same way, nor do they start from the same place. A center that aspires to support real trajectories must be able to offer learning pathways adapted to that diversity, not rigid itineraries that ignore differences.”

intro

What we do at DOCENTIA

Some university centers exist to fulfill an administrative function. Others exist because someone decided that teaching deserves to be taken seriously. DOCENTIA, the Center for Teaching Innovation and Development at Universidad Autónoma, belongs to the second category. And in 2026, our work will focus on three areas that are not coincidental: they respond to what Chilean higher education urgently needs.

1. Educational innovation and digital modernization: more than tools, a change in logic

Talking about technology in education is easy. Doing it well is another matter. At DOCENTIA, it is not about incorporating digital tools because it is fashionable, but about implementing a model of technological adoption with a concrete objective: reducing digital divides by mainstreaming technological skills across disciplines. This means that Generative Artificial Intelligence does not arrive in the classroom as an isolated experiment, but as part of pedagogically designed projects with clear purpose.

The other dimension of this focus is learning environments. The traditional classroom is no longer the only — or necessarily the best — space where learning occurs. DOCENTIA is committed to multimodal environments that place online education and active technology-based models at the center, where the student does not receive content but constructs it.

2. Academic professional training and development: redefining what it means to be a university teacher

For decades, universities measured their academics' quality almost exclusively by their research output. Publish or perish, as the saying went. That model left something fundamental in the background: that an academic also teaches, and that teaching well is a competence that is developed, not a gift one either has or does not have.

DOCENTIA's training pathway aims precisely at that: transforming academics into expert facilitators of learning. It is not about replacing research, but about moving beyond the logic that places it above everything else and advancing toward an integral conception of the teaching profession. Added to this is the commitment to continuous professional development, understood not as one-off training sessions but as learning communities that sustain innovation over time.

3. Teaching support and professional trajectories: because improving teaching means improving learning

The third focus is perhaps the most concrete in its impact. DOCENTIA carries out direct classroom observation and feedback, guided by one overarching principle: improving teaching is the primary means of ensuring that students achieve the expected learning outcomes. There is no clearer way to put it.

This is complemented by a commitment to curricular flexibility. Because teachers are not all the same — they do not all learn the same way, nor do they all start from the same place. A center that aspires to support real professional trajectories must be able to offer learning pathways adapted to that diversity, not rigid itineraries that ignore differences.

Three focal areas, one shared conviction: that the quality of higher education depends, to a great extent, on what happens between a teacher and their students inside and outside the classroom. And that does not improve on its own, or by decree. It improves when there is a center that thinks about it, supports it, and makes it possible.

01

AI in Higher Education: an opportunity to reduce learning gaps

The data leaves little room for neutrality. 88% of students reported academic improvements after incorporating generative artificial intelligence into their learning process, and 30% managed to reduce the time spent on complex tasks. In any other context, these figures would be celebrated without qualification. But higher education is not just any context, and the same study reveals that 55% of students perceive that AI is already impacting academic integrity.

That is where the real tension lies.

Because the question universities must ask today is not whether to allow or prohibit the use of these tools, but how to integrate them without losing what university education must protect: the capacity to think independently, to solve problems without an algorithm as intermediary, and to produce knowledge with genuine authorship.



The key is not to ban AI,
but to integrate it
thoughtfully. Not as a
threat to learning, but as an
instrument in its service

Risks we can't ignore

34% of surveyed students expressed concern that excessive AI use could undermine their capacity for independent learning. This is not a minor concern, and the fact that it comes from the students themselves gives it particular weight. They themselves warn of technological dependency and the risk that delegating cognitive tasks to a tool will, over time, erode the very skills that tool replaces.

Added to this is the problem of academic integrity — the risk that work circulates without any real student involvement — and a dimension that often falls outside the debate: the digital divide. Not all universities and not all students have equal access to these technologies, which could widen inequalities that higher education should be closing, not deepening.

How to integrate AI with pedagogical criteria

The documented benefits are concrete. Intelligent tutors allow content to be personalized according to each student's pace and needs. Improvements in mathematics and science have been recorded thanks to immediate feedback. And writing, summarizing, and academic organization tools are relieving administrative burdens that previously consumed valuable time.

But making the most of those benefits requires deliberate institutional decisions. Responsible-use strategies point in a clear direction: oral and argumentative assessments that cannot be delegated to a model; applied and contextualized problems that demand situated reasoning; digital ethics training as part of the curriculum rather than an add-on; and explicit regulation of usage that sets limits without criminalizing it.

The teacher doesn't disappear: they transform

Perhaps the most profound change is not in the students but in those who teach. The new teaching role is not that of information transmitter — that function is already fulfilled, and thoroughly, by any language model. The teacher the university needs today is a facilitator of critical thinking: someone who guides the use of AI, teaches students to question algorithms, and strengthens the skills no tool can replace — creativity, empathy, and ethical judgment.

The key is not to ban AI, but to integrate it with sound criteria. Its adoption must be accompanied by ethical policies that ensure fair, transparent use that complements teaching — not as a threat to learning, but as an instrument in its service.

Source: IFE Observatory, Tec de Monterrey · Dr. Mauro Rodríguez Marín, 2025 · DOCENTIA · Universidad Autónoma de Chile · docentia.uaautonoma.cl

02

Classroom in 2030 will have teachers... and agents

For years, the debate about artificial intelligence in education revolved around a question that was, at its core, the wrong one: will AI replace teachers? The right question is different — more specific and more urgent: what kind of AI are we talking about, and is the university prepared to integrate it with sound judgment?

Because not all educational AI is the same. And that difference matters more than it seems.

Chatbot and agent: not the same thing

When most people imagine AI in the classroom, they think of a chatbot: something that answers questions, waits its turn, and doesn't remember the context from one session to the next. Useful, yes. But limited in its pedagogical conception.

An educational agent is something else. It acts, plans, and adapts content autonomously. It makes decisions without anyone asking it anything. The key difference is not technical but functional: the agent has its own goals and pursues them. It is not a passive assistant; it is an active pedagogical partner that operates alongside the teacher — not as a substitute but as a collaborator with the capacity for initiative.

What a multi-agent system does in the classroom

A multi-agent system takes that logic a step further. It is not "more AI" in terms of quantity, but an architecture in which several agents work simultaneously with differentiated functions: one adapts content to each student's pace in real time, another detects difficulties before the student can name them, and another coordinates with the rest to design the next class based on the group's performance.

Research backs this up with concrete data. A study of 305 university students conducted by Tsinghua University in 2025 demonstrated that multi-agent systems improve personalized learning and increase motivation, with the greatest impact on those who start with less prior knowledge — that is, exactly where it is most needed.

Does the teacher disappear? No.

This is where the debate tends to veer toward fear, and where it pays to be precise. The teacher does not disappear. Their role evolves: they stop being the central transmitter of information and become the orchestrator of learning experiences. That distinction is not semantic; it implies a profound redesign of how university teaching is conceived.

The real problem is not the technology but the superficiality with which many institutions adopt it. Universities that incorporate tools without redesigning their curriculum fail to harness the true potential of these systems and, at worst, add complexity without adding value. Personalization at scale — something technically impossible with human resources alone — becomes viable only when there is a pedagogical architecture to sustain it. And that architecture is designed by people, not algorithms.

There is also a dimension that cannot remain an afterthought: ethics, privacy, and academic integrity must be design conditions from the outset, not patches added after something has already gone wrong.

The question we can no longer postpone

The question is not whether multi-agent systems will arrive at the university. They are already arriving. The real question is whether our higher education institutions will be prepared to receive them: with trained faculty, redesigned curricula, clear policies, and the conviction that technology, however sophisticated, does not replace pedagogical judgment. It amplifies it — when properly guided.

That preparation does not happen on its own. It requires centers that take teaching seriously, that support academics through the transition, and that put the right question on the table before urgency forces improvisation.



Academic integrity in the age of AI is not a technical problem. It is a pedagogical, ethical, and institutional problem. And as such, it requires training, not just software

03

Artificial Intelligence and Academic Integrity:

The controversy the university can't ignore

Generative artificial intelligence is advancing faster than the norms trying to regulate it. That is not a metaphor: it is the concrete reality facing Chilean universities today, which simultaneously grapple with nascent protocols, improvised pedagogical adjustments, and a question that no one has fully managed to answer: how do we incorporate these tools without letting them replace learning?

The question is legitimate and urgent. Because the problem is not that students use AI — they do, and they will continue to do so — but that institutions have not clearly defined what it means to use it well, what constitutes academic misconduct in this new scenario, and how to design assessments that continue to measure what they are supposed to measure: the student's thinking, not a model's generative capacity.

At DOCENTIA, we decided to confront this controversy head-on through the Teaching Development Pathway course, "Academic Integrity." Not as a punitive response or a blind defense of tradition, but as a faculty development space that places the discussion where it belongs: with those who teach and assess.

Three axes that structure the debate

The course is organized around three focal areas that together cover the full spectrum of the problem.

The first is plagiarism in its contemporary form. It is no longer enough to detect copying between texts: AI-generated plagiarism poses different challenges — more diffuse and harder to prove. The course provides concrete strategies and tools for identifying and preventing it, but above all for understanding why it occurs and how the design of assessments can reduce its likelihood from the outset.

The second axis is ethical practice. Academic integrity is not just a set of prohibitions; it is a stance toward knowledge. The course addresses the principles that should guide an honest, transparent, and responsible teaching practice in the context of new technologies, recognizing that faculty themselves also use AI and that this reality also requires clear criteria.

The third axis is good practice, and it is perhaps the most immediately applicable. Diagnosing the problem is not enough: teachers need tools they can implement in their classroom the following semester.

What is done, not just what is prohibited

The practices developed in the course point toward a deep redesign of how learning is assessed and how the learning process is documented. Oral assessments and real-time defenses return the student's voice to center stage — their capacity to argue and to respond, in the moment, to what they claim to have learned. Progressive submissions and process journals make the journey visible, not just the final product, which is precisely what AI can fabricate without leaving a trace.

Two elements deserve special attention. The first is the transparent AI use declaration: an explicit agreement between teacher and student about which tools were used, for what purpose, and how the student's own work was verified. It is not a preemptive accusation; it is a trust contract. The second is traceability, understood as the capacity to answer three simple but revealing questions: what did I use, what did I use it for, and how did I verify that the result was mine.

The course also proposes something that runs counter to the trend of automating everything: teacher judgment must take precedence over automated detection. AI detection systems make errors, generate false positives, and fail to capture context. The professional judgment of a trained and supported academic remains irreplaceable.

Academic integrity in the age of AI is not a technical problem. It is a pedagogical, ethical, and institutional problem. And as such, it requires training, not just software.

04

Cognitive Automation: What competencies should universities prioritize?

There is a question that cognitive automation poses to the university today with uncomfortable clarity: if artificial intelligence can already process information, assess repeatable content, generate text and code, and deliver standardized feedback, then what are we training our students to do? What are we teaching them that a machine cannot do better, faster, and without getting tired?

The answer is not reassuring if one looks honestly at current curricula. Because a significant portion of what universities teach and assess today falls squarely within what AI already automates. And that is not a future threat: it is the present.

The gap that curriculum must acknowledge

There is a distinction that urgently needs to be made visible. On one side is what AI already does efficiently: processing information at scale, assessing repeatable content, generating text and code, and delivering standardized feedback. On the other is what no algorithm has yet genuinely replicated: situated ethical judgment, autonomous critical thinking, relational pedagogical connection, and creativity with a sense of its own meaning.

The direct consequence of failing to make this distinction is serious: curricula designed to transmit information are being displaced by technology. Those that develop judgment, discernment, and connection, however, have no algorithmic substitute. As noted in the working paper by Pablo-Martí and Mir-Fernández on the university curriculum and AI, transmission-based education becomes obsolete; relational, regulatory, and creative roles survive.

The university curriculum thus faces unprecedented pressure: to redefine itself not in terms of what it knows how to transmit, but in terms of what only human beings can develop.

The five competencies no curricular design can replace

Faced with that scenario, the relevant question is not what to remove from the curriculum, but what to protect with deliberate intention. Five competencies are placed at the center of the irreplaceable by evidence and pedagogical reflection.

The first is ethical judgment in ambiguous contexts: the capacity to reason through dilemmas that have no single answer, where values are in genuine tension and where correctness cannot be calculated. No language model reasons from its own values; it operates from statistical patterns.

The second is autonomous critical thinking, understood not as the ability to formulate good questions for an AI system, but as the capacity to construct one's own conceptual frameworks, to question foundational assumptions, and to arrive at conclusions that no one dictated to the student.

The third is the pedagogical bond and mentoring. The teacher's presence has an affective and motivational dimension with no algorithmic equivalent. An intelligent tutor can adapt content; it cannot support a student in crisis, celebrate a hard-won achievement with genuine pride, or convey the conviction that that student is capable of more.

The fourth is creativity with human meaning. AI generates, combines, and reconfigures. But creation arising from lived experience, particular emotion, and a body situated in the world cannot be replicated by a system that has no experience of its own.

The fifth is the resolution of unprecedented problems: reasoning from uncertainty in situations without precedent, where no historical data or prior pattern guides the response. This is precisely the kind of problem most abundant in the real world and the one current models handle worst.

What must change in curricula

Recognizing these competencies is not enough if the curriculum remains organized as it always has been. Four changes are necessary and achievable.

The first is to shift from transmission to problematization: designing pedagogical situations without a single correct answer, which require genuine ethical deliberation rather than content reproduction. The second is to integrate ethics as a cross-cutting axis of every discipline, not as an isolated course taken once and forgotten.

The third — and perhaps the most urgent in practical terms — is to redesign assessment. Evaluating reasoning processes rather than just final products radically changes what students learn to do and what institutions learn about them. If an assessment can be completed by AI, it is not measuring what it should be measuring.

The fourth is to strengthen the relational role of the teacher: to recognize human mentoring not as an affective complement on the margins of real learning, but as a central and irreplaceable pedagogical competence — one that deserves to be valued, developed, and institutionally protected.

Based on the working paper "The University Curriculum in the Face of AI: Strategies for Managing Radical Uncertainty (2025–2031)" by Pablo-Martí, F. & Mir-Fernández, C. · DOCENTIA · Center for Teaching Innovation and Development · Universidad Autónoma de Chile · docentia.ua autonom a.cl

THE QUESTION WE MUST ASK OURSELVES TODAY

If AI can do what we teach, the question the university can no longer postpone is both simple and demanding:

what are we developing that AI can't learn?

The answer to that question should be the starting point of every serious curricular redesign. Not from fear of technology, but from the conviction that there is something in human development worth defending with deliberation, judgment, and urgency.

Sources

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Source: IFE Observatory, Tec de Monterrey. Dr. Mauro Rodríguez Marín, 2025.

Cognitive Automation: What Competencies Should Universities Prioritize?

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Editor's Note:

The articles in this newsletter are published as infographics on our digital platforms on Instagram and LinkedIn.

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