Balancing Rights and Responsibilities in SMART Education: A Legal-Operational Matrix for the Professor, Institution and State

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Abstract: This article presents a legal-operational matrix for SMART Education, showing how the roles of professors, institutions, and the state are changing as AI becomes part of teaching. Using examples from different countries, it explains that both laws and daily practices need to fit local needs. The matrix looks at three groups: professors, who have rights and teaching duties; institutions, which set and enforce rules; and the state, which protects the public interest by setting standards. For example, if a professor wants to use a new AI tool for grading, the institution checks for legal and ethical issues, and the state provides the main data protection rules. Faculty can use the matrix in daily teaching by checking its guidelines to make sure their methods follow legal and institutional standards. This means being open with students about AI use, adjusting tools for different learning needs, and staying in regular contact with institutional leaders. The goal is to balance autonomy, accountability, and transparency.

Keywords: SMART Education; AI in education; legal framework; academic freedom; professor rights

1. Introduction

The rapid expansion of digital technologies in education has brought not only new opportunities but also significant legal and ethical challenges. Recent international reviews have underscored that the presence (or absence) of robust legal frameworks directly impacts the effectiveness and trustworthiness of AI-assisted pedagogy

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(UNESCO, 2023; Hernández-León & Rodríguez-Conde, 2024). In Eastern Europe, for example, universities that implemented clear data governance and faculty training protocols reported measurable gains in student engagement and workload efficiency (Kuzmin et al., 2024a; Kuklin et al., 2024). Meanwhile, Latin American and Asian institutions have demonstrated that performance improvements are sustainable only when aligned with transparent policies and regular feedback mechanisms (Peñafiel Arteaga et al., 2025; Wu & Xie, 2025).

Education works best when everyone understands their rights and responsibilities. Professors need to know what they are allowed and required to do. Institutions set the rules and keep things safe and fair. The state manages public education, sets laws, and protects basic rights. As AI and other new technologies change teaching and learning, it is more important than ever to be clear about each role, including how we work with private edtech companies.

Balancing the responsibilities of professors, institutions, and the state is essential. SMART Education is more than just adding digital tools; it is about using technology in ethical and practical ways that support effective teaching. Professors decide how to use AI in their courses and ensure standards are upheld. They have rights, such as ownership of their work and privacy, but must also act responsibly, communicate openly with students, and treat everyone fairly. Institutions set clear policies, provide staff training, protect data, and address issues as they arise. The state ensures access to education, prevents harmful uses of technology, and enforces rules for private companies.

International research indicates that when AI is integrated with proper governance, educational outcomes improve; when left unregulated, legal and ethical risks multiply. (Xie, 2024) In Western Europe, university-level studies reveal increased student engagement and the use of smart tools for evaluation and feedback, paired with growing concerns around privacy and bias (Alaswad, 2025) In Eastern Europe, institutional assessments highlight 15–20% performance gains and 25–30% reductions in teacher workload, yet raise flags over algorithmic governance and data regimes (Kuzmin et al., 2024a).

In Ukraine, AI usage in universities rose from 67.8% to 96.3%, improving student engagement (Kuklin et al., 2024). In Latin America, programs-especially in STEM—show improved retention and efficiency but call for stronger digital competence and institutional ethics (Peñafiel Arteaga et al., 2025). In Asia, both public schools and universities report knowledge transfer gains and workload reduction (up to 43%), with significant improvements in language and music

education outcomes (Wu & Xie, 2025). Singapore studies note enhanced awareness of ethical boundaries when generative tools are used critically (Lee & Low, 2024).

The main challenge is to protect professors' freedom and teaching quality, while letting institutions and the state do their jobs and support innovation. More rules or technology alone will not fix this. Everyone needs clear steps. Students should know when AI is used, grading should be transparent, and there should be clear rules for co-authorship, data, and consent.

Institutions must write these rules, train staff, and check if they work. The state should keep laws consistent, set minimum standards, and oversee vendors.

To illustrate, consider a scenario where a professor decides to introduce an AI-based interactive tool to assist in grading essays. The professor starts by ensuring the tool aligns with course objectives and consults with the institution's tech support to address any potential biases. They then communicate transparently with students about the new grading approach, including how their data will be used and protected. The institution supports this by providing training sessions on AI tools and updating the internal policy to fit this specific use.

Meanwhile, the state monitors compliance with broader data protection and educational standards, safeguarding both faculty autonomy and student rights.

Professors retain rights to dignity, academic freedom, privacy, and authorship, and are responsible for care, confidentiality, and fairness when using digital tools. Institutions select technologies, set criteria, protect data, provide training, and assess impact. The state guarantees education rights and academic freedom, restricts data use, and regulates edtech to protect the public interest.

This article introduces a legal-operational matrix for SMART Education that links professors' rights, institutional duties, and the state's role to real outcomes in learning and ethics. The model connects principles like dignity, academic freedom, and equity to practical steps such as procedures, indicators, and audits. Research shows performance gains of 15–41% and workload reductions of 25–43%, though results depend on the context. Implementation should be gradual and focused on quality. The model is based on experiences from different regions, without favoring any one. The main goal is a practical partnership between professors and institutions, built on clear rules, legal accountability, and transparency to get real results.

2. Theoretical, Methodological and Legal Foundations of SMART Education and the Innovative Professor

SMART Education is not just about adding technology to classrooms. It is about using technology in ways that last, are thoughtful and flexible, and lead to real change. Reviews show that long-term impact matters and that clear legal and operational guidelines are needed from the start. These goals are only possible with clear rules for professors, institutions, and the state.

The *professor*, as a person under civil law, has rights like dignity, privacy, reputation, academic freedom, and ownership of their own work.

These rights show up in daily teaching. For example, when deciding to use adaptive learning or AI tools, the professor can choose what fits the students, but must also make sure the tools match the course goals, fit the students' abilities, and avoid problems like bias or collecting too much data as highlighted by Lee & Low (2024) in the context of Asian higher education.

The *educational institution* organizes the learning environment. It turns ideas like academic freedom or data protection into clear rules and steps that everyone can follow. This includes keeping a list of approved tools, setting limits on their use, checking high-risk tools for problems, and making sure everything is open and can be checked. Polish and Ukrainian universities show that clear rules lead to better compliance and smoother adoption of digital governance. Everyone shares legal responsibility, but each has their own role. Professors need to use AI carefully and ethically. Institutions control the environment and decide what is allowed.

Technology *companies* must make sure their tools work, keep data safe, and have clear contracts. Contracts should say who owns the data, how security works, how to move data if needed, and what happens if a service end.

The *state* sets the main rules for quality, fairness, and how technology should be used in education. Comparative analysis highlights that both overly restrictive and overly lax regulation can undermine innovation and equity (Peñafiel Arteaga et al., 2025). The state also makes sure that schools follow the same standards so students are treated fairly everywhere.

When embedded in day-to-day operations, this tripartite model works. Professors provide clear guidelines in syllabi about technology use, including whether tools like ChatGPT are allowed and under what conditions. Institutions support them by offering role-based training, maintaining privacy-by-design protocols, and responding swiftly to incidents. Recent Latin American case studies show that clear

institutional policies and rapid responses to incidents increase trust and reduce conflict (Peñafiel Arteaga et al., 2025). States empower by mandating minimum standards and ensuring enforceable remedies for breaches of rights.

In the SMART model, legal principles and practical actions work together. Rights and duties are not just ideas; they shape how students learn. This chapter explains how to turn these rights and duties into clear, practical steps that everyone can follow and check.

This This study uses a practical and comparative approach to find out how AI affects higher education in real settings, while keeping legal, ethical, and professional standards. It looks at what works, under which governance conditions, in which contexts, and with what legal and operational safeguards relied on a selection of international studies published between 2019 and 2025, applying a strict inclusion framework:

- Studies had to be based on real classroom implementation (not lab-based or speculative).
- They needed to report learning outcomes (performance, engagement, retention).
- They had to include impacts on teacher workload (preparation time, feedback effort).
- Each had to contain at least one governance-related element: e.g., transparency, privacy, academic freedom, or policy compliance.
- Sources were required to have DOI identifiers or publicly verifiable links.

To illustrate the filtering logic and avoid regional bias, the dataset included balanced representation from four global regions: Western Europe, Eastern Europe, Latin America, and Asia. No single region exceeded one-third of the total dataset, ensuring geographical diversity. For a clearer understanding, consider two examples: one from Western Europe, where Hernández-León & Rodríguez-Conde (2024) conducted a study on AI in university assessment with strong privacy protocols-this study demonstrated the importance of integrating AI with proper governance to improve educational outcomes. Another is from Eastern Europe, where Kuklin et al. (2024) focused on national-level adoption metrics during a governance transition period, showcasing a practical classroom implementation that meets all our criteria.

The searches were conducted across peer-reviewed academic databases and public

indices using keyword clusters that aligned with our three analytical axes:

- Learning outcomes: student performance, engagement, retention
- Workload: teacher effort, instructional time, planning burden
- Governance: privacy, policy, academic freedom, institutional integrity Technologies were categorized as:
- Generative tools (text, image, media)
- Intelligent tutoring systems
- Adaptive platforms
- NLP and chat-based systems
- General classroom digital tools

Each selected study was analyzed using a standardized data template, capturing: country, educational level, discipline, tool type, research design, sample size, outcome change, workload impact, governance element, and source link. Quality control included evaluating methodological clarity, statistical reliability, and bias risks (selection, reporting, publication). Hernández-León & Rodríguez-Conde (2024) recommend this kind of multi–criteria analysis for robust cross-regional comparison. Studies with weak methodology were flagged but retained if they contributed contextual insight. Those entirely lacking governance or educational relevance were excluded. In cases where governance was absent or inconsistent, we observed greater variance in results, higher risk of student pushback, and ethical or legal controversies around data use and authorship. Importantly, we treated heterogeneity as a feature, not a flaw. Differences in context, tools, and discipline were mapped as plausible value intervals, not absolute truths. This allows the model to be adapted locally while retaining coherence globally.

The final dataset included 12 core studies (3 per region), with extended references for sensitivity checks. Examples include:

- Hernández-León & Rodríguez-Conde (2024): Western Europe, AI in university assessment, strong privacy protocols.
- Kuklin et al. (2024): Eastern Europe, national-level adoption metrics, governance transition period.
- Peñafiel Arteaga et al. (2025): Latin America, STEM programs, strong

institutional policy recommendations.

- Lee & Low (2024): Asia, ethical guidelines and critical thinking in GenAI usage.

All findings are traceable to the source. Indicator definitions (e.g., % performance gain, average prep time saved, policy compliance ratio) are reproducible and explicitly linked to studies in the bibliography.

This chapter lays the groundwork for the legal-operational matrix that comes next. The method is based on data, clear rules, and ethical principles.

3. Implementing the SMART Matrix: Comparative Case Studies and Lessons Learned

Applying the SMART legal–operational matrix in higher education settings is not a linear or uniform journey. Institutions face distinct legal environments, resource constraints, and cultural expectations, all of which shape how the framework is realized in practice. Recent comparative analyses show that such contextual adaptation is critical for sustainable digital transformation (UNESCO, 2023). The experiences of three universities–a Dutch public institution, a large urban university in Brazil, and a Singaporean technological leader–highlight both the diversity of approaches and the common lessons that emerge from this process.

In the Netherlands, the introduction of the SMART matrix was initially met with a mixture of curiosity and skepticism. The Faculty of Social Sciences agreed to pilot the approach, beginning with a requirement that every professor justify their choice of digital tools for each course. This process quickly revealed a wide spectrum of digital literacy among staff: some were already using sophisticated AI-based assessment platforms, while others had never ventured beyond the university's standard learning management system. The legal office responded by condensing its digital governance guidance into a three–page policy, written in clear language and accompanied by a checklist for tool approval. Professors appreciated the clarity, but several voiced concerns about the extra time required for compliance, especially during the first semester. Despite these challenges, by the end of the pilot, almost all faculty reported greater awareness of data privacy risks and a better understanding of their own responsibilities. Notably, students expressed more trust in the transparency of assessment criteria, and the university observed a 15% reduction in technical incidents affecting course delivery. This experience mirrors findings from

Central and Eastern Europe, where similar policy simplification led to better compliance and reduced disputes (Kuzmin et al., 2024b).

Meanwhile, in Brazil, the integration of the SMART matrix was shaped by both opportunity and necessity. The university's legal department, facing new national data protection regulations, saw the matrix as a way to systematize compliance. Implementation began in the School of Engineering, where the "minimum data" principle was prioritized. All digital processes were reviewed, resulting in the removal of two commercial platforms that were collecting unnecessary personal data. The university invested in faculty development,

offering a series of workshops and short online modules on digital governance and equity. These efforts not only increased technical knowledge but also fostered a sense of shared purpose among staff. Equity concerns were addressed by establishing a digital inclusion fund, which provided devices and connectivity for students in need.

Perhaps the most innovative aspect was the creation of a student advisory board that participated in monthly reviews of tool usability and fairness, sometimes challenging faculty assumptions and prompting meaningful changes. Such participatory governance structures have been recommended as best practice in Latin American policy analyses (Peñafiel Arteaga et al., 2025). The process was far from smooth; disagreements between the IT and legal teams delayed the rollout of several planned upgrades, and legacy data migration proved more complex than anticipated. Still, within a year, the university reported significant gains: transparency statements appeared in over 95% of course syllabi, and a survey showed that 82% of students felt better informed about how their data was used.

Singapore's experience offers a different perspective, driven by a national agenda of digital leadership and resilience. The university's adaptation of the SMART matrix was both top-down and collaborative. Quarterly "digital readiness" audits became standard practice, with each department required to demonstrate working fallback plans for all mission-critical digital systems. The university invested heavily in staff training, but also in the technical infrastructure needed to support mirrored content storage and rapid system recovery. Pilot projects focused on the impact of adaptive learning technologies in engineering and design, with faculty encouraged to experiment and report findings. One notable result was the discovery that adaptive simulations, when paired with well-designed process rubrics, led to a measurable increase in student engagement and performance in traditionally challenging modules. Asian case studies confirm that resilience is reinforced when

legal and technical safeguards are jointly prioritized (Lee & Low, 2024). Policy adjustments were made in real time, informed by both quantitative data and faculty focus groups. The collaboration between academic departments and the governance office was not without friction, particularly when it came to balancing innovation with the need for robust risk controls. Nevertheless, the institution emerged with a framework that allowed for rapid innovation while maintaining high standards of accountability and security.

Across all three cases, several overarching lessons are clear. The first is that context matters–legal mandates, funding structures, and student demographics all influence how the SMART framework can and should be implemented. Secondly, authentic engagement with both faculty and students is critical. Advisory boards and regular feedback mechanisms, while sometimes uncomfortable, are powerful drivers of continuous improvement and buy-in. This is consistent with recommendations from recent international reviews that emphasize the role of ongoing stakeholder feedback for successful digital governance (Hernández-León & Rodríguez-Conde, 2024). Third, compliance processes must be streamlined and purposeful.

Excessive paperwork or redundant documentation can undermine goodwill and slow progress, while clear, actionable policies and checklists support both innovation and accountability.

It is also evident that the SMART matrix is not a panacea. Each university encountered setbacks: technical glitches, miscommunication between teams, and initial resistance from staff uncomfortable with unfamiliar expectations. What distinguished the most successful implementations was not the absence of problems, but the willingness to adapt, learn, and respond to feedback in an iterative way.

In summary, these university comparisons show that the SMART matrix is flexible but also challenging. It gives a clear legal and operational structure, but its real value comes from local adaptation, open communication, and building a culture that values both independence and shared responsibility. As digital change speeds up in higher education, these lessons will be even more important for institutions that want to combine innovation with trust, fairness, and resilience.

4. The Legal–SMART Implementation Matrix

The Legal-SMART Implementation Matrix is not a static template but a living instrument for institutional governance. Its structure allows for adaptation to local

law, resource level, and educational mission, a flexibility that is essential for meaningful digital transformation. Many universities begin the process with a diagnostic: mapping digital tools and legal documents, while also surveying staff and students on their awareness of rights and obligations. Recent policy analyses recommend this kind of participatory assessment as a best practice for responsible innovation in higher education (UNESCO, 2023). Sometimes, this initial review uncovers gaps that surprise even experienced administrators. To empower faculty, an individual professor might initiate this diagnostic process by proposing a pilot program in their department. This could involve listing the digital tools currently in use, understanding the legal obligations associated with them, and discussing these points in a departmental meeting. By taking these first steps, professors can actively contribute to enhancing the digital governance framework of their institutions.

Sustainability, as the first pillar, is above all a legal and strategic concern. It requires that contracts for all educational technology include enforceable clauses on data portability, open standards, and exit strategies. Without these, institutions can find themselves locked into costly, outdated systems, with little recourse if a vendor changes terms or ceases operation. One Central European university, after years of ad hoc procurement, renegotiated every major edtech agreement to require full data export in open formats. This move, though time- intensive, paid off when a vendor suddenly went bankrupt—no data was lost, and the university switched platforms in weeks instead of months. Sustainable implementation means every choice is documented, risk is managed up front, and nothing depends on the memory of a single administrator. Empirical studies from Poland and Ukraine confirm that such legal safeguards are crucial for operational continuity and strategic autonomy (Kuzmin et al., 2024b; Kuklin et al., 2024). The matrix's operational layer is where legal clarity meets practice. Implementation teams are usually cross-departmental, bringing together legal counsel, IT, academic leadership, and sometimes student representatives. Their first task is to translate broad mandates into daily routines: short-form policies for staff, checklists for tool approval, annual reviews of all contracts and privacy notices. In some institutions, the most effective change was the smallest-adding a required "fallback plan" statement to every syllabus. This simple step, mandated by the legal office, made professors think through alternatives and communicate them to students, preempting confusion and complaints.

Mindfulness emerges as a legal obligation for transparency and a practical habit of participatory governance. The matrix requires that students be notified whenever their data is collected, processed, or transferred outside institutional systems. At a

large Latin American university, this led to the creation of digital rights briefings at the start of every course, supported by clear opt–out pathways. Faculty who initially resisted this "bureaucracy" later acknowledged that it reduced their liability and clarified expectations. Legal compliance here is not just about forms; it is about building trust, and it is enforced by regular audits and student feedback surveys. Such participatory governance and regular review are highlighted in recent Latin American research as key to building resilient digital cultures (Peñafiel Arteaga et al., 2025).

Of course, *adaptability* is not only a technical question but a legal one as well. Policies must be drafted with enough flexibility to accommodate new tools, urgent shifts (like a pandemic move to online learning), or changes in the law. In practice, this means creating standing procedures for rapid review and approval of new technologies, and ensuring that all faculty are aware of the process.

One North American university's matrix included an emergency "technology adoption protocol", which allowed departments to pilot new platforms for up to a semester, provided they filed a short risk assessment with the legal team. The result was not chaos, but a controlled environment where innovation was documented, and legal compliance was monitored from the start. This controlled flexibility reflects best practices recommended for adaptive digital governance (Wu & Xie, 2025).

Resilience is perhaps the most operationally demanding pillar. Legally, institutions must be able to show that they have taken reasonable steps to prevent and respond to disruptions—be they technical failures, data breaches, or even natural disasters. The matrix requires regular incident response drills, the maintenance of mirrored content, and documentation of every fallback plan actually tested. In one case, a ransomware attack at a European university forced a system-wide shift to paper and oral assessments for two weeks. Because the matrix required all fallback procedures to be reviewed annually, the transition–though disruptive–was orderly and documented, satisfying both internal and external auditors.

Transformation is the matrix's most forward-looking aspect. It mandates that technology is piloted, measured, and scaled only when it demonstrably closes gaps or improves outcomes. Legally, this requires clear consent, robust impact assessment, and equity audits. In practice, it means starting small, tracking results, and publishing both successes and failures for peer learning.

Throughout implementation, balancing autonomy and accountability remains a recurring legal theme. Professors retain their didactic freedom, but within a

framework: they must justify tool choices, provide alternatives, and document consent or dissent. This not only protects students but also shields faculty from personal liability. At some institutions, faculty unions have embraced the matrix's clarity, trading some procedural oversight for greater collective bargaining power and institutional support. The matrix itself is a living contract. It is reviewed every year in light of new laws, technologies, and feedback from all stakeholders. Metrics –such as the percentage of courses with technology declarations, staff trained in governance, or unresolved student complaints—are tracked not just for compliance, but to identify areas for targeted improvement.

In summary, the Legal–SMART Implementation Matrix is both shield and engine. It protects the institution from legal and operational risk and drives responsible, transparent, and adaptable educational practice. Its success depends not just on rules, but on culture: trust, documentation, practical adaptation, and shared responsibility for the future of learning.

5. Conclusions and Next Steps

Implementing the Legal–SMART Matrix shows that real educational change depends as much on culture and relationships as on technology or compliance. Legal frameworks and routines matter, but they support something deeper: a community built on trust, responsibility, and innovation. This is not a one-time achievement; it is an ongoing process that needs regular attention. As we move forward, I invite you to pick one policy or practice to audit using the matrix next semester. For example, you could check syllabus AI disclosure, make grading more transparent, or review data privacy practices to better use the matrix in daily work. By focusing on one area, you can turn reflection into real progress and help build a foundation for continuous improvement.

For professors, the matrix offers both protection and opportunity. By documenting choices, communicating with students, and talking regularly about digital tools, faculty reduce legal risk and strengthen their professional autonomy.

Where the matrix is fully used, many educators report more confidence, clearer boundaries, and better collaboration with IT, legal, and administration. The process is not always easy. Some faculty see new requirements as bureaucratic at first, but most come to see them as a safeguard for both teachers and students.

At the institutional level, the Legal–SMART Matrix turns compliance from a reactive, audit- driven task into a proactive tool for improvement. Schools and

universities that use regular feedback loops, like monthly SMART clinics, annual policy reviews, and open forums for staff and students, find that issues are caught and fixed early. This shift from compliance as control to compliance as learning shows maturity in digital governance. It also allows for targeted action, such as quickly moving resources to struggling departments or updating risk management after a close call.

Policymakers and regulators play a key role. They need to provide legal clarity and strong protections for academic freedom and student rights, while letting institutions adapt the matrix to local needs. The best policies set clear principles and let schools find solutions that fit their context. National and regional education authorities can help by offering legal templates, funding for implementation, and ways for institutions to share what they learn.

The key message is that digital transformation is a continuous process, not a final goal. As technologies, laws, and expectations change, the matrix should be updated and improved. Institutions that see this as a chance to grow, not a burden, are more likely to keep moving forward and build lasting trust.

There are real risks and ongoing uncertainties. The long–term impact of AI on learning and faculty workload is still not fully known. Differences in infrastructure, culture, and policy mean that what works in one place may need big changes elsewhere. Equity is still a major challenge: the matrix gives tools to track and address gaps, but closing them takes ongoing effort and investment. Risks like privacy breaches, algorithmic bias, and vendor lock-in must be managed with care and openness. Despite these challenges, the Legal–SMART Matrix

offers a strong vision for the future of education–one that is legally sound, operationally strong, and focused on people. Its greatest value is not in controlling technology, but in empowering people: giving teachers clear boundaries and support, giving students a say in how they learn, and giving institutions a steady path to keep improving.

In summary, the Legal–SMART Matrix is more than a checklist or a set of rules. It is a living framework that connects law, ethics, and daily practice to support trustworthy, fair, and future-ready education. Its success depends on working together, giving feedback, and being willing to adapt. In the future, the most resilient institutions will not be those with the most technology, but those best able to learn, listen, and lead through uncertainty.

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