Full Circle Edtech: Connecting Procurement, Practices, And People

A report by Anne-Marie Scott. Commissioned by the N-TUTORR National Digital Leadership Network

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Author biography

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Introduction to the National Digital Leadership Network Report Series

The National Digital Leadership Network (NDLN) is a collaborative initiative designed to support digital transformation across Ireland's Technological Higher Education sector. Established under the N-TUTORR programme with funding provided through the EU's NextGenerationEU initiative, the network was officially launched in November 2024 to provide a national platform for digital leadership and complementary knowledge exchange and strategic collaboration. While the N-TUTORR programme has now concluded, our network continues its work under the guidance of a steering board composed of sector leaders and external experts.

Digital leadership in higher education extends far beyond technical expertise or the adoption of certain tools and platforms: it's about vision, strategy, and culture change. Effective digital leaders ensure that digital strategies and developments align with institutional and national priorities, not only enhancing teaching, learning, research, and administration functions but also upholding academic values, promoting equity, and driving business innovation. In this context, the NDLN fosters collaboration among higher education leaders, policymakers, and practitioners, providing opportunities to share insights, explore emerging challenges, and develop shared solutions.

As part of its work, the NDLN has commissioned a series of horizon-scanning reports authored by leading national and international scholars and practitioners. These reports explore key trends at the intersection of digital innovation, traditional leadership and strategic planning, providing actionable insights to support higher education institutions in aligning these trends and related opportunities with institutional and national priorities. Covering topics such as the evolving role of generative AI in academia, data-driven decision-making, academic integrity, new models of learning and teaching and new ways to plan for financial sustainability, this report series offers timely advice and direction for higher education leaders navigating the interrelated complexities of the digital and post-digital age.

We extend our gratitude to the N-TUTORR programme for its financial support, and to N-TUTORR Co-ordinator Dr Sharon Flynn for her direction and continued support of the network. Thank you also to members of our national steering board and to our external contributors, in particular Professor Lawrie Phipps.

A big personal thank you in addition to my colleagues in the Department of Technology Enhanced Learning (TEL) at MTU -- especially Darragh Coakley and Marta

Guerra -- whose work has been vital to the preparation and publication of these reports. We are also very grateful to Dr. Catherine Cronin, our chief editor, and, of course, to all our authors whose insights, expertise, and dedication form the heart and foundation of this series.

We invite you to engage with these reports and join us in shaping the future of digital leadership in higher education.

Dr Gearóid Ó Súilleabháin
Department of Technology Enhanced Learning (TEL)
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Executive Summary

The increasing digitalisation of higher education institutions brings with it a range of new opportunities and risks. This report draws on international examples and best practices to synthesise the typical challenges and provide insights into potential solutions. This includes examining existing practices in educational technology acquisition and management within the public education sector, including procurement practices and the shift towards outsourcing and SaaS services. From there new challenges are explored, such as responding to external forces, managing new forms of risk, balancing efficiencies with educational quality, and maintaining diverse educational technology portfolios. The core of the paper presents various approaches to meeting these challenges and realising digital opportunities within the framework of financial sustainability and operational efficiency, including procurement approaches, management methodologies, strategic approaches to break down institutional silos, shared service models, and new accounting practices. The report concludes with key recommendations aiming to serve as a reference guide for institutions on their digital transformation journey.

Background and Context

The increasing digitalisation and digital transformation agendas within higher education systems over the last two decades have led to a substantial rise in the use of educational technologies up to enterprise level within universities (Burns, 2023; Porter et al., 2024; UCISA, 2022). The pandemic increased this significantly, and arguably the current artificial intelligence (AI) hype cycle continues the trend. As educational technology (or edtech) has become more central to the business of the university, and as society has become more digital in general, expectations around the use of edtech have changed. Where educational technology was previously deployed in smaller and more experimental ways, mostly focused on teaching innovation, in Ireland as in many places it has now become a mainstream part of the administrative infrastructure, supporting institutions to meet accessibility obligations, underpinning the controlled distribution of licensed learning resources (readings, lecture recordings, etc.), delivering administrative efficiencies around activities such as assessment, supporting the development of digital literacy skills, and enabling a range of flexible modes of learning and teaching in order to support more diverse student populations, increase access to education, and achieve growth.

A set of educational technologies that have become supported at scale within many institutions and could now be considered “enterprise edtech” include the Virtual Learning Environment (VLE), text-matching tools (sometimes also called “plagiarism detection” tools), and tools for the electronic management of assessment. These are often supplemented by lecture recording tools and/or platforms for managing and sharing multimedia. Around these core educational technologies there often sits a wider constellation of systems and services, including other enterprise services pressed into educational service (such applications within Office365 or Google Suite), ePortfolio and blogging tools, reading list management tools, and smaller more niche services designed for specific use cases or disciplines, often in support of action/problem-based learning. These smaller tools might include simulation learning, including AI[1] and AR/VR[2], computational notebooks, assessment technologies specific to areas such as computer science and mathematics, remote labs, and more. For security and efficiency purposes, and for ease of use, these services are often integrated with the VLE via technology standards such

[1]See Pratschke (2024) and Whittle & Ranson (2024), also in the National Digital Leadership Network report series, for further exploration of the use of AI in higher education.

[2]See Weller (2024), also in the National Digital Leadership Network report series, for further exploration of the use of AR/VR in higher education.

as IMS LTI or, less frequently, directly with the institutional student information system. External resources such as eBooks and other published content is also frequently integrated with the VLE via the same integration methods. Many of these services are also highly integrated with campus single sign-on solutions for security and ease of access.

With growth in the use of educational technologies have come several other shifts, most notably away from locally hosted and maintained solutions and towards the use of externally hosted Software as a Service (SaaS) arrangements. As educational technology, and the wider informational technology portfolio, become more integral to the way universities operate, requirements for service availability, cybersecurity, and business continuity have increased. A move away from owning technology as an asset to renting it from suppliers (Komljenovic, 2021) reflects an outsourcing strategy designed to meet these new requirements and reduce liabilities via the use of global-scale cloud computing infrastructures. These arrangements respond to low appetites for risk, as well as demand for a certain quality of user experience. However, they also introduce new issues, not least of which is the movement of costs for educational technology from being capital expenditures (assets) to ongoing operational expenses (liabilities), as well as the transformation of educational institutions into assets for external monetisation through these new platforms and their suppliers (Williamson, 2024).

With their adoption at enterprise level, the overall costs of educational technology (and information technology more generally) have also increased, and public sector procurement requirements become an important consideration. In the Irish context, the Education Procurement Service (EPS) within the Office of Government Procurement is responsible for ensuring that procurement for contracts with a value of above €50,000 delivers "maximum value for money, adheres to government policy, national guidelines and EU directives for procurement, while providing a sustainable delivery of services for the taxpayer" (Education Procurement Services, 2018).

As educational technologies have grown in their use, there has been an attendant rise in joint-purchasing consortia, either organised at regional level (as in the UK), national level (as in Ireland), or between groups of institutions as a form of membership organisation (as in the United States or Canada). Additionally, sector level organisations such as national research and education networks (NRENs) have stepped into this space to become brokers between vendors and institutions. In all cases, the intention is to use sector-level power to negotiate more advantageous contract terms and pricing for goods and services that a significant number of institutions all purchase. In many cases, agreements are also put in place between consortiums to share or access one another's frameworks, enabling a deal negotiated by one consortium to be accessed by institutions in another: for example, HEAnet, the Irish NREN, can access some procurement

deals brokered by the European NREN GEANT. In the educational technology space, the first joint procurement framework that tends to appear is for VLEs, and Ireland is no exception, with a framework in place via HEAnet (2023) along with a range of library services frameworks available via EPS.

At the same time, as the use of educational technology has grown within institutions to enterprise level, and become central to ideas of digital transformation in Irish technological university (TU) education (Cronin et al., 2024), a growing body of critical educational technology research highlights that there are significant new risks emergent beyond cybersecurity, availability, and cost (Weller, 2020). Some of these risks include the influence of economic actors, the extent to which educational technologies can invade privacy or perpetuate bias and inequality (Macgilchrist, 2021; Williamson, 2022), and the intersection of edtech with the climate crisis (Facer, 2020; Selwyn, 2021). In the report by the TU Research Network, and in the various strategic plans and policies that exist within the TUs, the use of educational technology is largely framed as an enabler, helping institutions realise their objectives around access, inclusion, accessibility, flexibility, digital skills acquisition, and innovation in learning and teaching. While this certainly can be the case, these emergent new risks can have material impacts on the quality of learning and teaching, as well as financial and operational impacts.

A digitally mature institution, as those in the Irish TU system are mandated to become, therefore includes not just the acquisition and usage of a variety of technologies across all areas of the institution, but also the ability to plan for and manage a dynamic and complex ecosystem of technologies, integration interfaces, operational costs, risks, contracts, external brokers, and suppliers, all within a holistic vision that prioritises the student and staff experience (THEA, 2022) and the strategic mission and goals of the institution. To accomplish this requires a skilled workforce with a range of specialist expertise working collaboratively within strong policies and procedures, and a nuanced understanding of the new challenges and risks that this complexity introduces.

This paper focuses on two intersectional areas of challenge and opportunity that the mature digital learning institution faces with regard to the management of educational technologies, along with suggestions drawn from practice elsewhere as to how they might be negotiated. It gives significant attention to the practice of educational technology procurement as an important but overlooked area of activity often seen as outside the scope of digital education practice, re-casting it as a quality assurance concern and highlighting the need to adopt ethically informed practices. Recognising that procurement is one step in the wider process of making educational technologies available within institutions, the paper then gives consideration to how ethically informed approaches can support sustainable and efficient operations.

Edtech Procurement: Quality Matters

Irish TUs are challenged to deliver a

> a seamless digital experience across a variety of learning environments, whether they be on- or off-campus, part- or full-time, through various modes of delivery including online, blended, distance and work-based learning, using state-of-the-art learning technology. (Technological Universities Research Network, 2019, p. 31)

and to "...match pedagogic innovation with robust quality assurance." (Technological Universities Research Network, 2019, p. 15). Additionally, the mandate to be deeply learner-centred and inclusive, supporting a wider variety of learners in accessing education over a lifetime, recognises that learning will be highly contextual and strongly informed by purposes and values. These combined requirements for the TU system underscore the reality that educational technologies and pedagogical approaches are entangled with each other in complex ways (Fawns, 2022) and the educational technologies available will materially affect learning and teaching possibilities and vice versa. The 2024 Education International report *Behind the platforms: Safeguarding intellectual property rights and academic freedom in higher education* identifies that "A platform's technical affordances impact academic practice. They enable a particular kind of structure, social relations, communication, etc." and "the structure and functionality of platforms shape, enable or restrict the pedagogic possibilities of educators in their teaching, and changes in functionality can consequently impact their teaching practices" (Williamson & Komljenovic, 2024, p. 40). It stands to reason then that the educational technologies chosen by institutions, as well as how they are procured and by whom, becomes a matter of educational quality assurance, and consideration of this should be included in the requirement to build "a new quality culture" for institutions (Technological Universities Research Network, 2019, p. 15).

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Experience over the last decade, however, shows that there are several areas of quality assurance and reputational risk that are particular to the increasing digitalisation of education and the increased use of educational technologies. These are explored below.

Edtech is Big Business: Vendor-Related Risks

An immediate and significant pressure on quality assurance can come from educational technology vendors themselves. The educational technology space has for a long time been a site of significant venture capital speculation, with market research and analysis companies supporting the direction and flow of capital (see, for example, HolonIQ). This creates an educational technology landscape that is strongly driven by the need to realise a return on investment in addition to delivering an attractive and useful product for institutions. Market-making activities, including a significant amount of hype around various products and narratives that educational technology brings with it competitive advantage or increased efficiency, have become commonplace. However, the ten-year low in educational technology investments seen in 2024 reflects a market that can be characterised as having over-promised and under-delivered, reflecting that the "intentions of financial investors are necessarily not the same as those of educators, governments and students" (Facer, 2021, p. 7).

Even educational technology products and services that are now thought of as long established and stable like VLEs have been through several rounds of buying and selling over the past decade as well as an amount of market consolidation, with their parent companies moving in and out of public/private ownership alongside the usual rounds of investment and asset-stripping that such movement creates. As venture capital funding has switched into the AI space, and new AI-powered educational technology products are marketed to institutions, the need to develop a healthy level of critical thinking – as well as the need to carefully examine the claims made for products and services and understand the motivations and drivers of potential suppliers – has never been more necessary.

Additionally, market-making behaviours and hype cycles noted above drive a sense that cutting-edge technologies are a prerequisite requirement for pedagogical innovation. However the recent rise of generative AI technologies is shining a harsh light on the environmental costs and impacts of such technologies, and this is yet another area where there is scanty evidence that their use can improve learning outcomes. Critical educational technology scholarship has for several years been highlighting the gaps between the climate crisis, environmental sustainability, social justice (Facer, 2020; Selwyn, 2021), and the use of educational technology. In the context of Ireland's Public Sector Climate Action Mandate 2024 and the associated Green Public Procurement strategy (Department of the Environment, Climate and Communications, 2022), consideration should be given to how to find the optimum balance of educational technology use, potentially starting with the question of how much educational technology is too much?

Edtech is a Risky Business: Edtech Users and Legal Risks

Beyond the direct pressure that might come from the vendor and supplier marketplace comes a new set of risks associated with the use of some educational technologies themselves. These can include issues around data protection and privacy; the unintended impacts of automation and bias in data-driven decision-making[3]; the monetisation of student or academic labour; the extent to which educational technology platforms can constrain academic freedom; the accessibility of technologies in terms of their user interfaces or requirements for bandwidth and device capability; or simply the ability of educational technologies to meaningfully address larger societal inequities. Poorly designed and implemented educational technologies can pose significant risks to equity and inclusion. Cultural biases embedded within systems can alienate or exclude students from diverse backgrounds, and automated and algorithmic decision-making in educational technology can perpetuate existing biases and unfairly impact students from marginalised communities. Some issues around data protection and privacy can be mitigated using privacy impact assessment and robust cybersecurity requirements and standards, and likewise accessibility audits can be carried out. However, where learning is happening off-campus, where externally provided SaaS solutions are used, or where students learning is being captured and measured in new ways (via data or automation), there is a need for further evaluation of risks.

Poorly designed and implemented educational technologies can pose significant risks to equity and inclusion.

As an example, the pandemic saw an increased use of remote proctoring technologies, with students frequently being asked to allow surveillance of their personal and home space along with constant biometric scanning of their facial expressions. Since then, students have brought petitions and lawsuits against their institutions for the use of these technologies on the basis that they invade privacy and encode bias against people of colour and the disabled, and several complaints have been brought in what are seen as important test cases. In the United States, a case against Cleveland State University was upheld by a federal judge on the basis that the scanning of rooms done by remote proctoring technology constituted an “unreasonable search” and violated privacy (Young, 2022), and in the EU a French administrative court suspended the use of proctoring technologies by an educational institution because the surveillance required was “unreasonable and excessive” (Gullo, 2023). Where the use of an educational technology has the potential to create harm or distress to students, it is becoming clear that they will take action.

[3]See Pope, Woodworth, and Xiong (2024), also in the National Digital Leadership Network report series, for further exploration of data-driven decision-making in higher education.

Similarly, in the Netherlands, the Dutch Data Protection Authority identified high privacy risks associated with the use of Google’s Workspace for Education, based on the level of telemetry activities being carried out with user data (Veale, 2022). Leadership across the primary, secondary, and tertiary education system took action, threatening to withdraw from use of the service, and negotiated a contractual amendment that limited Google’s collection and use of data. This contract amendment is only available to users of Workspace for Education in the Netherlands and has not been extended to other jurisdictions. While this is a headline example, the potential for monetisation and future unknown uses of this kind of data collection has been identified as a more general educational technology issue (Williamson & Komljenovic, 2024). Where the use of an enterprise technology in education has the potential to invade user privacy or collect an inappropriate amount of data, it may take the intervention of a regulator and concerted action at national level to resolve.

Beyond the risks of legal action from students or regulators for the use of educational technology, another new risk has appeared in the form of legal action against individuals by vendors of educational technology for critique that they perceive as negative. The most frequently cited example is that of Ian Linkletter, a former staff member at the University of British Columbia in Canada, who in 2020 was successfully sued by a remote proctoring company for sharing information about how the system worked. Subsequently, Linkletter, an academic trying to publish research on proctoring technologies, found it harder to publish in education journals, noting that “Despite the relatively prosaic nature of educational technology as a field of study, online proctoring was a contentious topic to be researching during 2020” (Selwyn et al., 2021). In general, this form of risk is less likely in so far as there is a reputational risk for any educational technology vendor who pursues this form of action. Still, experience shows that it cannot be dismissed out of hand. Where it does occur, the knock-on effects can be deeply problematic, and where academic research into the use of educational technology within our institutions is “chilled”, it should be regarded as a very serious quality assurance issue.

Ethical Procurement Practices and Expertise Gaps

Universities have a strong culture of ethical review and assessment in research activities as part of quality assurance standards, but the same kinds of assessment practices are

not often evident in decision-making in the operations of institutions, and it is becoming clear that the risks are only increasing by not having such practices in place. With the recognition that choices made in the selection of educational technology are both an educational quality assurance matter and have the potential to introduce a new range of institutional risks comes a need to reconsider the practice of educational technology procurement and its intersection with ethical review and assessment.

As noted earlier, public sector procurement is typically a set of activities designed to promote principles of good practice, including fairness, transparency, deterring anti-competitive behaviour, and ensuring public money is spent wisely. These principles are common to public sector purchasing activities in many parts of the world and most often are put into practice using Requests for Proposal (RFP) and open tendering (public advertisement of contracting opportunities). An RFP will typically contain background information on why a solution is being sought, as well as functional and non-functional requirements, and clear evaluation criteria such as weightings between product quality and price. Procurement activities are also often informed by local policies, such as those that promote buying from companies with ethical trading or labour practices (e.g. eliminating modern slavery practices from the supply chain or extending a preference for marques such as Fair Trade) or environmental sustainability (e.g. the Irish Green Public Procurement strategy). However, beyond "green IT" issues and mandatory consideration of accessibility, there is little intersection between ethical consideration and procurement practices in the information technology space, including for educational technology. However, that ethically informed approaches exist in other areas of procurement activity strongly suggests that these better approaches are not just required but also possible.

In addition, procurement activities tend to centre technological rather than educational expertise. New mechanisms for assessing the claims made for educational technology products and their potential harms and benefits are now necessary, as well as ensuring that institutional procurement strategy and execution are informed by sufficient expertise in digital pedagogy, issues of equity and inclusion, and the marketplace including the various suppliers and their corporate strategies. However, educational technology procurement is not always recognised as being within the scope of professional practice for learning technologists or academics; procurement activities are typically planned and led by IT departments, with other stakeholders playing for the most part a participating role defining functional requirements and scoring potential suppliers, and direct student engagement in the process is often entirely absent: "It is rarely the case that educators themselves have a choice about the procurement or implementation of the platforms that will structure their teaching,

despite the potential effects on their academic freedom to teach" (Williamson & Komljenovic, 2024, p. 12)

With the understanding that educational technology is not just a tool, but is entangled with pedagogy, along with the values, purposes, and contexts of educational practice must also come the recognition that the creation of a RFP document – and in particular the functional and non-functional requirements – is a complex translation process, where the subjective and variable concerns of educators and students need to be translated into objective requirements that can be easily scored. This is a very poorly understood area of activity and contains a significant danger of defaulting to what is easy to measure rather than grappling with its complexity (Scott & Gray, 2023). Equally, there can be significant risk to an institution in tendering for a product with a set of requirements that do not reflect the state of the art or the market, as it could bias the outcome too far away from quality and towards price. Therefore, the role of the learning technologist in this space – as someone who understands both the vendor marketplace and the concerns of educators and students – becomes crucial in terms of attempting this translation process and managing risks and expectations.

Finally, where sector-level frameworks are being negotiated, institutions are obliged to use them and would need an extremely strong justification for stepping outside their boundaries: for example, a significant and material functional requirement that no existing supplier could provide. This makes it even more important that the right kind of decision-making frameworks and expertise are embedded within procurement processes, as the products and services selected within these frameworks will proliferate across the sector and change after the fact becomes near impossible.

Potential Responses

Surfacing the Gaps with Assessment Frameworks.

A number of organisations have begun to respond to these challenges by developing evaluation frameworks that can be used to assess where specific risks and challenges might lie. Understanding the scope of the issue is an important first step in developing appropriate responses, and these frameworks go some way to countering prevailing narratives that technology will result in good outcomes with no mention of potential harms.

The Association for Learning Technology (ALT) in the UK has developed the Framework for Ethical Learning Technology (FELT), which is a reflective tool that can be used to interrogate professional practice and prompt attention towards areas of

concern (ALT, 2020). The framework was developed by a working group of around 120 members of the association, and it draws on a selection of relevant policies and resources identified as part of the work. It is designed to be agnostic of any national or legal context and to cover a broad range of practices. The selection of supporting resources provides good examples of model or foundational policies. The tool is centred around four areas of professional practice – awareness, professionalism, values, and care and community – and each area includes guidance on what good professional practice looks like. The framework is then accompanied by several reflective tools that can be used by individuals or groups to assess a tool or platform, a policy or process, a project, or a particular aspect of work. Within that context, a short document steps through consideration of alignment of current practice and gaps within each area of practice.

Overall, the framework is well aligned with the values and aspirations of the TU sector, though some additional work to develop TU-specific guidelines for edtech use (or a TU-specific reflective tool) would make those connections explicit. One gap relevant to the Irish sector is that the framework does not explicitly ask for consideration of environment sustainability concerns.

Similarly, the Civics of Technology project has designed three approaches to conducting an educational technology audit, including a techno-ethical audit, a discriminatory design audit, and five critical questions to ask about the technology (Civics of Technology, n.d.). These approaches are again grounded in supporting resources and literature and are designed to prompt reflection. They have been developed in a North American context and as such reflect some overlap with the kinds of questions that might be prompted by accessibility of data privacy impact assessments in an EU context. However, the techno-ethical audit approach in particular prompts wider questions around environmental impact and business practices. Also, in a North American context, the choice of whether to use a technology or not can be more of an individual academic choice, and so these frameworks are framed as being for individual staff and students and for consideration of a specific technology. Many of the questions could be applied to a class of technologies however, such as the use of lecture recording, remote proctoring, or automated assessment tools.

Overall, these frameworks are narrower than the FELT approach, but the more targeted and specific questions about technologies may prompt better responses for those less well versed in the ethical issues associated with educational technologies.

Finally, in British Columbia, an Ethical Edtech Toolkit is currently being developed by the Ministry of Post-Secondary and Future Skills in collaboration with the tertiary education sector as a recommended action within the provincial Digital Learning

Strategy (Digital Learning Strategy – Province of British Columbia, 2023). The Ethical Educational Technology Working Group has so far performed an environmental scan of supporting resources and created an evaluation approach for reviewing the resources and is currently co-creating a toolkit for use within institutions to identify and assess ethical concerns. The toolkit deals with legal compliance issues as well as wider ethical concerns. The toolkit was tested with members of the British Columbia education sector at the British Columbia Digital Learning Strategy Forum in November 2024. This work is ongoing and will be published 2025.

This toolkit is notable as a sector level response that has been identified as strategically important within a wider Digital Learning Strategy that shares similar aims to the establishment of the TU sector, including equity, inclusion, and greater access to education.

Covering all the bases with Policies

Incorporating ethical review and educational technology assessment practices within the constraints of public sector procurement must also include the use of institutional policy. Being able to ground an ethical procurement approach or relate specific functional and non-functional requirements in an RFP to meeting specific policy objectives is important in terms of demonstrating good practice and being clear as to why vendors are required to respond.

Broad concepts of what “good education” looks like may be expressed within institutions in the form of goals and objectives in the overarching strategic plan, learning and teaching strategies or policies, and sometimes specific digital education or technology-enhanced education policies. Some institutions encapsulate ideas of “signature pedagogies” within learning frameworks, education models, or institutional learning outcomes. Such artefacts are often then supported by other policies such as equity and diversity, accessibility, and more recently the use of AI. As noted previously, educational technology is usually framed as an enabler in these contexts. However, by only considering the positive potential of educational technologies we may be deliberately overlooking gaps in the policy landscape which if addressed could significantly support improved ethical educational technology acquisition and usage, and ultimately meet wider strategic goals around transformative educational experiences, as well as equity, diversity, and inclusion.

While there has been a steady growth in the development of ethically informed learning analytics policies over the last decade or so, combined with a strengthening of data protection policy and practice, relatively few institutions have mature, broad

policies specific to ethical data practices across their operational activities. Two policies that stand out globally come from institutions that were early practitioners of applied research in the learning analytics space. Each is notable not just for the scope of the policy and the principles-based approach taken, but for the use of ethical impact assessments and the establishment of advisory/oversight groups. In both cases legal compliance is a floor limit, not a ceiling for ethical practice.

In 2014, the Open University of the UK was among the first globally to develop its "Policy on ethical use of student data for learning analytics". The original policy detailed how the institution collects and uses student data to improve learning outcomes and provide targeted support. The policy was built around eight key principles that emphasised ethical practice, responsible data use, student privacy, and transparency with regard to how analytics are employed. A core focus was using learning analytics to proactively identify opportunities for intervention to help students achieve their study goals, while ensuring students are not solely defined by their data. This policy was superseded in 2023 with a broader "Data ethics policy" (Open University UK, 2023) no longer limited to learning analytics but remaining rooted in ethical operational practice, retaining a focus on providing value and insight while minimising potential harm. The new policy applies to all data collected through university operations, including personal data and activities involving AI and machine learning, particularly when used to drive actions targeting specific individuals or groups. Four key principles underpin the policy: transparency in making processes open to inspection, accessibility in explaining data usage in understandable terms, accountability through effective governance mechanisms, and fairness in balancing impacts across individuals and groups. A standout feature of this policy is the emphasis placed on requiring ethical impact assessments for data projects and maintaining oversight through a Data Ethics Group, which has the authority to grant or withhold favourable opinions on data use proposals. The policy explicitly excludes data collected solely for research purposes, which falls under a separate research data ethics process. The implementation also includes requirements for staff training, compliance monitoring, and potential disciplinary action for policy violations.

The University of Queensland in Australia developed their Enterprise Data Ethics Framework in May 2022, providing a consistent institution-wide approach for the ethical use of data, again specifically focusing on non-research data usage. The framework is built around seven key ethical principles that govern data handling: purpose and balance of benefits/harms, transparency and stakeholder trust, informed consent, harm minimisation and bias reduction, privacy protection, legislative compliance as a minimum requirement, and accountability for ethical data use. A key feature of the framework is

the establishment of clear roles and responsibilities across different levels, from the Information Trustee (Vice-Chancellor) down to Information Consumers, with specific accountability at each level for ethical data management. Notable aspects include the requirement for Information Stewards to approve data collection and use activities, and the establishment of an Ethics Advisory Group for complex ethical matters. A significant feature is the integration of ethical considerations throughout the entire information life cycle, with specific guidance for each phase from planning and design through to disposal or destruction. The policy is supported by practical tools, including a Data Ethics Risk Assessment Tool, and provides clear escalation paths for addressing ethical concerns through the Ethics Advisory Group.

Using Standards for Better Assessment of Edtech Claims.

Research into public sector procurement in general and educational technology procurement specifically is a relatively sparse area, but it has been expanding in the last few years. While focused on the school sector in the UK, the working paper Edtech procurement matters published by the London School of Economics (Hillman, 2022) identifies several important findings that are equally relevant to the procurement of educational technology in higher education. These include:

- Education stakeholders need a standard to understand and choose edtech products with ease
- There is a lack of benchmarks and standards across the edtech sector at national levels
- Unregulated market increases the liability risks for schools
- Roles and responsibilities with regards to edtech products remain unclear
- Schools do not necessarily have the expertise, and they cannot always afford it
- There is a need for all edtech companies to adhere to commonly agreed policies, terms, and conditions within national contexts
- Edtech products should be licensed to operate in educational institutions

Each of the findings needs to be fully addressed by action at sector level nationally or internationally, however there are activities underway in different jurisdictions which may provide some paths to follow.

In considering the use of standards, a 2024 paper evaluating educational technology procurement practice in the Canadian tertiary education sector identifies that "standards related to Privacy and Security, Accessibility, and Care of Data Practices play a larger role in EdTech procurement within most institutions. The use of standards

is increasing as institutions become more centralized" (Ali et al., 2024, p. 1). This aligns with practice observed in some UK institutions which have encoded institutional or regulatory compliance requirements in sets of standardised questions that can then be tailored and included in functional and non-functional areas of an RFP. These usually cover practices such as enterprise architecture alignment, cybersecurity, accessibility, etc. While typically not published, and again under-represented in any research to date, this practice is not uncommon and might be easily extended to areas of ethical concern, creating sets of model questions and answers that can be re-used consistently across procurement activities within an institution. Such questions might include the extent to which product claims are underpinned or validated by research, how any automation or algorithmic decision-making is developed and tested to ensure it remains free of bias, or the extent to which students are consulted with or have a voice within the product development processes.

> the extent to which product claims are underpinned or validated by research...

Going one step further and sharing such question sets across institutions, or developing them collaboratively at sector level, would also go some way to recognising the issues of differing levels of expertise within institutions and the "lack of benchmarks and standards" at national level. Combining this approach with existing sector level procurement practices would address issues around edtech companies adhering to "commonly agreed policies, terms and conditions within national contexts", and would bring the Irish sector closer to encoding some of the good practice and sector level power evident in the Netherlands and its approach to using Google's Workspace for Education, as previously mentioned.

In the spirit of movement towards licensing schemes for educational technology, and taking into account again the notion of standards for selection, organisations such as EdTech Impact have created platforms that collate and share evidence-based peer reviews and ratings of educational technology products. The Edtech Impact platform provides independent evaluations, user reviews, and impact data about various educational technology products. Their system includes detailed assessments of educational outcomes, cost-effectiveness, and user experiences within a database of thousands of solutions that schools can search through based on their specific needs and requirements. Similarly, Education Alliance Finland has created a pedagogical certification scheme for educational technology, where teachers can assess technologies against their defined standard by navigating a searchable online database categorised by the

different areas/levels of the education system. In the United States, the nonprofit International Society for Technology in Education (ISTE) has also created their ISTE Seal certification scheme for educational technologies that align with their standards on pedagogical best practice, with products able to display a badge on their website to affirm accreditation. In all the cases, the bias of these schemes is towards the school sector, not higher education, but they outline possibilities that could be pursued.

Building Institutional Capability.

Successfully adopting variations on the potential responses outlined above relies on having appropriate institutional skills and knowledge available, and especially on reconceptualising procurement as a skill and practice within the scope of learning technology professionals. The research gap around educational technology procurement means that it is hard to quantify where and how learning technologists – and other stakeholders such academics and students – are typically involved in procurement. The little best practice advice available suggests that they should play a substantial role (Krueger, 2019; Scott & Gray, 2023; Williamson & Komljenovic, 2024), but anecdotal evidence suggests that practice is patchy and highly variable. What is clear is that if learning technologists are to play a stronger role in procurement, potentially leading activities along with procurement professionals, appropriate training and resources on topics such as developing an understanding of ethical practice, surveying the edtech marketplace, undertaking stakeholder analysis, or planning a procurement strategy are required. General purpose procurement training and advice tend to be available that cover the need for transparency, fairness, etc. already discussed, but, so far, no specialist training for edtech procurement has been identified. While this is a gap rather than a response, it is an opportunity that the TU sector should consider taking advantage of.

Drawing on the much wider practice of co-creating curricula with students, consideration should also be given to the potential for co-designing services directly with academic staff and students. A 2018 paper outlines the potential opportunities and challenges of using co-creation strategies for the development of learning analytics solutions (Dollinger & Lodge, 2018), and a conference report also from 2018 briefly outlines the experience of co-designing a lecture-recording service with students at the University of Edinburgh (Scott & Nanfeldt, 2018). While examples of co-designing educational technology services remain scant in education, the practice of co-designing services in general is well documented. Again, this is another space that offers potential opportunities.

From Ethical Procurement to Sustainable Practice

Understanding and addressing the risks associated with educational technologies by elevating the practice of ethically informed procurement is the start of a journey, not the end. Many of the risks identified in the earlier sections occur in operational practice. As such, aside from selecting the right product and vendor, how educational technologies are managed and supported over the lifetime of their use is important for engaging in ethical practice, operational efficiency, and financial sustainability. While there can be a perceived tension between these three areas, the reality is that by understanding ethical practice as an aid to quality assurance and a risk mitigation strategy, it becomes evident that a direct line can be drawn to improvements in operations and financial costs. Similarly, it is necessary to embrace the implications for internal working relationships, management practices, and new professional knowledge, as a site of new possibilities that can contribute directly to developing institutional capacity and realising new opportunities.

Caring for Complex Technological Ecosystems

The reality of a mature educational technology portfolio brings with it the need to be constantly attentive to a complex ecosystem, and, while individual suppliers are responsible for their specific products, the design and integration of the full portfolio is an institutional responsibility. Operational efficiency and financial sustainability of this complex ecosystem includes managing the performance of multiple multi-year financial contracts, negotiated both locally and at sector level; digesting, synthesising, and acting upon information from multiple suppliers about roadmaps for change and the evolution of their products; and gathering insights and feedback internally and externally to influence supplier product development where possible. This highlights the need for cross-functional working across procurement, educational technology, information technology, and other professional areas, as well as strong two-way relationships with academic staff and students.

As an example, many suppliers now offer continuous improvement models with regular small updates to their systems instead of larger and less frequent upgrades. While this can be less disruptive and ensure a more proactive response to bug fixes and new feature requests, it also means that there is a level of constant change to be managed by the institution. In order to reap the full benefit of the investment that has been

made, an educational technology must have its release notes and responsive configuration and integration management proactively monitored by combinations of educational technology and IT colleagues. Where technologies are deployed in physical spaces, this may require audiovisual or facilities colleagues to be involved. Moreover, educational technology professionals should regularly communicate and consult with academic staff and students to understand the impact of changes, ensure that decisions to enable new features are well informed, and see that users are well supported when change happens. Similarly, procurement, educational technology, and IT professionals must work together to ensure that suppliers deliver to the standards defined in contracts and are responsive to institutional needs, and must regularly gather data about service performance, supplier attentiveness to bug fixes and feature requests, and impact of product change. Awareness of the wider marketplace that any supplier operates within by educational technology and IT professionals is also important for understanding performance e.g. the extent to which suppliers are investing in innovation compared to peers, or where market consolidation or fragmentation is happening.

All of this work is in addition to the regular business of supporting academic staff and students in making best use of educational technologies, and it implies the need for a clear and shared understanding of individual roles, responsibilities, skills, and competencies within a holistic management framework.

The Costs of Success

Where digital transformation ambitions include the use of educational technologies to support growth in student numbers, a new area to be managed can also appear in the impact of success on operational budgets – especially where educational technologies are priced based on active users – or where costs are substantially driven by user behaviour (such as streaming media and storage). The knock-on effects of this can be a tendency to prioritise the use of educational technologies that deliver efficiency savings, as their costs can be offset against savings made (usually in time or salary costs); to limit the use of educational technologies to certain use cases; or to limit the acquisition of new educational technologies in general. Being mindful of the costs of systems proliferation in general strongly aligns with the aspirations to environmental sustainability already mentioned, as well as containing the ancillary costs of managing and supporting technologies. Beyond managing licenses and systems integration there is always the cost of supporting students and staff to make best use of any new technology, or accommodating the costs of supporting a poor technology choice or an unreliable supplier. However, when cost containment in the form of efficiency savings – or when denying the choice of a preferred supplier in the interest of efficiency savings – becomes

a dominant measure or concern, this can obscure some of the other risks identified earlier, as well as compromise less-tangible benefits related to innovation in learning and teaching or enabling greater access and inclusion. Finding the optimal balance by accepting some inevitable proliferation and overlap in functionality between systems to meet needs, and by identifying the right suppliers to work with, is a constant process of negotiation and proactive management.

Finding the optimal balance by accepting some inevitable proliferation and overlap in functionality between systems to meet needs...

Potential Responses

Sharing Platforms Across Learning and Teaching, Research, and Public Engagement.

In the same way as other enterprise technologies have been pressed into service in learning and teaching – most notably tools like the Office365 suite – consideration should be given to where technologies bought primarily for educational purposes can be more widely shared across other domains of institutional activity, for example, research and public engagement. In practice, the lines between learning and teaching, research, and public engagement are blurry, and with the aspirations not just to digital education, but to research strength as well, and with connections to wider regional communities this is an approach that is highly relevant for the TU sector.

A very common use case found in many institutions already is simply to use the existing investment in the VLE to support staff training and professional learning as well as academic activities. Likewise, investments in lecture-recording technologies in classrooms make it easier to capture research seminars and speakers as well as classroom lectures, and shared media asset management systems make it easier to embed the same media assets into a range of platforms including the VLE, blogs, social media, university websites, and more. The scenario where a recording of a research talk could be simultaneously an item of learning and teaching content, a research project output, and a publicity artefact is not hard to imagine. In general, the ability to appropriately license and share media content across all the domains of activity within a university can be an incredibly powerful use case. Another immediate example that has become more

common in recent years is blogging platforms. In a number of institutions, the impetus to offer a blogging service initially came from learning and teaching use cases, but the potential for providing a web presence for research projects, student societies, academics building their professional profiles, and corporate personalities was recognised very soon thereafter. Notable examples include UBC Blogs at the University of British Columbia in Canada, RamPages at Virginia Commonwealth University in the United States, and Blogs.ed at the University of Edinburgh in the UK.

Anticipating this wider range of use cases from the start and ensuring alignment through procurement and implementation as well as with policies, practices, and systems across the breadth of these activities has the effect not just of ensuring maximum value for money from any investments in educational technology, but also of building greater understanding and tighter working relationships between people working in these areas.

Sharing Platforms Externally for Flexible Resourcing and Community.

Beyond sharing services across domains of activity internally, or procuring services at sector level externally, another consideration is whether there are use cases for setting up shared educational technology platforms among groups of institutions with the same needs as an efficient and sustainable approach. In this scenario, a single technical instance of a platform is hosted either by a commercial third party or within a lead institution, and all institutions contribute to the costs of running the platform. This is a less typical use case than simply procuring a platform from a third-party vendor, but it has proved effective, especially when the commercial market does not provide.

Examples in practice today include the BC Electronic Library Network (BCELN) in British Columbia. Hosted at Simon Fraser University, the BCELN is over thirty years old and provides a range of library services to the tertiary education sector across British Columbia and the Yukon. Its primary aim is to provide equitable and sustainable services to the sector, recognising that it is a sector of very mixed resources and capacities. Funded in part by the provincial government and in part by institutions directly, the BCELN conducts joint procurement of electronic resource collections and offers shared research platforms (e.g. open journals and data repositories) along with learning support platforms such as an “ask a librarian” platform (AskAway) and a shared writing support platform (WriteAway). These platforms are notable, as in both cases institutions provide both funds to support the technical platforms and share people resources to staff the services.

At a much smaller scale, the OpenETC, also in British Columbia, is a set of shared open education platforms (WordPress and Mattermost) that have been run collaboratively within the British Columbia tertiary education sector for the last eight years. As with the BCELN, institutions donate technical, administrative, and financial support to the service. Beyond making educational technologies available in equitable and sustainable ways, the OpenETC also networks digital education practitioners across the province within a sharing community enabled by the platforms. Templated designs for learning activities can be shared as open educational resources, supporting the sustainable development of a digital learning capacity that would be less feasible at the scale of a single institution.

The benefits of these kinds of shared approaches have been recognised by the provincial government of British Columbia, and the Shared Educational Resources and Technology (SERT) initiative has been funded by the Ministry of Post-Secondary and Future Skills to provide grants to pathfinder projects and to develop resources and toolkits to enable more shared educational technology services. Several case studies on shared services, including from the BCELN, will be published openly in early 2025 as part of this work.

Spread a little ITIL to align working practices and build understanding.

The Information Technology Infrastructure Library (ITIL) is a framework of best practices for delivering technology services and is the most widely accepted approach in use worldwide, adopted by thousands of organisations to improve service delivery and ensure technology is aligned to meeting strategic objectives. As the tertiary education system in many countries becomes more digitised, the use of ITIL in educational institutions has been growing. Ireland is no exception, with many IT departments in Irish universities adopting the framework and championing it locally. While educational technology, IT, and other professional areas may sit in different organisational structures in different institutions, the concept of IT service management (ITSM) within ITIL can provide a common language and approach for managing educational technologies. Business service catalogues help to clearly define the educational technologies that academic staff and students have available to them, including their boundaries. These are underpinned by service level agreements (SLAs) that define expected service levels as well as the operational roles and responsibilities that support collaborative working practices across the institution. Often any tensions that exist between departments with shared responsibilities for delivering educational technologies services are the product of different levels of expertise and competing operational concerns. Educational technologists are usually not experts in areas such as cybersecurity, and likewise IT professionals may not have sufficient knowledge about pedagogy and educational practice to judge the validity of some of the claims made by suppliers. Sustainable and ethical management of educational technology is a shared endeavour that relies heavily on a wide range of skills, knowledge, and experience being brought together effectively and a shared understanding being built. SLAs in particular make clear who owns the service within the organisation, with responsibility for setting strategic direction and policy, and who is involved in delivering various aspects of the service, including end user support, pedagogical advice and guidance, training, technical management, etc. SLAs can be a very practical and effective description of how colleagues are expected to work collaboratively and with shared accountability, and they can reframe working relationships across organisational structures, guided by shared definitions of what "good service" looks like. Where educational technologies are being used across other research and public engagement use cases, business service catalogues and SLAs can also help to capture and manage this extra level of complexity, especially when combined with streamlined institutional helpdesk services.

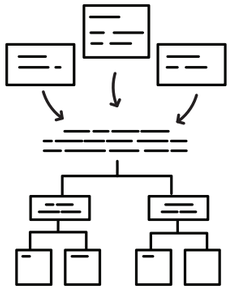
Sustainable and ethical management of educational technology is a shared endeavour...

Recommendations

While ethical approaches are primarily framed in this paper as a practical response to new risks, the overall ethical approach to the management of educational technologies described is informed by a wider "ethics of care" frame (Tronto, 1998) aiming to support broader ideas of "good education" through recognising need and evidence of harms (caring about), taking the responsibility to act (caring for), reconceptualising professional practice to put required skills and experience in place (care giving), and being attentive to power imbalances, inclusivity, and the shared labour required (care receiving). This framing aligns strongly with the values and aspirations of the TU sector, including transformative learning and teaching experiences, enabling lifelong learning, education for sustainability, economic participation and prosperity, and widening access to and inclusion in education.

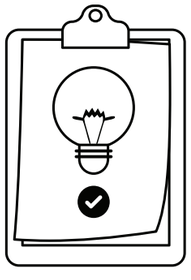
"While perfection is impossible, improvement is not" (Tronto, 1998, p. 18), and so each of the following recommendations for action draws upon the risks, challenges, possible responses, and opportunities outlined above, aiming to build institutional capability while addressing the complex challenges of managing educational technology in an ethical and sustainable way. They attempt to balance the blunt instruments that policy and procedures can sometimes be with practices that bring people into new relationships where they share knowledge and perspectives, and build understanding and capacity. The recommendations emphasise the need for both institutional and sector-level responses, recognising that many of these challenges cannot be effectively addressed by individual institutions acting alone. People are the most valuable and expensive resource in any institution, far more so than any educational technology will ever be, and so supporting financial sustainability and operational efficiency begins with care for relationships, knowledge, skills, and empowerment.

Governance and policy

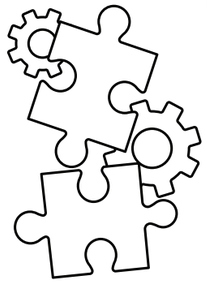


1. Develop a set of potential educational technology scenarios informed by the digital transformation ambitions of the TU sector and use ethical review frameworks to understand where areas of concern and risk are already covered by institution policy and guidance, and where gaps in practice may exist. Share these resources across the sector such that each institution can conduct its own analysis and draw upon existing sector guides for developing enabling policies (Cronin et al., 2021).
2. Develop comprehensive institutional data ethics policies and procedures that go beyond basic compliance, incorporating ethical impact assessments and establishing oversight groups. These policies should be developed with data protection professionals within institutions, cover all operational data use, including educational technology, and should be grounded in principles of transparency, accountability, and fairness. The policies should explicitly address emerging risks around privacy, bias, automation, and environmental sustainability, linking to existing environmental sustainability and equality, diversity, and inclusion initiatives as an enabler. Consider adding Creative Commons licenses to key policies and procedures so that they can be easily shared across the TU sector for local revision and adaptation.

Procurement practices



3. Reconceptualise educational technology procurement as a quality assurance concern and strategic tool, rather than purely an administrative or compliance process. Implement ethical review frameworks specifically for educational technology procurement, drawing on models like ALT's FELT, or consider the development of TU-specific ethical edtech toolkits as is being done in British Columbia.
4. Ensure procurement teams include balanced representation from IT, learning technology, academic staff, and students, and that all participants are empowered to meaningfully bring their expertise and insights to the process, rather than merely being "consulted".
5. Develop standardised question sets at both institutional and sector levels that probe ethical concerns, evidence of claimed benefits, and potential risks. These should be consistently used across procurement activities and shared between institutions to build sector-wide leverage with suppliers.



Expertise and collaboration

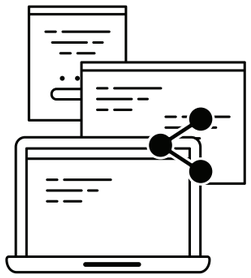
6. Expand the role of learning technologists in procurement processes, providing specialised training in areas like ethical practice, market analysis, and procurement strategy. Consider the role that professional associations such as the Irish Learning Technology Association might play in making visible the need for enhanced practice and supporting professional development.

7. Implement ITIL-based service management practices to provide a common framework for managing educational technologies across different organisational units and bring colleagues into closer collaboration. This should include clear service catalogues and well-defined SLAs that outline roles, responsibilities, and expected service levels.

8. Develop mechanisms for meaningful student and staff involvement in educational technology decision-making, including co-design approaches for service development and regular consultation on the impact of educational technology. This should include systematic collection of feedback or new requirements.

9. Consider the development of an information-sharing resource at sector level, or collaboration with an organisation such as Edtech Impact, to develop structured reviews of educational technologies used within the sector that can be used to inform and guide procurement choices in other institutions.

Operational sustainability



10. Explore opportunities for sharing platforms across learning and teaching, research, and public engagement to maximise return on investment and build stronger cross-institutional relationships. Consider consortium approaches to platform sharing between institutions where commercial solutions are inadequate or cost prohibitive, or where there is significant potential to build community and extend capacity and digital skills.

The transformation of Irish technological universities into digitally mature institutions requires more than just the efficient and sustainable acquisition and deployment of educational technologies – it demands a fundamental shift in how these technologies are thought about, procured, and managed. Ultimately, success will be measured not just in the technologies deployed, but in how well they support the core values and aspirations of the TU sector while nurturing the interests and goals of students and staff.

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