TEACHING AND LEARNING IN IRISH HIGHER EDUCATION:

A ROADMAP FOR ENHANCEMENT IN A DIGITAL WORLD 2015-2017

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NATIONAL FORUM
FOR THE ENHANCEMENT OF TEACHING
AND LEARNING IN HIGHER EDUCATION

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A Note from our National Forum Patron, Professor Mary McAleese

Digital technology is an important ally for higher education. That is the clear message of this extended roadmap document for building digital capacity in Irish higher education. It is also the clear message from the European Commission's recent (October 2014) High Level Group (HLG) report *New Modes of Teaching and Learning in Higher Education*. It is very encouraging and reassuring to see Ireland embrace the imperative of using the new technologies to advance the science of pedagogy, to enhance the quality of teaching and learning, to customise the student experience of both, to widen access, expand opportunities for life-long learning and continuing professional development, to promote diversity in the higher education sector, to lift local, regional and international collaborations to a completely new level and much more.

Investment in the new technologies is an imperative for Ireland, indeed for the European Union if the sector is to be fully fit for purpose and as modern and up-to-date as we can make it. It is particularly encouraging to see an emphasis in Ireland on a multi-dimensional approach to the use of technology in education, and the strong and categorical focus on listening to and working with students in pursuing all teaching and learning enhancement goals.

It is clear that there is a serious collective commitment among Irish higher education institutions to work together to embrace technology in education in order to build a stronger educational future. The work has already begun. But in order to fulfil its potential, educational and learner goals need to be right at the forefront of all deliberations and developments. The High Level Group wants to see the learner in the driver's seat when it comes, for example, to collecting, analysing and using data on his or her learning progression. This is one of the reasons why the National Forum's commitment to engaging with students in a partnership approach is just so heartening. The authentic involvement of students in an enhancement agenda that is fully inclusive, reciprocal and genuinely empowering can only lend strength to the journey on which we have embarked.

I look forward to a time and soon, when Europe will act more nimbly in its mainstreaming and widening use of technology to enhance learning. To make that radical but essential shift happen, I encourage the collaboration of institutional leaders, students, teachers and support staff, on whom the successful adoption of technology depends.

The Irish higher education sector has begun the journey towards transformation of our teaching and learning landscape. This extended roadmap provides a strong set of pointers to how the work can gather the sustaining momentum it will need to provoke the exciting transformative change that is possible and so vital to Europe's future.

CHAIR'S Preface

In this document we build on the preliminary roadmap published by the National Forum in May 2014[1] by highlighting key considerations which aim to address the challenges more explicitly.

This extended report has several aims.

- It **synthesises** the extensive consultation[2] and research undertaken as part of building the roadmap for digital capacity (digital capacity is defined as a **concept that refers generally to** the skills, competencies, attitudes, infrastructure and resources that enable people to work, live and learn in a world that is increasingly digital)[3].

- It places the collective challenges and implications of digital capacity within a **wider framework** that connects bottom up and top down pragmatic actions. This framework speaks to our sector's shared vision of 'a [higher education] culture that fully embraces digital learning and digital innovation' (*Digital Roadmap – Phase 1* (2014)).

- It presents focused, action-orientated ways in which such a culture can be achieved, including an identification of **who are the key drivers for the different dimensions of capacity building**.

- It encourages and informs purposeful dialogue between key stakeholders within and across our institutions so that our agreed vision, principles and priorities can be translated into **tangible and transformative actions on the ground**.

Building digital capacity to enhance teaching and learning is going to involve the widespread development of teacher skills, an agreed common language[4], a review of current infrastructure; a stronger set of specific supporting policies, collaboration across institutions and meaningful and ongoing inputs from diverse students across the sector. Engagement at the level of the disciplines is extremely important, because this is where meaningful pedagogical innovation and change happens: working at this level is likely to change the practices of individuals and to have an impact on learning.

Our sectoral consultations highlighted tensions and paradoxes associated with building digital capacity in Irish higher education. We have strong foundations and highly developed expertise on the one hand, coupled with serious resource challenges on the other; there is a need to respect and promote institutional, teacher[5] and disciplinary autonomy while also transcending institutional and disciplinary boundaries in the interest of whole-sector enhancement; there remains a strong need to recognise that the human, relational aspects of excellent learning environments are not necessarily or automatically enhanced by technology, but that digital capacity nevertheless has powerful and ever-increasing

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1   Full title: *Principles and First Insights from the Sectoral Consultation on Building Digital Capacity in Irish Higher Education: Digital Roadmap, Phase 1.*
2   See Appendix 1.
3   Digital capacity can be expressed at the individual, organisational and national levels.
4   See Appendix 2.
5   Lecturers, University Teachers and other grades of staff involved in frontline teaching in the sector.

potential that must be embraced and utilised more fully; it is important to emphasise the differences between efficiency and effectiveness when exploring the possibilities of technology-enhanced learning; and it is also important to engage with both the opportunities and the hazards of learning in a world that is increasingly digital.

It is encouraging also to note that even though we are encountering the same challenges in embracing digital technology as those encountered in other countries – in many instances we are already finding ways of dealing with these challenges that distinguish the Irish sector as capable of offering global leadership in this space[6].

There are aspects of digital capacity that can effectively solve problems of expansion, while also having an impact on the effectiveness of teaching and learning – but it is important to recognise that economies of scale are not a given.

All institutions must be free and empowered to determine their own strategies and directions within their particular contexts and to pursue their diverse, ambitious and challenging goals on the higher education landscape. Digital capacity should support vibrant teaching and learning strategies. But improving learning and teaching through digital capacity is a collective endeavour. By making improvements together, by building regional clusters and other partnerships we stand to enhance Ireland's higher education reputation in the wider European and international context as well as supporting the work of individual institutions.

Throughout the consultative process of developing this digital roadmap, one thing has been made repeatedly clear: we could all be using technology more effectively to improve the way we teach, and to enhance or transform the ways in which students are enabled to engage with their learning. This extended roadmap brings together the know-how and expertise from across the sector to point to some of the most important ways forward.

Again, I am hugely grateful to Dr Terry Maguire whose leadership in developing this roadmap deserves very special mention. I acknowledge the dedicated work of Jim Devine, Kevin O'Rourke, Sarah O'Toole, Eloise Tan and Elizabeth Noonan, key members of the Forum team whose contributions to the research and thinking behind this roadmap document have been so substantial. I recognise with huge gratitude all the members of the Board of the National Forum for their energy, commitment and guidance. And I warmly thank all those very many teachers, students, managers, educational technologists and experts across the entire sector whose collaborative contributions to this process have provided real cause for optimism as we move to build digital capacity in Irish higher education.

Prof. Sarah Moore

Chair, National Forum for the Enhancement of Teaching and Learning in Higher Education

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6   See for example POERUP (2014) Policies for OER Uptake. http://www.poerup.info/index.html.

The Vision For Digital Capacity In Irish Higher Education

The cross-sectoral consultations that informed our preliminary roadmap gave rise to the articulation of an emerging, shared vision for building digital capacity that aligned with many of the issues and concerns identified in the national strategy for higher education.

This vision is outlined below:

The Irish higher education sector will be characterised by providing a HE learning experience and environment in which:

- There is a culture that fully embraces digital learning and digital innovation and its contribution to realising transformative goals articulated in the National Strategy for Higher Education

- Digital platforms, resources and tools are utilised to enhance teaching, learning and assessment, to connect teachers and students, and to increase the level and quality of learning-related communication

- Digital literacy and digital skills for teaching and learning are developed, supported and fully embedded

- Students will have access to a range of technological supports and resources to enhance their learning in a manner that enables them to become lifelong learners in the digital world

- Teachers will be fully enabled to use digital technologies/resources where appropriate, in order to enhance student learning within their disciplines

- Institutions collaborate with each other, and with the schools and further education sectors in order to build digital capacity for teaching and learning, with students as key partners in the process

- Institutions collaborate effectively at the international level in both research and practice relating to technology-enhanced learning, for example through the Erasmus+, and Horizon 2020 initiatives, enabling Irish Higher Education Institutions (HEI) to partner in a global landscape, building connections and developing a reputation internationally for innovation, digital fluency and cooperation

EXECUTIVE SUMMARY

One of the major challenges facing 21st century higher education is finding a way to harness ever-increasing digital capacity to enhance student learning. One of the key goals of the National Forum is, via wide consultation, to create a digital roadmap to help to guide institutions and organisations in the development of local and national digital strategies and to ensure alignment, coherence and a sense of common endeavour at a sectoral level.

This document is designed to inform and guide senior managers, heads of department, schools or faculties and leaders within the higher education sector. It focuses also on systems-level higher education organisations, as well as representative organisations within the sector which together must take the lead in building digital capacity to enhance teaching and learning across the sector. The roadmap identifies the key priorities for change and provides an informed framework for supporting organisations in addressing these priorities.

Building digital capacity is about much more than developing a capacity for online course provision and the use of digital tools. It is about developing new ways of dealing with information, working and learning in a digital environment, using time and information differently, and developing new versatility when it comes to interaction in learning environments. Embracing the full potential of digital technology poses a challenge to many of our basic structures, our assumptions, our policies and procedures, not least regarding our beliefs and attitudes about the role and nature of higher education itself.

Principles underpinning the Forum's Digital Roadmap

The National Forum, through its consultancy processes, has identified a number of important principles upon which to base its four key recommendations. These principles are summarised below and are discussed in more detail in the document.

1. **The need to integrate approaches to building digital capacity across the sector**

    Institutions have begun to articulate their own strategies for technology-enhanced learning, and many are working to engage in research, develop new approaches and build skills that embrace and exploit more fully the use of technology for teaching. By bringing together the sectoral expertise that informs this roadmap, the Forum aims to support, connect, and enhance efforts at local and regional levels, and to point to the collective ways in which the sector can work to build digital capacity to enhance and develop learning in Irish higher education.

2. **The commitment to continuing engagement with stakeholders in the sector including employers, external communities, schools and further education providers; acknowledging that they are best placed to identify current needs, and thereby to scope a future vision for technology-enhanced learning**

    This document outlines how the National Forum's ongoing consultation process will seek to elaborate and develop policy and strategy over the coming months. It identifies the steps that will lay the

foundation for mobilising, energising and guiding the sector in a coherent way to achieve a measurable national vision for digital capacity in higher education. It acknowledges the newly emerging regional clusters as an important dimension of the sector's ability to build digital capacity.

3. The engagement of students as partners

The Forum considers that inclusion of the student voice is a key value in building digital capacity. We commit to seeking out students' perspectives on all aspects of the Forum's work plan and to develop ways to engage students as vital partners.

4. The use of learning spaces and digital capacity for rich learning

In general, the (re)design of space and its use (ownership and timetabling) are poorly represented in the discourse about learning in the digital age. Innovative design and use of space can accommodate formal and informal learning opportunities. Creation, for example, of 'studio' type spaces provides opportunities for 'group ownership' and for engagement in extended projects or 'blocks' rather than the highly segmented timetables that are more familiar to students.

5. The need to interrogate the myths and understand the realities associated with digital learning

Technology attracts fears and expectations in all fields, not least in education. Some persistent perceptions still thrive and need to be confronted with evidence-based approaches to understanding the rationale and the implications of embracing technology in appropriate ways. Persistent rhetoric has promoted notions that there are willing and waiting student markets for online courses across all cohorts and disciplines; that technology-enhanced teaching necessarily provides more cost effective ways of teaching and will automatically improve access to higher education; that students have unproblematic enthusiasm for learning online; that technology will, of itself, bring a change in the way people teach and learn.

Recommendations

The following are the four main recommendations of the National Forum, with each recommendation showing their intended outcomes. These recommendations and outcomes are explored in full in the document.

Recommendation 1: Prioritise the strategic development of digital capacity in institutional and national policy and quality frameworks in a way that supports innovation for impact

If Recommendation 1 is successfully implemented, the following kinds of outcomes can be expected:

- Every higher education institution in the sector will have a strategy and implementation plan for the development of digital capacity to enhance teaching and learning

- Strategies will be aligned across regional clusters or other multi-institutional partnerships, as appropriate

- Strategies will be realistic and clear about where institutions are positioned currently and will set real targets for where they want to be in 2017

- Departments/schools/faculties will take an active role in supporting and mobilising grass roots innovation to enhance teaching and learning

- Students, regardless of their registration as full-time, part-time or distance learners will have an improved, more integrated learning experience, enhanced with technology appropriate to their needs

- There will be increased use of active learning approaches to the student experience that harnesses the potential of technology, while building digital skills and confidence

- Higher education policies and funding will enable and support institutions in their commitment to build digital capacity

- There will be a more coherent approach and improved communication and transition between all levels of education, facilitated by the effective use of technology

Recommendation 2: Strengthen and support collaboration within and between institutions, and with different parts of the higher education sector; develop shared policies and infrastructure that reflect the complexity of an increasingly digital world

If Recommendation 2 is successfully implemented, the following kinds of outcomes can be expected:

- Higher education institutions will be able to work collaboratively to develop processes and policies that enable innovation and development in a regulated and increasingly digital world

- Institutions will pilot stronger team-based approaches (involving teachers, students, IT and academic support staff) to teaching and learning, curriculum design and programme development; new modes of learning and innovation should be integrated from the outset of such pilots

- Initiatives will be put in place that specifically provide opportunities for staff to appreciate and understand the complex policy environment within which they work (to include policies at institutional, cluster, national and international level)

- Evidence will show that departments take an increasingly active role in driving change within an institution

- Higher education institutions will ensure that when reviewing their technological infrastructure they give sufficient regard to an institutional strategy for digital learning/digital capacity building and develop a strategy for ongoing development

Recommendation 3: Develop a consistent, seamless and coherent digital experience for students in Irish higher education and actively engage with students and teachers to develop their digital skills and knowledge

If Recommendation 3 is successfully implemented, the following kinds of outcomes can be expected:

- There will be evidence of coordination across the range of actors including librarians, academics, IT specialists, learning support staff in the provision of a seamless digital experience for students

- Digital skills and knowledge development will be integrated into the national professional development framework

- Graduate attributes will incorporate digital awareness and literacy
- Institutions will adopt open education principles with regard to teaching and learning resources and practices
- Open educational resources will be developed and shared nationally through institutional or shared repositories
- The issues of copyright and intellectual property in higher education will be clarified at a national level

Recommendation 4: Develop a strong evidence base for enhanced pedagogy

If Recommendation 4 is successfully implemented, the following kinds of outcomes can be expected:

- Increased number of publications of relevant research by Irish academics (whether individually or in national or disciplinary networks) in high-quality international journals
- Networks have developed to maximise national impact and work collaboratively to enhance teaching and learning across the sector
- Increased engagement from teachers in networks and disciplinary groups
- Institutions are harnessing the potential of data analytics (which also encompasses the general use of statistical and measurement tools) to inform practice and policy
- National learning impact awards explicitly recognise evidence-based research that underpins the enhancement of teaching and learning and recognises where innovation has enhanced or transformed teaching and learning challenges

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OVERVIEW OF DOCUMENT STRUCTURE

A Clear Focus on Enhancement

The Digital Roadmap seeks to help to guide institutions and organisations in the development of local strategies and to ensure alignment, coherence and a sense of common endeavour at a sectoral level.

The values and principles that underpin this document, already articulated in the preliminary roadmap, have been augmented and reviewed in light of the subsequent consultations and are included as Appendix 3. The approach to building digital capacity taken in this document reflects a focus on the *enhancement* of teaching and learning as a broader encompassing concept for quality assurance.

By identifying ways in which we can improve practice for excellence, by drawing on the engagement and commitment of staff and students and by working towards a common culture of commitment to excellence in teaching and learning we can enhance the entire sector's reputation nationally and internationally.

This document is designed to inform and guide senior managers, heads of department, schools or faculties and leaders within the higher education sector. It focuses also on systems-level higher education organisations, as well as representative organisations within the sector who together must take the lead in building digital capacity to enhance teaching and learning across the sector. The roadmap identifies the key priorities for change and provides an informed framework for supporting organisations in addressing these priorities.

Section 1 – Introduction – outlines the steps that the sector needs to take to ensure sound strategic development of digital capacity in Irish higher education institutions. It highlights the need to work collaboratively and in an integrated way to involve employers, external communities, schools, further education providers who are best placed to identify current needs. Most importantly it highlights the need to engage students as vital partners in the process. In the introductory section we challenge some of the myths that have developed around the enhancement of teaching and learning with technology, and provide examples of evidence that confront these myths.

Section 2 – 'Why Digital?' – provides an overview of the current European debate and provides some insights into imminent changes to quality assurance standards that will impact higher education in 2015. Irish higher education is undergoing a period of major reform, and technology's role in engaging with the key changes and challenges of this reform is elucidated. The role of the department/school/faculty as key enablers of change is highlighted.

Section 3 – 'Building Digital Capacity: Recommendations for Progress' – identifies four core recommendations[7] and the associated priorities that need to be addressed. Alongside each core recommendation and its identified priorities are guiding questions that institutions/clusters may want to consider as they develop a strategy and associated implementation plan. If we are to build digital capacity in higher education, some system-level changes are required. Against each system-level change, suggestions

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7   http://teachingandlearning.ie/wp-content/uploads/2014/05/Digital-Roadmap-PHASE1MAY282014.pdf.

of who might be in a position to initiate or drive the change are identified. The role the National Forum for the Enhancement of Teaching and Learning will play in supporting change is also outlined. Finally, for each recommendation, indicators of success are identified.

This digital roadmap cannot solve all the challenges that face us as we work to generate a clear mission for the enhancement of teaching and learning in higher education – but it sets out the terrain on which we stand, it declares the principles and values on which digital capacity for education should be built, it highlights challenges and blocks to development, and recommends ways in which such difficulties can be overcome.

Section 1:
Introduction

There remains a culture of conservatism within European higher education which needs to change. This demands strong leadership and vision from both public authorities and institutional leaders. While a broad range of good practice is already emerging across Europe, this is happening to a large degree in an uncoordinated bottom-up approach. It is now time for governments and institutions to develop comprehensive strategies at both the national and institutional level for the adoption of new modes of learning and teaching within higher education

HLG on Modernisation of the HE 2014 p. 11.

This roadmap provides a backdrop for the development of institutional and regional strategies and aims to enable, advise and inform the sector to demonstrate clearly how the challenges and opportunities of the emerging digital potential can be met. This involves preparing our students for future working environments, and achieving a level of readiness for working and living in a world that is increasingly digital.

The current approach to building digital capacity in the sector is not yet sufficiently cohesive, sustainable, or evidence-based. The relentless stream of innovation in the digital world and the interests of commercial enterprise are increasingly dictating the pace of change and the process of how higher education makes use of technology. Whether this is the best way forward is open to question.

Technology has the potential to enable innovation and enhance teaching and learning practices and processes. In line with the Digital Agenda for Europe (DAE), which aims to reinvigorate Europe's economy and help Europe's citizens and businesses to get the most out of digital technologies, the development of a focused roadmap for Ireland should help us to build on existing pockets of excellent innovation to move towards supported, shared frameworks of excellence.

Building digital capacity is about much more than developing a capacity for online course provision and the use of digital tools. It is about developing new ways of dealing with information, working and learning in a digital environment, using time[8] and information differently, and developing new versatility when it comes to interaction in learning environments. Embracing the full potential of digital technology poses a challenge to many of our basic structures, our assumptions, our policies and procedures, not least regarding our beliefs and attitudes about the role and nature of higher education itself.

The severe recent economic downturn has brought with it a recognition of Ireland's position in the globalised economy. Vision and leadership are required to plan for the digital future. Irish higher education needs to set its own agenda, in the context of the existing EU framework, and to chart its own deliberate course. **We must take ownership and leadership of the strategic development of digital capacity in Irish higher education institutions.**

We need to integrate our approaches to building digital capacity across the sector

Institutions have begun to articulate their own strategies for technology-enhanced learning, and many are working to engage in research, develop new approaches and build skills that embrace and exploit more fully the use of technology for teaching. By bringing together the sectoral expertise that informs this roadmap, we aim to support, connect, and enhance efforts at local and regional levels, and to point to the collective ways in which the sector can work to build digital capacity to enhance and develop learning in Irish higher education.

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8   See Appendix 4.

We must continue to engage with stakeholders in the sector including employers, external communities, schools and further education providers, acknowledging that they are best placed to identify current needs, and thereby to scope a future vision for technology-enhanced learning

This document outlines how the National Forum's ongoing consultation process will seek to elaborate and develop policy and strategy over the coming months. It identifies the steps that will lay the foundation for mobilising, energising and guiding the sector in a coherent way to achieve a measurable national vision for digital capacity in higher education. It acknowledges the newly emerging regional clusters as an important dimension of the sector's ability to build digital capacity.

We must engage students as partners

Frameworks, guidelines, theory and principles for the development of teaching have emerged all over the world. However we argue that too often, the voice of the student has not been given adequate attention. The higher education sector will benefit from listening to students' voices, respecting their opinions and exploring their experiences. Paying attention to what our students have to say should be a key value of our approach to building digital capacity. We must continue to seek students' perspectives on all aspects of our work plan, in a range of different ways – and to develop ways to engage students as vital partners.

We must use learning spaces and digital capacity for rich learning

The spaces in which we work, live and learn can have profound effects on how we feel, how we behave, how we perform ... spaces can also limit the possibilities of our activity, restricting us to old modes of working and thinking.

(Watson 2007)

It is often assumed that new modes of digital learning take place predominantly in online environments mediated by 'screen' technology. Consequently, insufficient attention is paid to the mix of physical and virtual spaces conducive to good learning.

Higher education, for many, will take place within 'bricks and mortar' institutions for the foreseeable future and, in tandem with building digital capacity, the design or re-design of physical learning spaces is an important consideration. The rigid structures of classrooms and furniture and the large lecture theatres of universities, for example, are in many cases poorly matched to the flexible needs of students and staff. Oblinger (2006) provides exemplars of what can be achieved within existing institutions to create quality, fit for purpose, social and learning spaces. The Spaces for Knowledge Generation (SKG) project (Australian Learning and Teaching Council 2011), engaged with architects to consider how campus spaces can be reimagined. These ideas are further developed by Steel and Andrews (2012).

New technology-enriched learning spaces are a focus of institutional investment to address the identified shortcomings of traditional teaching and learning environments. Academic development, an area that has received little attention in this context, can be designed to provide strong opportunities for university teachers to re-imagine their teaching for these new spaces while also building their leadership capacity.

In general, the (re)design of space and its use (ownership and timetabling) are poorly represented in the discourse about learning in the digital age. Innovative design and use of space can accommodate formal and informal learning opportunities. Imaginative use and Wi-Fi enabling of informal spaces, e.g., cafes, and alcoves can render colleges welcoming, open and inviting to new and existing students. Creation, for example, of 'studio' type spaces provides opportunities for 'group ownership' and for engagement in extended projects or 'blocks' rather than the highly segmented timetables that are more familiar to students. Exemplars can also be seen, where university libraries embrace a wider brief as leaning centres, for example the 'Agora' at KU Leuven[9].

We must interrogate the myths and understand the realities associated with digital learning

Technology attracts fears and expectations in all fields, not least in education. If technology is to be harnessed to enhance teaching and learning in higher education we need to be really well informed about what works and in what contexts it works. We need to confront the persistent myths with evidence-based approaches to understanding the rationale and the implications of embracing technology in appropriate ways. Persistent rhetoric has promoted notions that there are willing and waiting student markets for online courses across all cohorts and disciplines; that technology-enhanced teaching necessarily provides more cost effective ways of teaching and will automatically improve access to higher education; that students have unproblematic enthusiasm for learning online; that technology will, of itself, bring a change in the way people teach and learn. Table 1 summarises some of the associated and dominant myths that have come to be linked to digital learning along with what the evidence actually suggests.

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9   http://bib.kuleuven.be/english/agora.

Table 1: Digital Learning: Myths and Reality[10]

Myth	Example	What evidence shows
The myth of diminishing costs	• Online learning is a cheap means of providing high quality education. • You make lots of money if your course is online. • Moving courses online will help save our department money. • We will cut costs by 'going digital' with our textbooks. • The content we need to put online is already available – and free.	Expect significant start-up costs: for fully online programmes allow at least one hour of work per student-learning hour; on-going investment in training/support is required, both for students and staff; smaller numbers (optimum 20–25 students) make for more successful online experiences.
The myth of the disappearing teacher	• The teacher's time is freed up to concentrate on research. • Technology will make teaching more efficient. • Online means just having all of your lectures recorded. • The use of technology undermines teaching and teachers.	Successful online learners require enhanced support and course design; the levels of online engagement in successful online courses demand much more time and involvement on the part of the teacher; the support needs of distance learners in terms of 'teacher presence', motivation, pacing and individually targeted feedback are all vital for retention and completion.
The myth of the digital native	• Young people are experts in technology use; for them 'We always had the internet'. • Students are all 'digital natives' and are very comfortable with online learning tools and approaches. • Students will spontaneously participate in online discussion. • Teenagers are addicted to social media.	There is considerable diversity amongst learners at all ages; many students prefer to be taught in a traditional, more passive manner, but successful online learning demands active participation on the part of students. Students separate social and formal digital usage, and technology use for entertainment does not necessarily imply readiness to learn through digital systems; there is also a fundamental difference between relating to digital media as a 'consumer' of content and being a 'producer' or using the technologies as a set of tools for learning and the construction of knowledge, meaning and understanding.
The myth of diminished quality	• Teaching online is by definition very depersonalised. • Online students don't get as much personal tuition as face-to-face students. • Technology de-humanises learning. • An online course is second best, it can't be as good as face-to-face.	No significant difference has been demonstrated between online and traditional formats, although evolving evidence suggests better results from well designed online courses. Distance learning can be of very high quality and be highly regarded by students, employers and others as demonstrated by the UK's Open University. Well designed online courses demand more active learning from students both in terms of their contribution and peer learning activities.

10   Supported by the following reports: Babson Survey (2014); Barber, Donnelly and Rizvi (2013); DeMaria and Bongiovanni (2010); Gill (2003); Johnson *et al* (2015); Njenga and Fourie; Muller (2014).

Myth	Example	What evidence shows
The myth of technology as benefactor	• Technology always enhances learning; more technology will result in more learning. • Digital learning materials will engage and motivate our students. • High production value online learning materials (video, interactivity, etc.) are superior means of learning. • Using technology will in and of itself make students more engaged and/or raise standards.	Technology of itself does not bring any noticeable pedagogical benefits to the learning and teaching process. In fact, used badly, technology has been shown to hinder learning: poor completion rates have been reported from many online courses (generally as a result of poor pedagogical strategy and design). High production value materials on their own can often encourage 'pseudo-learning' rather than deeper level understanding.
The myth of insignificance	• 'Teachers don't want technology.' • All lecturers do with technology is put lecture notes online. • There is nothing that can be learned from previous experience of technology deployment in education or from educational research. • You can translate your face-to-face course directly into an online version. • A good face-to-face teacher is just as good online.	Effective online learning requires a different approach to teaching and learning design. Digital is not going to go away: it already has begun to profoundly change education. Teachers are engaging with technology, and research conducted internationally is mirrored by findings from the National Forum which indicates that there is a growing appetite for it.
The myth of imminent revolution	• 'An Avalanche is Coming' • Massive Open Online Courses (MOOC) will change forever the way we teach and learn. • 'In 50 years, there will be only 10 institutions in the world delivering higher education.' • The virtual learning environment is dead.	The expected revolution has been better described as an evolution: educators generally have been cautious about how they engage with technology in the teaching and learning space, while at institutional level, educational leaders have been slow to impose directives regarding its use. A 2014 report from the European University Association suggests that this caution is common across higher education within the EU. Educators are deciding how they want to engage with technology rather than having technology imposed upon them. Many of the early MOOC models have proven to be unsustainable and of poor pedagogical design, though much is being learned through this experience by the institutions involved. In the recent Babson Survey (2014) the proportion of academic leaders who believe that MOOCs represent a sustainable method of offering online courses has significantly decreased.

Section 2:
Why Digital?

There is a strong need for flexible, innovative learning approaches and delivery methods: to improve quality and relevance while expanding student numbers, to widen participation to diverse groups of learners, and to combat drop-out. One key way of achieving this, in line with the EU Digital Agenda, is to exploit the transformational benefits of ICTs and other new technologies to enrich teaching, improve learning experiences, support personalised learning, facilitate access through distance learning, and virtual mobility, streamline administration and create new opportunities for research.

European Commission, 2011.

European Trends and International Debate

This section outlines briefly some of the broader trends relevant to developing digital capacity: the modernisation of European higher education, the Digital Agenda for Europe and examples of international approaches to digital education.

Modernisation of European Higher Education

The European Commission is committed to the 'modernisation' of higher education within Europe, through: increasing the number of higher education graduates; improving the quality of teaching and learning; promoting mobility of students and staff; strengthening the relations between education, research and innovation and creating effective governance and funding mechanisms for higher education. To support these objectives, the Commission has appointed a High Level Group (HLG) on the Modernisation of Higher Education[11], which to date has produced two reports.

The HLG's first report (June 2013) addressed the question of <u>Improving the quality of teaching and learning in Europe's higher education institutions</u>. The central messages of the report focused on the importance of professionalising teaching, and on recognising the critical role that good teaching plays in shaping adaptive, creative and critically thinking graduates across the higher education system. The report also highlighted the importance of well-designed curricula delivering up-to-date knowledge and skills; the proposed expansion of university-level qualifications for at least 40% of young people in the EU along with the enlargement of the higher education experience across international boundaries for both staff and students.

The HLG's most recent report (October 2014), advances this theme by exploring *New Modes of Learning and Teaching in Higher Education* and outlining the imperative to embrace technological innovation in higher education teaching and learning in meeting the challenges of a modernised and expanded higher education. The HLG's report echoes many of the themes identified during our national consultation process and it is reassuring to see that the Irish higher education community's aspirations are in the same direction of travel as that of the Group. For a mapping of the HLG's recommendations to the preliminary 'Digital Roadmap' (National Forum for the Enhancement of Teaching and Learning in Higher Education 2014) see (Appendix 6).

The HLG recommends that: 'The integration of digital technologies and pedagogies should form an integral element of higher education institutions' strategies for teaching and learning' (Recommendation 3).

It also points to the importance of national funding frameworks in facilitating institutions to open up new forms of more flexible provision and to widen the diversity of their student populations (Recommendation 6) and calls for both a national competency framework for digital skills (Recommendation 4) as well as continuous professional development training for staff in relevant digital technologies and pedagogies (Recommendation 5).

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11   The relevant recommendations from both HLG on the Modernisation of HE Reports (2013 and 2014) are summarised in relation to Ireland's digital roadmap in Appendix 5.

Taken together, both reports from the High Level Group point to a changing paradigm of teaching and learning in higher education; where the nature of higher education, the learning process and the roles of learners and teachers are shifting and opening up new horizons - all made possible by the ubiquity and accessibility of digital technology.

More broadly, the influences of digital learning and more flexible modes of delivery are also predicted to change the social role and sphere of influence of higher education institutions as 'providers of knowledge and innovation and as contributors to development, putting new pressures on HEIs to rethink their societal responsibilities in their local, national and regional context, including the responsibility to build capacity in emerging economies and developing countries of the world' (European Commission 2013).

The Changing Landscape of Quality Assurance in Higher Education

Innovation **at scale** in curricula, teaching, learning and assessment processes requires a robust engagement with institutional and academic quality assurance and risk assessment processes. Regarding such processes solely as exercises in compliance is no longer an adequate response. The Organisation for Economic Co-operation and Development (OECD) Institutional Management in Higher Education Guide *Fostering Quality Teaching in Higher Education: Policies and Practice* (Hénard and Roseveare 2012) is a valuable resource that situates new modes of teaching and learning appropriately within an overall guidance framework that takes a cascaded approach, combining supports at the institutional, programme/course and individual academic/teacher levels. Support for 'innovative pedagogy' and for the development of 'communities of teaching and learning practice' is specifically referenced, as are contextual shifts including 'the rapid changes in technology, which can quickly make programme content and pedagogies obsolete'. The need for 'continuous upgrading in pedagogy, use of technologies, assessment models aligned with student-centred learning' and 'creating of innovative learning platforms' are foregrounded among the indicators of a new quality teaching paradigm.

Seven policy levers are identified see Table 2, and a self-assessment instrument is provided to assist institutions in mapping their current stage of maturity in achieving 'quality teaching' goals. The many and diverse practices that are now identified with new modes of teaching and learning can and should be evaluated against a common framework with respect to their contribution to a 'quality teaching' agenda, however different the individual context and learning environment may be.

Table 2 Policy Levers for Quality Teaching (Hénard and Roseveare 2012)

Policy Lever 1 Raising awareness of quality teaching
Policy Lever 2 Developing excellent teachers
Policy Lever 3 Engaging students
Policy Lever 4 Building organisation for change and teaching leadership
Policy Lever 5 Aligning institutional policies to foster quality teaching
Policy Lever 6 Highlighting innovation as a driver for changes
Policy Lever 7 Assessing impacts

A recent and important addition (March 2014) to the literature on academic quality assurance is the *Guide to Quality in Post-traditional Online Higher Education* (Butcher and Hoosen 2014) developed by the Academic Partnerships organisation. This guide offers a working definition of what is encompassed by 'post-traditional' higher education, effectively defining it in terms of how it responds to post-traditional students who are 'typically able to work independently, or at least to seek specific help when they need it'. In addition, competency assessment helps post-traditional students to identify areas in which they excel and those where they have gaps, honouring the knowledge, skills, and abilities that they bring and granting credit for course equivalency'. The guide offers a comprehensive overview of the evolving agenda for open education (open learning, open access, open source software, open data) and provides pointers that are useful in grounding policy initiatives such as 'Opening Up Education'[12]. It also provides indicators for quality assessment of open education resources (OER) and MOOCs. This particular guide complements the *Guide to Quality in Online Learning*, also published by Academic Partnerships (2013).

Returning to 'mainstream' higher education, the E4 stakeholder group, comprising the European Association for Quality Assurance in Higher Education (ENQA), European Students' Union (ESU), European University Association (EUA), and European Association of Institutions in Higher Education (EURASHE), in cooperation with Education International (EI), BUSINESSEUROPE and European Quality Assurance Register for Higher Education (EQAR) on 18th March 2014 published a joint proposal for a revised version of the *Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG)*[13]. The revised guidelines which were endorsed by the Bologna Follow Up Group (BFUG) on 19th September 2014 and are expected to be formally approved by Ministers in May 2015, and will make a powerful contribution to embedding new modes of teaching and learning and to ensuring that 'new modes' are proactively considered in the design and periodic review of courses and institutional processes. Proposed standards for internal quality assurance include a focus on:

– **Student-centred learning, teaching and assessment** that for example: 'considers and uses different modes of delivery, where appropriate; flexibly uses a variety of pedagogical methods and regularly evaluates and adjusts the modes of delivery and pedagogical methods'.

– **Teaching staff,** emphasising and encouraging 'innovation in teaching methods and the use of new technologies'.

– **Learning resources and student support,** with an emphasis on 'the needs of a diverse student population (such as mature, part-time, employed and international students as well as students with disabilities), and the shift towards student-centred learning'.

In summary, core processes for academic and institutional quality assurance within the European Higher Education Area, augmented with guidelines for online learning (e.g., those provided by EFQUEL (European Foundation for Quality in e-Learning), European Association of Distance Teaching Universities (EADTU) and Academic Partnerships) and new guidelines for post-traditional higher education can provide the basis for strategic innovation. We may reasonably expect that future policy will require all institutions to address and respond to the demands of new modes of teaching and learning as an integral aspect of cyclical review processes.

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12   http://www.openeducationeuropa.eu/fr/initiative.
13   Stakeholders' proposal for a revised version of the ESG: http://revisionesg.wordpress.com/2014/03/18/.

Digital Agenda for Europe

The Digital Agenda for Europe (European Commission 2010), as part of the Europe 2020 initiative, aims to revitalise Europe's economy and help Europe's citizens and businesses to get the most out of digital technologies. Enhancing digital literacy skills and inclusion is one of seven key priorities identified, and this includes both the structured acquisition and building skills for participation in an increasingly digital society as well as the use of digital technology in education. The most recent progress report on digital skills in the general European population, found that 47% of citizens did not have the basic skills needed to function effectively in a digital society '*Measuring Digital Skills Across the EU*' (EUA, May 2014). The Digital Agenda places strong emphasis on the development of digital 'competence', which is framed as a set of interrelated skills necessary for the 'confident and critical' use of digital technology for business, leisure and learning.

Looking more specifically at higher education, a recent European University Association report *Measuring Digital Skills Across the EU* (EUA 2014) showed that adoption of e-learning was variable across European higher education institutions and countries. In particular, it highlighted that less than one third of institutions involve all or most of their students in some form of e-learning, though at least 91% of institutions reported themselves to be engaged in some form of e-learning. This variability of adoption was attributed to the impact of faculty led initiatives and the emergent nature of national policies and strategies for e-learning. While 87% of the institutions surveyed believe that e-learning is a catalyst for change in teaching and learning, in particular enhancing learning in mass education settings, the overall picture that is painted across Europe is patchy at best. The EUA report suggests that while there are pockets of innovation and good exemplars, a co-ordinated approach to digital learning has yet to be achieved, which may be reflective of the emergent nature of strategies and approaches within national systems.

Strategic Developments and Digital Futures

Whilst institutional practices in the European context may be variable, there are also examples of nationally led initiatives which have specifically engaged with building strategic digital competency and literacy for higher education. In particular the role of the Joint Information Systems Committee (JISC) in the UK has been important and influential. JISC funded a significant two year programme, 'Developing Digital Literacies' to support the development of 'coherent, inclusive and holistic institutional strategies and organisational approaches for developing digital literacies for all staff and students[14]'. The project facilitated a wide range of digital literacy initiatives for academic development, the student experience, and graduate attributes, and led to the development of case studies and other resources including self-assessment inventories for institutions. Other international approaches include, for example, the Graduate School of Education at Stanford University which has been involved in a two year institutional dialogue on strategic questions of digital education development. Their discussion topics (see Appendix 7) address foundational and complex questions which need to be answered to ensure that digital technologies are properly harnessed to significantly enhance teaching and learning. The topics include: new forms of college access, the importance of recognising the subtleties of building online communities, the issue of academic credentials in a digital era, big data and data analytics for learning. Many of these internationally identified questions are relevant to the developing Irish context.

14   For Information on the JISC Developing Digital Literacies project see http://www.jisc.ac.uk/whatwedo/programmes/elearning/developingdigitalliteracies.aspx.

As forces pushing the wider adoption of technology in learning become more pervasive, it is crucial that institutions and national organisations consider thoughtfully the type of digital futures and new digital pedagogies they wish to embrace.

The National Policy Context

Nationally, there has been much discussion about the promise digital technology brings to learning environments in higher education. This has been reflected in the number of key strategic documents that have recently focused on aspects of digital capacity across the education sector in Ireland. The *National Digital Strategy for Ireland* (Department of Communications, Energy and Natural Resources (2013)) refers to digital technology's potential and its increasingly important role in teaching, learning and research. *The National Strategy for Higher Education to 2030* notes that at higher level 'eLearning is becoming an increasingly important part of the process of teaching, learning and research', and points to the potential that technology has to stimulate active learning among students (Department of Education and Skills 2011, pp.22–23, 52). The HEA position paper on *Open and Flexible Learning* states that 'Technology is impacting significantly on higher education' (HEA 2009, p. 1). A number of recommendations remain pertinent today and are further developed and amplified in this report.

Similar discussions are happening in relation to the primary and secondary levels of education (see the December 2013 consultative paper 'Building Towards a Learning Society: A National Digital Strategy for Schools and a National Strategy for Digital Learning in Schools' (Butler et al, 2013). The Department of Education and Skills is currently finalising its Digital Strategy for Schools. The Strategy will articulate that ICT has the potential to transform teaching, learning and assessment tasks in all primary and post-primary schools. It recognises that digital technologies are presenting new opportunities for teachers to design and implement more engaging and relevant learning tasks. In particular the Strategy recognises that digital technologies can play a key role in developing student 21st century skills or Key Skills so they can become engaged thinkers, global citizens and active learners in collaborative social learning environments. One of the key objectives of the strategy is to provide support to teachers to enable them to use digital technology competently and confidently in their classrooms. This will be achieved by working in tandem with the Teaching Council and the Department's support services. The Strategy supports the Department's existing reforms around Literacy, Numeracy and School Self Evaluation and endorses the central role of digital technology within these key policy initiatives. The Strategy recognises that digital technology is not a panacea for all educational ills but that it provides new opportunities for teachers and learners to engage in meaningful learning activities.

Higher Education in Ireland – A Systems Lens

Building digital capacity for the enhancement of teaching and learning in higher education in Ireland is complex and challenging. A predicating factor is the complexity of the system itself, (see Figure 1).
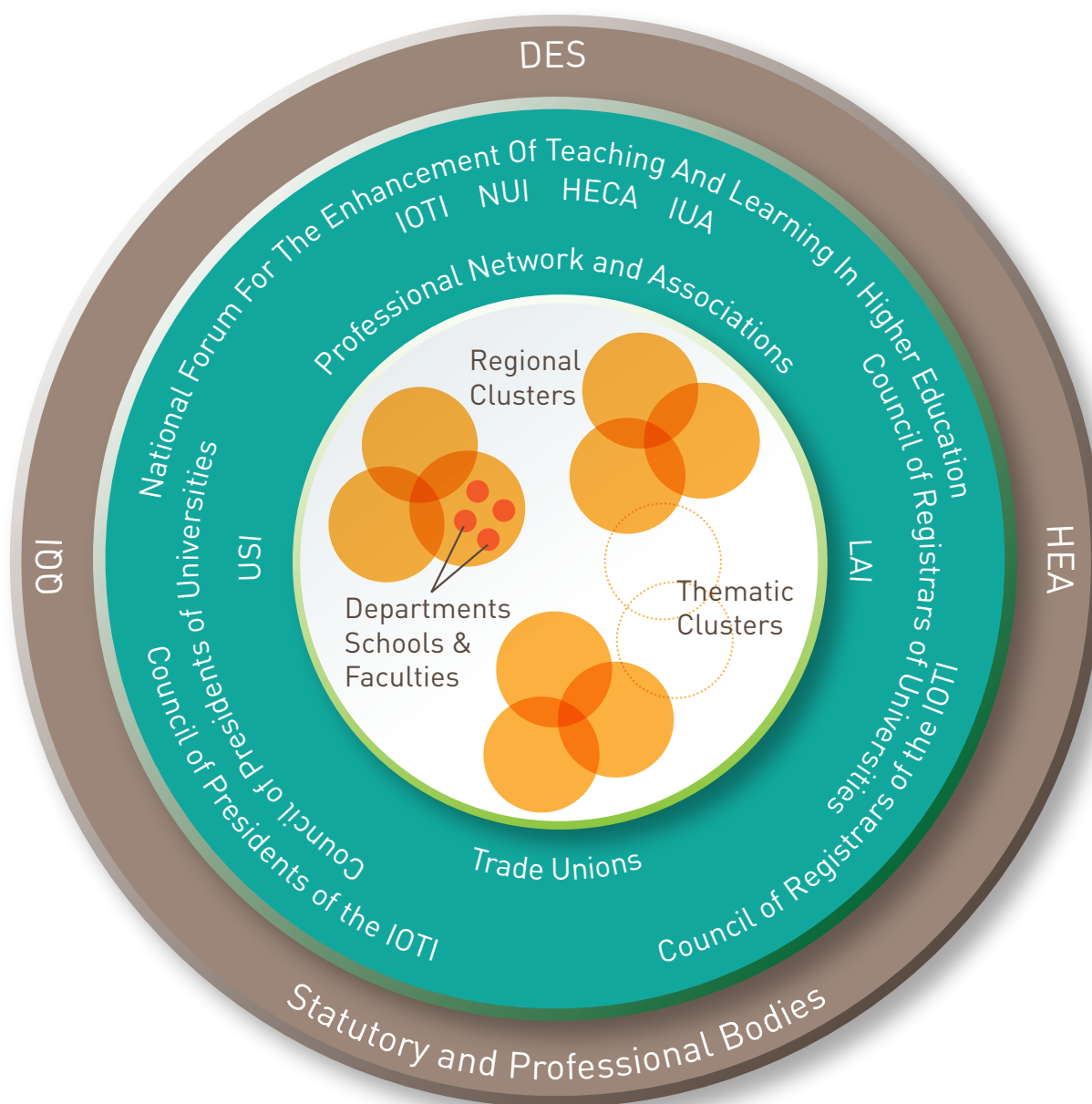

Figure 1 The Higher Education System in Ireland

System-wide change can be difficult to achieve, and although progress may be made at a local level this does not necessarily impact on the system as a whole.

Currently the higher education sector in Ireland is undergoing a period of radical change and restructuring. In the recent publication by the HEA, *Higher Education System Performance First Report 2014–2016*, the reform agenda has been clearly articulated. This report gives the stark reality of where we are in terms of implementing the national strategy (see Table 3). The number of higher education institutions will reduce from 39 to 25 through mergers and, in some cases, through the establishment of technological universities. In addition, institutions will be required to work collaboratively in regional or thematic clusters.

Along with trends of increasing international demand (and competition) for higher education and this restructuring nationally, the HEA predicts a 10% increase (as a conservative estimate) in new entrants to the sector by 2016. It is anticipated that full-time new entrant places must grow by at least 25% by 2030 to keep pace with the increase in demographic demand. The HEA has expressed concern that such increases in student numbers without adequate resources may impact the quality of the higher education provision. Concerns have also been expressed at the increasing staff to student ratio, currently at 1:19.5 in Ireland when compared with an, OECD average of 1:15–1:16, and increasing issues with regard to student retention.

An interesting and significant feature of the restructuring programme has been the introduction of 'Compacts' between the HEA and each higher education institution (HEA 2014a). These compacts are aligned with a performance related funding mechanism.

Flexible Learning

Not only is the size of the student population increasing, the profile of that population is also changing. Clear targets for the sector in relation to increasing the proportion of adult learners and other under-represented groups have been set and will have to be achieved by the sector. In addition, although the 17% target for flexible provision (as evidenced by part-time and remote learner enrolments) to 2013 has been reached, a further increase to 20% is targeted for 2016. In interpreting the data, definitions can differ and may hide the actual statistics. Within this target, remote learners are projected to double in number. Evidence would seem to suggest that flexible learners will mostly be at postgraduate level or completing continuing professional development (CPD) on a full cost basis. Expansion of flexible provision at undergraduate level presents a challenge for individual students in terms of financial support for part-time study rather than fulltime, being more complex and more prone to change as a consequence of evolving funding models. Regardless, the increased targets proposed will be more achievable by addressing and harnessing the potential of technology to support student access and learning.

Achieving this target will be especially challenging as the data for the sector currently shows a decreasing trend for remote learner numbers from 2009/10 to 2012/13. Further it should be noted that Ireland ranks lower than the OECD average on the international benchmark of flexibility provision (OECD average 27; Ireland 26). The EU average is 24 indicating that higher education in Ireland is heavily weighted towards fulltime provision (HEA 2014).

The demand for access to flexible learning is only going to increase into the future. The concept of a job for life is now considered outmoded and today's professionals are constantly seeking to upskill and diversify their talent portfolios to stay abreast of the rapidly changing requirements of the modern workplace. Increasingly, our current and future students will be looking for high quality flexible provision that they can access anytime, anywhere. Institutions need to go beyond traditional campus-based, part-time education towards real flexibility of time, place and pace of study, placing an increasing onus on building digital capacity. The normalising of the concept of CPD and lifelong learning is an opportunity for the sector, but the infrastructure, the capacity and the resources to prepare for such demands are not in place yet.

Funding of Higher Education

All of these pressures for change are impinging on higher level education in Ireland at a time when the sector has already experienced a reduction of 20% in funding per student. The pace of funding reduction is currently exceeding the ability of institutions to cope, and over one third of institutions reported a budget deficit in 2014 (HEA 2014). In addition to reduced funding, the model of core institutional funding is changing with 19% of funding now coming from private student contributions (excluding student grants). This changing model of funding means that institutions must urgently address issues of poor student retention or face potentially threatening negative financial consequences. The HEA (2014) report on student progression *A Study of Progression in Irish Higher Education Institutions 2010/11 to 2011/12* highlights that the proportion of new entrants in 2010/11 who did not progress one year later was 16%, up from 15% in 2007/08 across all sectors and National Framework of Qualifications (NFQ) levels. Rates also differ considerably according to the sector, ranging from 24% in an institute of technology to 9% in a university and 4% in other colleges. Progression rates vary greatly across the different fields of study. The highest rates of progression are amongst the profession-orientated courses and the lowest rates of progression were found amongst Computer Science, Services and Engineering and Construction. However significant improvements in Computing non-progression rates are seen across all levels from 2007/08. Decreasing from 35% to 31% at level 6, 36% to 34% at level 7 and 25% to 23% at level 8.

National initiatives like the Springboard scheme brings new cohorts of part-time learners into higher education, via the live register. However the Forum's consultation process revealed a widespread perception across the higher education providers that the current fee deferential for undergraduates continues to present a significant barrier to attracting part-time students at this level. Recent international experience in part-time enrolment suggests a disconnect between the potential and actual uptake (in the UK for example there have been significant drops in part-time students, and indeed recent figures from the Open University have further emphasised this (Parr 2015)).

'The HEA highlights its concerns regarding the funding of the higher education sector by urging the development and implementation of a comprehensive policy on the funding of higher education be made a national priority requiring a whole of government response.'

(HEA 2014a p.13)

Any digital strategy needs to be cognisant of this complex context, seek opportunities where the technologies can help to ensure that the student and staff experiences are genuinely enhanced, rather than worsened, and ensure that the funding challenges do not prevent the necessary investment in the core technology infrastructure needed to deliver a modern, high-quality higher education. Considered use of technology, appropriately resourced, can be a vital enabler in addressing many of the complex challenges set out above with respect to improved student retention, increased participation by non-traditional students and increased flexibility. Digital capacity (including data analytics) can, for example, provide effective measures to identify at risk students from all cohorts and to provide a range of remedial and other supports.

Table 3   Digital Capacity as an Enabler for the National Strategy for Higher Education.

Higher Education System Performance Report 2014–2016

Realities
- 10% increase in students predicted by 2016
- 25% increase in new full-time entrants by 2030
- Flexible Provision (part-time and remote) to increase from 17% to 22% by 2016. Remote numbers to double by 2016.

Progress Steps
- The new landscape includes regional and thematic clusters and Technological Universities. Higher education institutions to be reduced from 39 to 25.

Significant Challenges
- Staff Student ratio 1:19.5 (compared with OECD average of 1:15-1:16) and differs significantly between different parts of the sector
- Ireland's flexibility score for higher education is 26 compared with an EU average of 24. (Higher Education in Ireland weighted to fulltime provision)
- Performance related funding introduced
- 20% reduction in student funding to date
- New model of core funding with 19% coming from private student contributions (excluding student grants)

Learning Platforms
- Flexibility (Time/Place/Pace)
- Online
- Collaboration

Resources
- Access to high quality digital specific resources
- OER & Licence
- Media
- User Generated resources

Tools to Support Learning Processes
- Social Media
- Support/Access
- APPs

Tools to Support Learning Analytics
- Data Analytics
- Tracking

Institutional Lens

What is set out in the national strategy could not even be considered without making use of the opportunities that technology can provide

By working together as a sector we will strengthen the likelihood that our collective endeavours will lead to systematic national impact in a way that will be of benefit to us all. Fundamentally if institutions are going to change, it is essential that they develop a strategy that identifies leadership responsibilities, structures and supports for the development and embedding of digital capacity in their teaching and learning activities. The strategy must be supported by a clear implementation plan, customised at department level to reflect different starting points and priorities. A clear implementation ensures institutional strategic development impacts significantly on the ground (Figure 2). Departments/schools/faculties have the ability to act either as bottlenecks or enablers of change.

Any teaching and learning strategy supports a variety of approaches to teaching and learning but will have digital enhancement as an integrated component
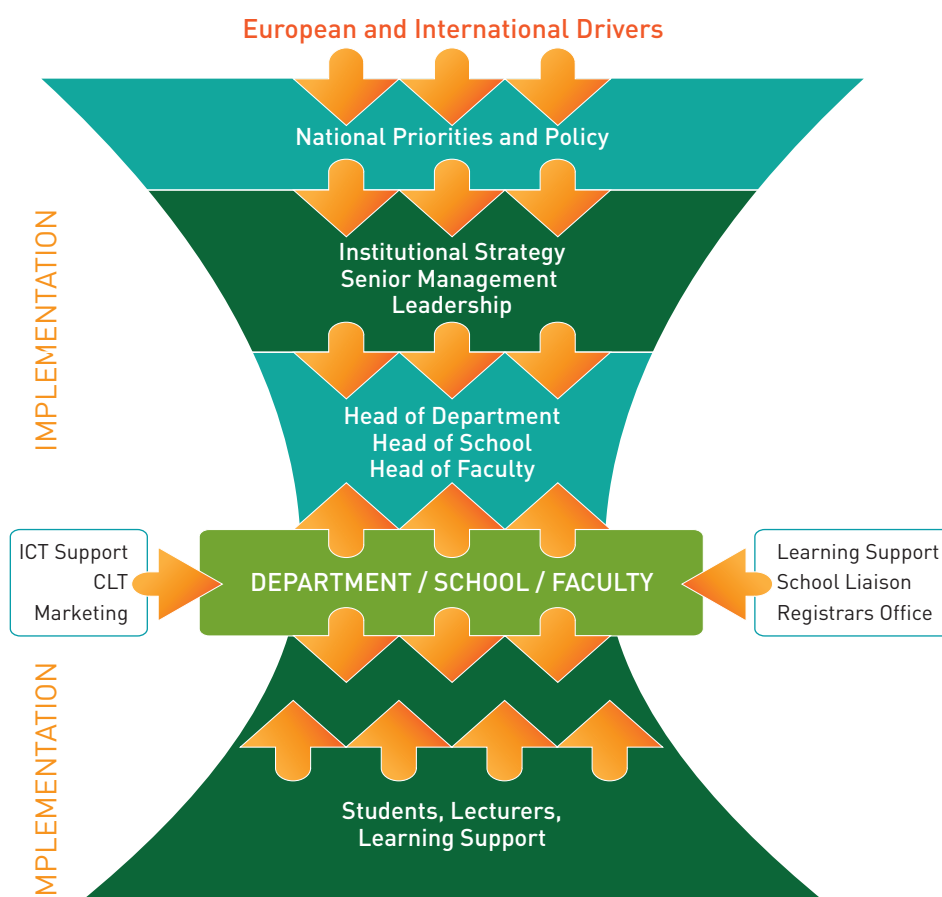
Figure 2   The Implementation of Strategy within an Institution

During the consultation that informed this roadmap, students clearly articulated a number of developments that they would like to see in place to enhance their learning through technology. Figure 3 shows where responsibility for addressing the developments they would like to see put in place would normally reside. It is clear that the department/school level is critical in initiating and implementing change within an institution.
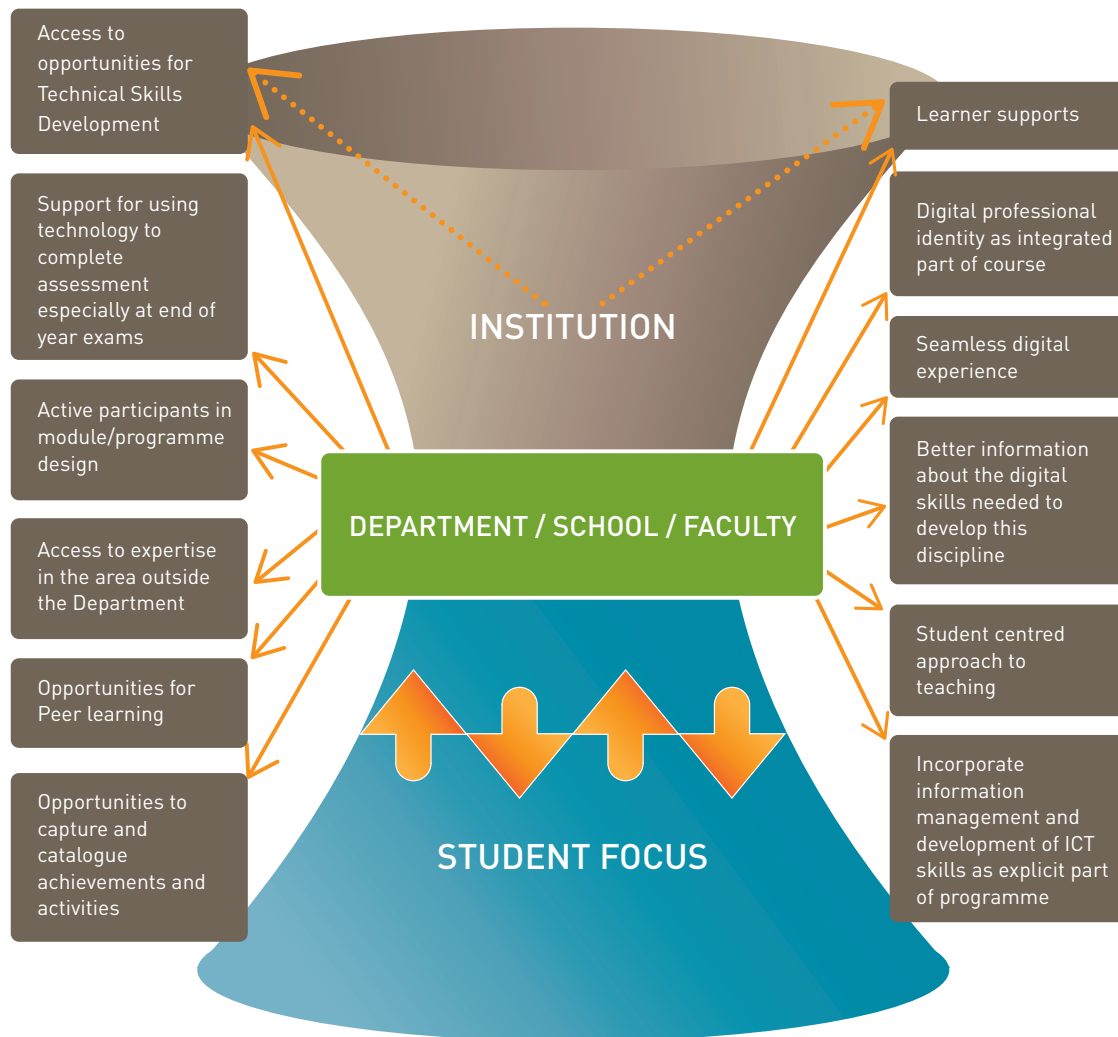
Figure 3 National Survey of Students in Higher Education – changes they would like introduced

The national survey of teachers in higher education focusing on their use of technology to enhance learning (report to be published early 2015) was carried out as part of the consultation for this roadmap. That survey shows that the majority (~80%) of respondents report being 'comfortable with technology' themselves, say that they experiment regularly with technology to enhance their teaching, and perceive that their institutions encourage them to embrace and use technology.

Technology has become pervasive in all aspects of the society we live in so it is only right that it is integrated into how we teach and learn. It is refreshing to see the focus on using technology to enhance T&L and not just as an added extra

I've found technology-enhanced learning has opened up new, creative ways for me to help students engage with the subject matter in meaningful ways.

(Teacher HE Survey response)

I feel confident myself in using technology, but when time is of the essence in a class situation I need to be very clear and confident that what I am using works and can be done in the time allocated, without any technical difficulties.

(Teacher HE Survey response)

Although 94% of the respondents feel technology will have an essential role to play in enhancing their teaching in the future, over 25% reported that they were unsure of the benefits of using technology to enhance teaching and learning.

Lack of continuous professional development and especially the lack of time for CPD and for integrating technology into their classes, along with a feeling of a shortage of technical support, were highlighted as barriers to teachers' use of technology to enhance learning and teaching.

At an institutional level it would appear that in most cases software and technology are available to teachers. Without a collective imperative at the level of academic programmes or a strategic perspective at the level of their academic department, and access to the necessary time for targeted CPD to explore its pedagogical potential and build confidence in its use in the classroom, many teachers perceive that it is difficult for them to use technology to its best effect in their teaching.

Within institutions, some learning technology staff are highly qualified and experienced in education and can act as translators/facilitators/change agents, being able to bridge the gap between specialist academics and the technologies/pedagogies. Central structures tend to provide support for all staff on an individual basis rather than in whole department or discipline specific groupings. The individual approach to provision builds technical competence in those that are already interested in developing their technical capabilities but often does not attract others who do not have the same level of interest.

A department or school-led, coordinated approach to looking at the potential of different technologies within a discipline can complement institutional efforts and can help to increase overall impact, often with a better use of the limited resources available. Discipline groups would have an opportunity to explore technological opportunities to address learning and understanding within their subject domain and to identify particular specialist skill requirements. This shared understanding and competence in using technology would provide the department/school a solid foundation to support further development and innovation

Although my institution is very advanced in online learning we are not really changing our teaching methods that much from teaching full-time students – I feel we could learn a lot about being more innovative in online teaching- if only we had time to do more training and more time to experiment.

(Teacher HE Survey response)

I prefer direct face-to-face contact with students and interactive discussion, and do not encourage the use of IT equipment during my courses.

(Teacher HE Survey response)

In practice it can be hard to find the time/support/ training to fully realise the potential benefits. Developments in my use of technology have tended to happen 'by accident' rather than because of initiatives from the institution.

(Teacher HE Survey response)

through peer-to-peer learning and collegiality. Institutional Information and Computing Technology (ICT) and learning technologist support would be better utilised in such a multi-level, engaged and sustainable approach. However institutions must also provide opportunities for disciplines and departments to work together across their traditional boundaries to ensure sharing of ideas and the realisation of opportunities for innovation beyond the 'signature pedagogy' of individual disciplines.

Developing digital capacity to enhance teaching and learning in higher education requires: a clear institutional strategy and implementation plan; recognition of the department/ school as the unit of change; the utilisation of shared resources more effectively through targeted, planned developments.

Section 3:

Building Digital Capacity: Recommendations for Progress

Through the process of consultation and research, it has been possible to identify four key recommendations which, if addressed, will support building digital capacity to enhance teaching and learning across higher education in Ireland.[15] The sector has to move beyond piecemeal actions, towards cohesive implementation if it is to achieve real impact and the required transformative change. This requires a clear strategy and associated implementation plan (Recommendation 1), working together (Recommendation 2), changing current practice (Recommendation 3), informed by evidence-based research (Recommendation 4).

Recommendations for Building Digital Capacity

Towards Impact and Transformation

Collaboration

Building Digital Capacity

Changing Practice

Strategy with Implementation

Evidence-based Research

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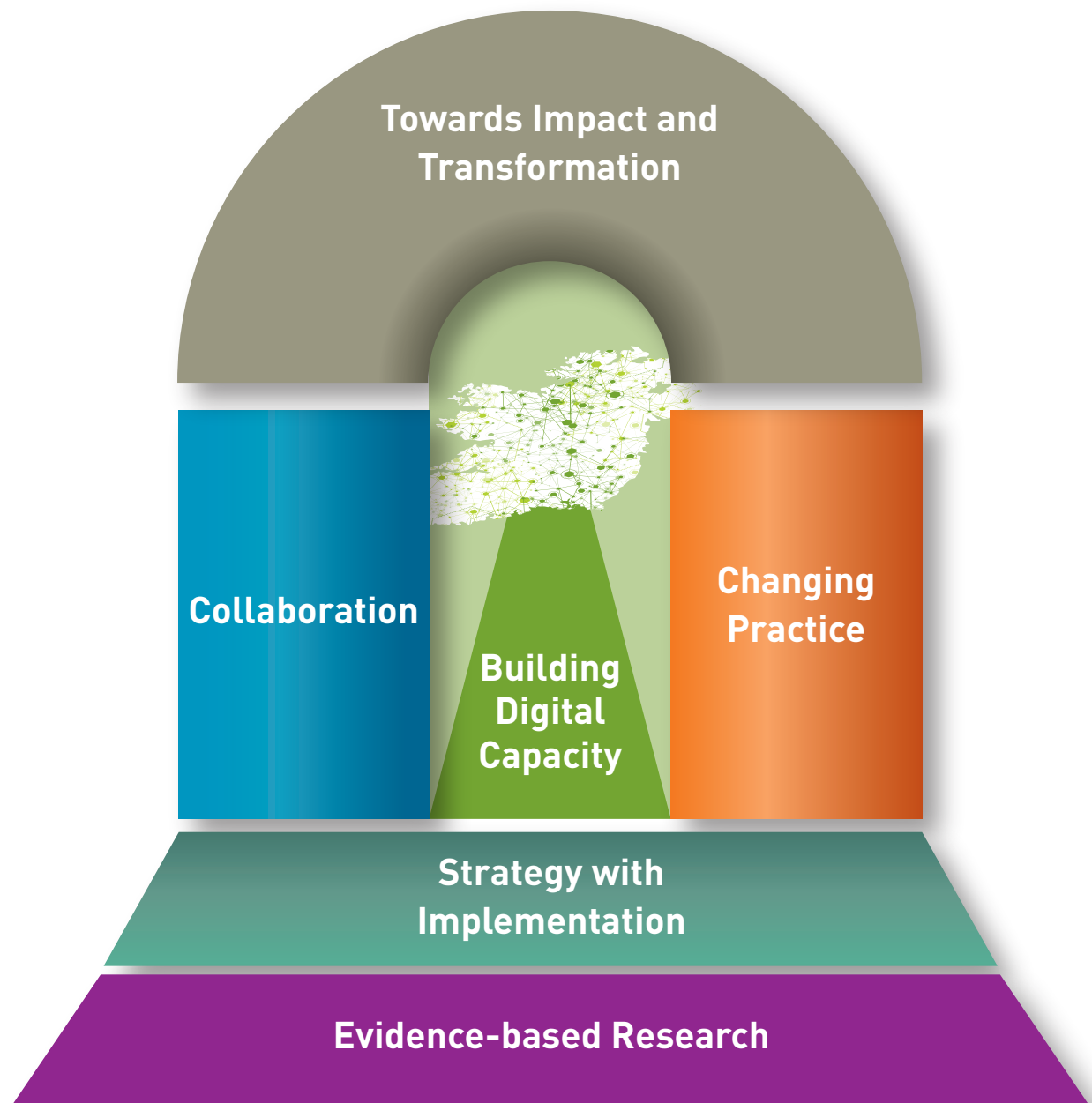
15   Informed by ongoing consultation, the recommendations outlined in the preliminary roadmap (National Forum for the Enhancement of Teaching and Learning in Higher Education 2014) have been refined.

Recommendations and Priorities: a Flexible, Contextualised, Outcomes Orientated Approach

Each recommendation is introduced and the top-level priorities that need to be addressed are identified. For each priority there is a list of questions that institutions/clusters using the document should consider to guide their strategic planning and development. The questions outlined may have greater or lesser relevance depending on the stage of development of the institution/cluster using this document to guide their strategic development. The systems issues that need to be addressed for each recommendation are identified alongside the organisation that potentially should lead these changes. System-led actions will be supported by the National Forum as appropriate. In addition, for each recommendation, the specific role the National Forum can play in supporting the sector is also outlined. The section finishes with the identification of 'What Success Might Look Like' and also lists measurable outcomes for each recommendation. Note that Recommendation 1 (Strategy with Implementation) is more extensive and strategically fundamental than other recommendations and its associated priorities underpin all subsequent development.

Finding solutions to today's and tomorrow's challenges

Recommendation 1	Recommendation 2	Recommendation 3	Recommendation 4
Strategy with Implementation	**Collaboration**	**Changing Practice**	**Using Evidence – based Research**
Prioritise the strategic development of digital capacity in institutional and national policy and quality frameworks in a way that supports innovation for impact	Strengthen and support collaboration within and between institutions, and with different parts of the higher education sector	Develop a consistent, seamless and coherent digital experience for students in Irish higher education	Develop a strong evidence base for enhanced pedagogy
	Develop shared policies and infrastructure that reflect the complexity of an increasingly digital world	Actively engage with students and teachers to develop their digital skills and knowledge	

Recommendation 1

Prioritise the strategic development of digital capacity in institutional and national policy and quality frameworks in a way that supports innovation for impact

Irish higher education has certainly engaged with digital technologies in teaching, research and administration. Much of this engagement is commendable and highly regarded on an international level. Many Irish students are already using technologies in their classrooms and online; enthusiastic educators have imaginatively exploited the potential of new devices and systems; institutions have grappled with infrastructure upgrades; and researchers have sought collaboration and cooperation to investigate the impact of digital tools on learning. Diversity and experimentation are crucial to nurture creativity and identify new opportunities and Irish higher education has seen and continues to see a diverse range of innovation. However, while incremental enhancements in specific settings play an important role in building capacity, such enhancements cannot fulfil their potential for national impact unless accompanied by a coherent and strategic approach to building digital capacity as a whole sector.

At this stage of development, digital strategies for design, development and provision of academic programmes are partial and fragmented. While examples of innovation have proliferated, coherent, adequately supported approaches to digital innovation at programme or departmental levels are not common, and alignment with overall institutional, regional or national strategies for higher education tends to be weak. It is clear that 'one-off' initiatives and reliance on 'non-core' funding and resourcing are not enough. They need to be accompanied by sound mechanisms for wider dissemination, levers for transformation and a strong focus on how once-off initiatives can or should be developed in order to give rise to an innovative sector that uses technology in teaching and learning in impactful and sustainable ways.

The 2014 report from the High Level Working Group on the Modernisation of Higher Education asserts that further progress in building digital capacity requires firm strategic commitment at national and institutional levels across Europe.

The Irish higher education sector is capable of taking the lead in this area, in line with the National Digital Strategy's aspiration to reap the full rewards of a digitally enabled society (which includes key deliverables in education and learning). To do so, however, we need to prioritise the strategic development of digital capacity in institutional and national policy and quality frameworks.

Senior management within HEIs will play a pivotal role in implementing this recommendation, including registrars, VPs, deans and heads of school – in collaboration with programme leaders and innovators on the ground, and heads of relevant support units (IT, Library). However building digital capacity also requires representative organisations e.g., Irish Universities Association (IUA), Institutes of Technology Ireland (IOTI) and Higher Education Colleges Association (HECA) and action at a national level through the Department of Education and Skills (DES), the Higher Education Authority (HEA), the National Forum and other agencies including Enterprise Ireland and IDA Ireland to play their part.

It is vital that there is full awareness of both the opportunities and limitations of digital technologies in teaching and learning, through appropriate briefings, implementation of case studies, guidelines and good practice recommendations, awareness of funding opportunities and national and international projects, and other professional development.

Recommendation 1 – Priorities for Success

1   All higher education institutions should develop and make explicit within their institutional strategies the responsibility and structures to support the development and embedding of digital capacity in their teaching and learning activities

2   Enhance the national policy infrastructure to ensure that policy approaches are effective enablers of digital capacity building at institutional, inter-institutional and sectoral levels

3   Strategy should be informed by a broad, robust and up-to-date evidence base that captures learning from previous and on-going initiatives and is informed by national and international data and case studies

4   A co-ordinated, multi-level approach to foster digital literacy, skills and confidence among students at all levels of education needs to be developed

Recommendation 1 – Priority 1

1   All higher education institutions should develop and make explicit within their institutional strategies the responsibility and structures to support the development and embedding of digital capacity in their teaching and learning activities

Questions to consider with regard to strategy development

- Are the opportunities to enhance the student experience by embedding digital technologies, resources and skills fully considered in:

    (a) Your institutional Strategic Plan?

    (b) HEA Compact submissions?

    (c) Operational plans?

    (d) Teaching & Learning Strategy?

    (e) Professional development programmes?

    (f) Statements of graduate attributes?

    (g) Programme review and design processes?

    (h) Collaborative, multi-institutional agreements?

- Have the linkages between the various support units ensuring effective communication and appropriate processes for the prioritisation and allocation of the necessary resources been clearly allocated?'

- Have sufficient resources to support the development of digital capacity been identified and allocated (including access to appropriate expertise in the form of Learning Design and Learning Technology specialists either within the institution or through clear partnership arrangements with collaborating institutions)?

- What structures have been put in place to foster active collaboration between academic, student, pedagogical and technological expertise?

- Does the Teaching & Learning Strategy make explicit the role of technologies both pedagogically and in the management, provision and analysis of programmes of study, and does it include the integration of digital tools as part of the broad repertoire of teaching methods available to academic staff, and recognise ways in which digital resources can enable student learning and enhance engagement?

- Do processes for the development of new programmes, and the re-design of existing programmes effectively exploit the full potential of digital technologies to enhance the learning experience, widen participation or improve the management and provision of courses (including assessment, methods of credit accumulation, transfer, etc.)?

- Has the development of digital skills, knowledge and competence been integrated into the statements of graduate attributes?

- Do strategies and internal structures effectively maximise the potential of existing resources (technological and human) through careful management and ensuring the right people are doing the right activities?

- Is an institution-wide, integrated approach being taken to building digital capacity to enhance teaching and learning?

Questions to consider with regard to leadership, planning and governance
- Is it clear within your institution, who has overall responsibility for teaching and learning and how digital technologies are aligned and coordinated to support these dimensions?

- Is there a clear articulation of the institutional governance mechanisms that need to be in place so that technology-enhanced teaching and learning is adopted, used, and developed, that its impact is assessed and that there are policies and processes to support this?

- Has a realistic implementation plan for your institutional strategy been developed with identified resourcing implications, which takes a whole institutional enhancement perspective based on institutional mission, student profile, existing practices and which incorporates specific, measurable and achievable targets?

- Do institutional quality assurance processes support and encourage the use of digital technology to enhance teaching, learning, assessment and programme management?

- Have pivotal institutional polices and approaches for teaching and learning activities taken into account issues that relate explicitly to digital learning, including for example: digital aspects of curricular design, the implications of digital learning on quality, digital literacy and digital skills of staff and students; digital reputation, digital footprints and copyright issues?

Questions to consider with regard to supporting discipline-specific, department level and grass roots innovation
- Given the importance of schools/departments as the primary interface between learners and the subject discipline, is their potential for building relevant digital capacity being fully realised?

- Are there processes in place that nurture and accelerate good ideas, showcasing innovative practice and encouraging collaborative networks?

- Has consideration been given as to how the contributions of grass roots academic innovators, in developing and successfully implementing technology in teaching and learning, can be championed and recognised within institutional reward and recognition structures?

- Is the role that digital experiences will play in a student's education clearly communicated to them?

- Are opportunities provided for constructive dialogue relating to students' roles, responsibilities and requirements when it comes to the use of digital technology for teaching and learning?

- Is there regular, formal input by students to strategic developments in technology-enhanced learning and teaching?

- Is there sufficient allocation of time to support innovation and creativity amongst staff and students?

Recommendation 1 – Priority 2

Enhance the national policy infrastructure to ensure that policy approaches are effective enablers of digital capacity building at institutional, inter-institutional and sectoral levels

Questions to consider

- Do the institutions within your regional cluster, or other strategic multi-institutional partnerships, share programme content, or where strategically appropriate, develop programmes collaboratively?

- Do programme progression pathways and recognition of prior learning (RPL) arrangements facilitate student mobility within higher education clusters, as well as nationally and internationally?

- Does your institution actively advise and support (where appropriate) the efforts of policy and funding agencies to develop policies that support digital capacity for enhancing teaching and learning?

Recommendation 1 – Priority 3

Strategy should be informed by a broad, robust and up-to-date evidence base that captures learning from previous and on-going initiatives and is informed by national and international data and case studies

Questions to consider

- Has your institution/cluster/partnership systematically captured and shared case studies of successful and scalable initiatives by working closely with Registrars/ VPs and Teaching and Learning (T&L) Centres?

- How effective is your institution at fostering, nurturing and recording learning innovation in the disciplines and in sharing the outcomes more widely?

- Has your institution given consideration to taking systematic, holistic approaches to the design and development of programmes, using perspectives such as 'Design Thinking'?

- How effectively does your institution enable and respond to the views of your students?

Recommendation 1 – Priority 4

A co-ordinated, multi-level approach to foster digital literacy, skills and confidence among students at all levels of education needs to be developed

Questions to consider

- Has a multi-level implementation strategy, which identifies clearly the supports and implementation pathways for Heads of department/schools/faculty to implement digital literacy skills and concepts been developed?

- Are the development of digital skills, knowledge and competence explicit in learning outcomes, assessment and programme design?

- Is there a robust evaluation protocol in place to map and evaluate the implementation of a skills and concepts framework which can be used to revise and enhance pedagogy, development and supports for learners and teachers?

System-led Actions to be Addressed

1   Establish a digital education foresight group to bring together representatives from across the education sector to identify the most critical issues which can enable convergence and integration of the digital learning experience at important points of transition in the educational lifecycle, from primary to post-primary, post-primary and further education to higher education (DES)

2   Agree a common language of core concepts relating to digital capacity building for teaching and learning – and ensure this language is shared between the education sector, policy makers and funding bodies (DES)

3   Encourage the development of digital capacity and new modes of teaching and learning to be considered as an integral part of the strategic dialogue process with HEIs (HEA)

4   In the development of regional clustering and institutional alliances, encourage digital capacity building to ensure critical mass and the sharing of resources, expertise and good practice across regional clusters; (HEA, IUA,IOTI, Regional Clusters)

5   Facilitate learner mobility strategically, through the development and implementation of a single lifelong learning ID which permits learners to move easily across institutions within the higher education sector, transfer and accumulate credit (DES, HEA, IUA, IOTI, Regional Clusters)

6   Progress the development of new modes of learning using digital approaches, specifically in relation to institutional approaches (through institutional review) and in programme design, delivery and enhancement (through programme approval, review and monitoring policies); Quality and Qualifications Ireland (QQI)

7   Review the remaining funding barriers to participation in part-time undergraduate education which is still perceived by institutions to be a disincentive to the growth of part-time and flexible programmes and also inhibits participation in higher education from a learner perspective (HEA)

How the National Forum will Support Recommendation 1

- Incorporate a strong focus on building digital capacity in Ireland's Professional Development Framework (in conjunction with a range of pedagogical competencies):

  - Incorporate relevant leadership development and CPD opportunities for Senior Management including Head of Department (HOD), to stay up to date with emerging national and international developments in digital education

  - Ensure that those who teach in higher education have access to professional development opportunities that enable them to 'remain in good standing' when it comes to the up-to-date use of digital technologies for teaching and learning

- Facilitate the development and sharing of digital literacy expertise through phase 2 of the National Forum's Learning Impact Awards initiative

- Ensure that the emerging Professional Development Framework recognises the development work of embedding students' digital literacy skills and concepts in the curriculum

- Encourage through the National Seminar Series the showcasing and sharing of digital literacy initiatives in teaching and learning

- Build an evidence base of successful initiatives that have demonstrated impact which can be used as the basis for deepening and strengthening digital capacity across the education sector through the showcasing of good practice

- Extend the National Forum Resource section on the Forum website to include a digital "one stop shop" comprising a range of thematic initiatives and resources offered in case study format to address important themes, ensuring that digital, flexible, online and technological innovations are fully exploited

- Provide relevant workshops and symposia for the higher education teaching and learning community aimed at facilitating innovation and change

- Provide targeted funding through the Teaching and Learning Enhancement Fund (2014) Building Digital Capacity to address a number of these specific goals, including digital skills development, review of infrastructure and fostering collaboration

- Through the current, and subsequent enhancement themes, specifically address issues of shared importance to the sector e.g., transitions to digital, flexible, online learning alongside 'transitions into employment'

- Support and facilitate system led actions as appropriate

What Might Success Look Like?

Recommendation 1

Prioritise the strategic development of digital capacity in institutional and national policy and quality frameworks in a way that supports innovation for impact

If Recommendation 1 is successfully implemented, the following kinds of outcomes can be expected:

- Every higher education institution in the sector will have a strategy and implementation plan for the development of digital capacity to enhance teaching and learning

- Strategies will be aligned across regional clusters or other multi-institutional partnerships, as appropriate

- Strategies will be realistic and clear about where institutions are positioned currently and will set real targets for where they want to be in 2017

- Departments/schools/faculties will take an active role in supporting and mobilising grass roots innovation to enhance teaching and learning

- Students, regardless of their registration as full-time, part-time or distance learners will have an improved, more integrated learning experience, enhanced with technology appropriate to their needs

- There will be increased use of active learning approaches to the student experience that harnesses the potential of technology, while building digital skills and confidence

- Higher education policies and funding will enable and support institutions in their commitment to build digital capacity

- There will be a more coherent approach and improved communication and transition between all levels of education, facilitated by the effective use of technology

Recommendation 2

Strengthen and support collaboration within and between institutions, and with different parts of the higher education sector; develop shared policies and infrastructure that reflect the complexity of an increasingly digital world

Building digital capacity and developing associated new pedagogies will not be achieved without investment of both time and money. Collaboration across the sector can help to reduce unnecessary duplication of effort and costs and can optimise scarce resources. The benefits of sharing knowledge across institutions have long been acknowledged in Ireland and elsewhere. However, inter and intra collaboration at departmental and programme level can sometimes be regarded with suspicion, as a threat rather than an opportunity. This is not surprising: teaching and learning have largely evolved as private activities, and what transpires in a classroom or lecture theatre, and in subsequent assessments, have traditionally been seen as a quasi-private matter between tutor and student. In turn, student feedback on course quality and content has officially been a matter for the lecturer alone.

In an increasingly digital world, however, this is changing: students record, photograph and Tweet their lectures, and the capacity to capture and archive video and audio from traditional lectures has become more widespread and simplified. There are also concerns in learning environments about the use and misuse of social media. However, there is much that is positive to be derived from developments in teaching and learning that are afforded by technology. Apart from its potential to increase access, possibilities now exist for meaningful collaboration within and across disciplines and institutions, which in turn can provide more expertise and more flexibility for students and staff alike. There is for example, now greater scope for joint programmes delivered collaboratively by multiple institutions and international partners. The potential also exists for the creation of a transferable national student identity system, which would allow students to build their personal education portfolio in a more coherent way. Additionally, higher education IT professionals acknowledge that, where possible, having a sector-wide system for registration, finance and a uniform, national approach to recording academic achievement which allows students to accumulate and exchange

credits between and across institutions and which facilitates lifelong learning are all possible ways in which to improve efficiency across the sector. The challenge is to get the right balance, to maintain distinctiveness of particular programmes, serve students' desire to belong to and identify with an institution, and yet at the same time foster greater collaboration.

High student demand for, and expectations of, resources and high-quality infrastructure (campus-wide Wi-Fi, for example) has emerged at a time when investment has been reduced, resulting in systems that are not necessarily fit for purpose. The possibility of greater use of agreed (perhaps cloud-based, for example) shared services within the sector is worth continued consideration in this context. (HEAnet has a role to play in some of this, perhaps not least as a negotiator on the sector's behalf). There is already a high level of co-operation across IT and library services, which needs to be encouraged in other sectors by management, and which will address issues of policy development and legal matters (copyright, IP, etc.). Collaboration within and between institutions, and with different parts of the higher education sector can be used to build on current good practice and create a basis for team-based approaches to programme and curriculum design. These in turn can be used to foster more targeted staff development programmes, policies and practices.

Recommendation 2 – Priorities for Success

1 Higher education institutions should work collaboratively to develop processes and policies that enable innovation and development in a regulated and increasingly digital world

2 Institutions should pilot stronger team-based approaches (involving teachers, students, IT and academic support staff) to teaching and learning, curriculum design and programme development; new modes of learning and innovation should be integrated from the outset of such pilots

3 Higher education institutions should ensure that when reviewing their technological infrastructure they give sufficient regard to the need to continue to build, and sustain the digital technologies that underpin high quality teaching and learning

Recommendation 2 – Priority 1

Higher education institutions should work collaboratively to develop processes and policies that enable innovation and development in a regulated and increasingly digital world

Questions to consider

- How has your institution/cluster built on previous collaborative ventures to develop effective, transferable approaches to the development of multi-institutional collaboration?

- Does your cluster/partnership/network regularly collate and combine the shared experience of individual institutions on the crucial factors for effective collaboration and is this used to inform and guide the development of a Memorandum of Understanding (MoU)?

- How does your institution support collaboration across courses/practices/platforms and infrastructure/ information systems/student record systems within the institution and across your regional cluster or other multi-institutional partnerships?

- Does your institution work collaboratively with organisations such as HEAnet to achieve better efficiencies of shared digital services (including nationally negotiated software licensing arrangements and equipment procurement), thereby exploring and leveraging the potential of, for example, learning analytics and big data?
  - What financial saving has been made as a result of using shared services?

- How well does your institution identify opportunities for inter-institutional collaboration around programme development, delivery and recognition?
  - How have these processes for collaboration been initiated?
  - Are there examples of inter-institutional collaborative programme development?
  - Has the process been reviewed to inform future collaborations?
  - How are successful initiatives used across institutions as case studies of good practice?

- Is there an open and transparent process in place within your cluster or partnership that enables a shared review and development of policies especially in regard to the security of individual digital identity, data protection, copyright, ethical considerations, professional standards and intellectual property?

- How are policy development priorities identified and workload shared across such collaborations?

- What does your institution do to ensure staff and students are aware of institutional, national and European policies that impact on their teaching and learning?

- Are your digital champions recognised/rewarded?

Recommendation 2 – Priority 2

Institutions should pilot stronger team-based approaches (involving teachers, students, IT and academic support staff) to teaching and learning, curriculum design and programme development; new modes of learning and innovation should be integrated from the outset of such pilots

Questions to consider

- Is there evidence of collaboration within and across disciplines in your institution?
  - How is good practice captured and shared across the institution?
  - What opportunities are provided for fostering inter-disciplinary collaboration?
- Does your institution support disciplines to work collaboratively across clusters or multi-institutional partnerships for new programme development or existing programme review?
- How well does your institution enable and respond to contributions from wider stakeholders (employer, community groups...) to inform programme development, delivery and recognition?
- Does the programme development and review process within your institution actively engage students, librarians, IT specialist and academics as vital partners in a team-based approach?
- Is there a requirement in programme development and validation for a multi-skilled team based submission and is the institutional (or cluster) expertise in learning design, technologies and student support fully utilised at these stages?
- What scope is there for mandating consideration of new modes of teaching and learning in all new programme proposals and in the review of existing programmes?

Recommendation 2 – Priority 3

Higher education institutions should ensure that when reviewing their technological infrastructure they give sufficient regard to the need to continue to build, and sustain the digital technologies that underpin high quality teaching and learning

Questions to consider

- Is there a complete, accurate and up-to-date picture among senior management of existing technical provision, supports and the way they are currently used (as viewed through the lens of all stakeholders, IT specialists, students, academic and administrative staff, librarians support staff)?
- Are the institutional resource prioritisation and allocation models aligned with the strategic imperative to use technology to enhance teaching and learning?
- To what extent do current budget allocations and projections effect a re-prioritisation of teaching support and development?
- Does your institution provide adequate opportunities for capturing informed expertise and input from its broad range of constituencies (academics, academic support staff, administrators and students) in the development of digital capacity and strategy?

- How well does your organisation recognise that curriculum design and teaching are professional activities for which there is available expertise (some with specific professional skills such as in learning design, technologies, academic literacies) and leverage this to effectively use resources and skills in the improvement of the learning experience?
  - What examples of previous or on-going good practice can be identified?
  - What mechanisms are in place for sharing good practice?
- How well does your institution recognise the department/discipline groups as the key facilitators of change, target institutional support at this level and have appropriate reward systems for significant team-based and collective achievements?

System-led Actions to be Addressed

1 Encourage a shared-services approach and national licensing agreements where appropriate (HEA, HEAnet, IUA, IOTI, DES, Office of Government Procurement)

2 National agencies should work together to ensure bureaucratic barriers and unintended consequences are minimised for the higher education sector (DES, HEA, QQI and other appropriate agencies)

How the National Forum will Support Recommendation 2

- Fund a review of technical infrastructure through the Teaching and Learning Enhancement Fund 2014 (Building Digital Capacity) to be completed in partnership with the IUA, IOTI and HECA

- Ensure the national learning impact awards include award categories for discipline and team-based teaching and learning excellence

- Linking to and disseminating across the sector information about existing available resources, tools, software licence agreements, copyright requirements, and opportunities for national and international collaboration (in partnership with HEAnet, the academic libraries community and sister institutions internationally)

- Support the provision of guidelines and frameworks for digital policy and partnership development based on key policies, that can be customised to fit local cluster/institution/partnership requirements

- Support and facilitate system led actions as appropriate

What Might Success Look Like?

Recommendation 2

Strengthen and support collaboration within and between institutions, and with different parts of the higher education sector; develop shared policies and infrastructure that reflect the complexity of an increasingly digital world

If Recommendation 2 is successfully implemented, the following kinds of outcomes can be expected: Higher education institutions should be able to work collaboratively to develop processes and policies that enable innovation and development in a regulated and increasingly digital environment

- Higher education institutions will be able to work collaboratively to develop processes and policies that enable innovation and development in a regulated and increasingly digital world

- Institutions will pilot stronger team-based approaches (involving teachers, students, IT and academic support staff) to teaching and learning, curriculum design and programme development; new modes of learning and innovation should be integrated from the outset of such pilots

- Initiatives are in place that specifically provide opportunities for staff to appreciate and understand the complex policy environment within which they work (to include policies at institutional, cluster, national and international level)

- Evidence will show that departments take an increasingly active role in driving change within an institution

- Higher education institutions will ensure that when reviewing their technological infrastructure they give sufficient regard to an institutional strategy for digital learning/digital capacity building and develop a strategy for ongoing development

Recommendation 3

Develop a consistent, seamless and coherent digital experience for students in Irish higher education and actively engage with students and teachers to develop their digital skills and knowledge

In line with the *National Strategy for Higher Education to 2030*, active student participation is recognised as necessary in order to develop digital capacity across the sector in Ireland. Students must be engaged and active learners, experiencing education as both fulfilling and challenging. However, generalisations about the digital competencies of students are best avoided, as are simplistic assertions about how students learn. Students are often (although not always) more comfortable working with certain types of technology than are their teachers, but the evolving nature of scholarship in an information-rich and increasingly digital world also must be recognised. Digital tools can provide a route to pedagogical innovation, and there is an identified willingness among academic staff to use such technology as part of their teaching practice. However, many rightly question the 'technological imperative' and the danger of adopting 'technology for technology's sake'. VLEs, while valuable as tools for course management and communications, have evidently not been deployed to their full pedagogical potential: evidence points to their use primarily as a mechanism for storing documents and transferring information.

To achieve real progress in an era of constant technological change, opportunities for innovation need to be recognised and assessed appropriately. For example, ubiquitous mobile devices such as tablets and smartphones may offer pedagogical opportunities not previously recognised or explored. There is a need to develop the digital skills and competencies of staff and students alike, equipping both to adapt imaginatively to a complex world that is increasingly digital. It is critical to the development of innovative and engaging learning through technology, that teaching staff are provided with the resources, space and time to achieve this. Support and training on a continuous basis throughout the year is necessary, allowing lecturers to manage and avail of training and support at times suitable to them. To this end, the development of digital literacy among staff is of immediate importance and should be addressed through a coordinated programme of professional development. Digital literacy as a life skill is a key component for building

digital capacity in Irish higher education (aligning with Pillar VI of the Digital Agenda for Europe). Formal certification for lecturers in teaching and learning should explicitly include digital literacy, while recognition and rewards for the time and effort spent in achieving such certification will be necessary. The importance of digital professionalism and digital identity, along with the associated ethical and legal considerations, must also be addressed across the sector. A clear understanding of what pedagogical strategies are most effective for a diverse range of learners and disciplines can only be established through building a solid evidence base incorporating previous knowledge and experience and subjecting this to rigorous, critical, academic scrutiny. Essentially, this embeds the scholarship of teaching and learning in the digital age into routine academic practice, positions pedagogy ahead of techno-centrism and sees all teaching and learning methods (whether digital, non-digital, or hybrid) as part of a broad professional repertoire at the disposal of reflective, confident and creative practitioners.

Recommendation 3 – Priorities for Success

1. Institutions should have in place clear policies about the use of technology for teaching, learning and assessment activities in order to facilitate a coherent digital experience for students and staff

2. The barriers to the development, acquisition and application of digital skills and knowledge among academic staff and students need to be addressed and the relevant structures to actively support such development need to be put in place

3. Professional development frameworks and opportunities for developing digital skills and knowledge amongst academic staff and professional staff need to retain a pedagogical focus with an emphasis on learning design

4. Ensure that the technologies used do not disadvantage particular groups and that guidelines, recommendations and indeed legislation, (on, for example, accessibility) are adhered to where this is possible/required

5. Develop and implement open education principles and practices for Irish education that are aligned with EU policy and emerging international practice

Recommendation 3 – Priority 1

Institutions should have in place clear policies about the use of technology for teaching, learning and assessment activities in order to facilitate a coherent digital experience for students and staff

Questions to consider

- Are institutional goals and expectations for the digital experience of staff and students clear and transparent, and communicated effectively across the institution?

- Does your institution/cluster have an agreed statement of the institution's understanding of the key components of digital literacy and how they are defined and used?

- Is there clarity on the baseline levels of engagement with technology in each school/department/discipline and have targets been identified for enhancement of skills, confidence and digital fluency at the individual staff member and departmental levels?

- Is there clarity about the roles of digital technologies in promoting learning, in making sense of diverse sources and types of information, in decoding media and resources, and in constructing new understanding?

- Does programme design and delivery develop critical academic literacies and confidence ?

- Is the building of digital knowledge and skills by students embedded within their programmes of study and facilitated through appropriate learning supports and facilities?

- Do you encourage students to actively engage in the co-creation of materials and knowledge artefacts as part of the digital learning experience?

- Has consideration been given as to how to evaluate the impact of digital resources and technologies on the achievement of relevant learning outcomes?

- Are digital skills and confidence reflected in statements of graduate attributes, programme information and promotional materials?

- Have you adopted where appropriate ePortfolios/digital transcripts/backpack for digital badges or similar for students as part of the overall experience throughout their course of study (and possibly afterwards)?

Recommendation 3 – Priority 2

The barriers to the development, acquisition and application of digital skills and knowledge among academic staff and students need to be addressed and the relevant structures to actively support such development need to be put in place

Questions to consider

- Are resources pooled centrally to develop online and blended training programmes to be delivered across all institutions?

- Have relevant approaches to support digital literacy as best fits the local context, aligning the efforts of core teaching and learning functions with other relevant central services (student support, access office, library, IT department, international office) been developed? Such developments could also include regional or wider national partnerships to build expertise and share resources

- Has consideration been given as to the extent to which specialist technologists, educational developers and instructional designers are available and resourced to support digital literacy across your institution/ cluster/partnership and identifying common components of the role of such staff (including adapting existing models of good practice)?

- Does the provision of CPD for staff reflect priorities set out in the institutional strategy?

Recommendation 3 – Priority 3

Professional development frameworks and opportunities for developing digital skills and knowledge amongst academic staff and professional staff need to retain a pedagogical focus with an emphasis on learning design

Questions to consider

- Has the institution's strategy for digital capacity been aligned with the professional development offerings for academic and professional staff?

- Is there evidence of effective partnership between specialist teaching and learning supports and ICT services within the institution to ensure a pedagogical focus on digital literacy in day-to-day activity as well as focused development activity? How is good practice shared?

- How does your institution ensure that any commonly agreed frameworks for digital literacy and competences are reflected in professional development provision and integrated into learning design processes for academic programmes?

- Are opportunities provided to promote and facilitate personalised learning?

Recommendation 3 – Priority 4

Ensure that the technologies used do not disadvantage particular groups and that guidelines, recommendations and indeed legislation, (on, for example, accessibility), are adhered to where required

Questions to consider

- Is there a plan in place that requires a regular review of the existing ICT infrastructure to ensure appropriate capacity and accessibility of technologies across a range of devices and ensure adequate capacity both locally and through shared services at a national level (via HEAnet, for example)?

- How does your institution ensure that it complies fully with all legislation and good practice recommendations in providing adequate supports for students and staff with particular learning and support needs with respect to technologies?

- To what extent has the institution's senior management prioritised budget allocations to a phased upgrading and expansion of network capacity and IT infrastructure to meet the anticipated growing demand and to keep pace with technological innovation?

Recommendation 3 – Priority 5

Develop and implement open education principles and practices for Irish education that are aligned with EU policy and emerging international practice

Questions to consider

- Has your institution adopted the principles of open education and encouraged the development of OERs?

- Does your institution or cluster/partnership support a digital repository system for research and teaching resources? How is the level of engagement with such by staff measured and promoted?

- Has your institution considered developing approaches via local repository managers to ensure that professional development resources, tools, protocols, evidence and learning design processes are actively incorporated into local repositories?

- Has consideration been given to issues of inclusivity?

- Have you ensured that your staff and students are familiar with and encouraged to have appropriate data backup?

System-led Actions to be Addressed

1   Agree the core elements that define the description/framework for the role of educational developer and learning technologists for the sector including career pathways and progression points for development in HE (Human Resources managers nationally, EDIN (Educational Developers in Ireland Network), Irish Learning Technology Association (ILTA), Trade Unions)

2   Irish leaders in the field of open education to agree a national policy for hosting teaching and learning open education resources in existing institutional repositories (National Network of Digital Repository Managers, LAI, CTL)

3   Encourage and support the adoption and dissemination of the open-education principles across the sector, especially in relation to teaching and learning outputs (HEA, HEANet, Library groups, USI, Irish Research Council, National Forum)

4   A fit-for-purpose national copyright regime which works at all levels of education for creators, users and owners must be developed (led by the Copyright Council of Ireland, higher education interests informed by IUA, IOTI, HECA)

5   Co-ordination of funding mechanisms/key targets to ensure that the open education principles are adopted locally and adhered to by higher education institutions (HEA)

How the National Forum will Support Recommendation 3

- Ensure the national professional development framework incorporates the needs of those working as educational developers and learning technologists

- Promote the adoption of open education principles (including the production and re-use of OERs) across the sector and facilitate uptake through collation of relevant research, international case studies and policy documents

- Support the development or adoption of agreed metadata structures to enable teaching and learning objects to be curated into and accessed through institutional and shared repositories (in partnership with key stakeholders)

- Include the development of digital skills and knowledge as an explicit component of the Forum's consultations for the emerging professional development framework and ensuring that it is line with any commonly agreed definitions and frameworks for digital literacy

- Provide support and development opportunities for Heads of School as strategic digital champions and leaders

- Create opportunities to showcase excellence/innovation through either thematic or disciplinary networks

- Support and facilitate system led actions as appropriate

What Might Success Look Like?

Recommendation 3

Develop a consistent, seamless and coherent digital experience for students in Irish higher education and actively engage with students and teachers to develop their digital skills and knowledge

If Recommendation 3 is successfully implemented, the following kinds of outcomes can be expected:

- There will be evidence of coordination across the range of actors including librarians, academics, IT specialists, learning support staff in the provision of a seamless digital experience for students

- Digital skills and knowledge development will be integrated into the national professional development framework

- Graduate attributes will incorporate digital awareness and literacy

- Institutions will adopt open education principles with regard to teaching and learning resources and practices

- Open educational resources will be developed and shared nationally through institutional or shared repositories

- The issues of copyright and intellectual property in higher education will be clarified at a national level

Recommendation 4

Develop a strong evidence base for enhanced pedagogy

Of itself, technology will not enhance the learning experience: teachers and an informed pedagogy are what is needed to achieve that. Teachers consciously look to technology to open and enhance opportunities for interactivity and collaboration with and amongst their students and teaching colleagues. However, they remain cautious that technology may perpetuate a pedagogy of transmission instead of promoting a more active learning paradigm. To this end, evidence regarding what works and support in evaluating emergent digital pedagogies and their application in different academic disciplines are required in order to improve teaching practices and thus, in turn, inform staff CPD. This may include discipline-specific support, along with structured spaces and opportunities to engage in peer collaboration around technology-enhanced learning. Such supports and training need also to be available for those who teach part-time, or as distance learning tutors. To date, few institutional policies yet fully address issues around evidence-based pedagogy or staff development in technology-enhanced teaching, nor are sufficiently 'nimble' to respond effectively to emerging new technologies and pedagogies. Meaningful and enabling strategies and targets require to be elucidated by institutional management.

Recommendation 4 – Priorities for Success

1   Encourage and facilitate high impact, (internationally recognised) scholarship in digital pedagogy and build links with international communities of research through the development of an infrastructure/framework at national level

2   Prioritise the development across the sector of high impact practices that leverage the potential of digital technologies to support student learning and substantially contribute to evidencing pedagogical excellence

3   Foster and develop an informed approach across the sector, towards the potential of data analytics to inform pedagogical enhancements whilst giving due regard to the importance of process integrity for gathering and analysing such information

4   Ensure that workload models adequately reflect the need for reflection on, scholarship in, and creative exploration of, digital capacity building, new pedagogies and learning/data analytics

Recommendation 4 – Priority 1

Encourage and facilitate high impact (internationally recognised) scholarship in digital pedagogy and build links with international communities of research through the development of an infrastructure/framework at national level

Questions to be considered

- To what extent does your institution embrace a culture of evaluation, assessment of impact, and dissemination of innovation, scholarship and research on teaching and learning including technology enhanced approaches?

- Are there institutional/partnership goals and targets for the development and production of high quality (as indicated by international level publication) pedagogical research (particularly in aspects of technology use)?

- Has your institution a process in place to fund and showcase local innovation projects by individual staff or teams?

- Has the development of teaching and learning research expertise been incorporated in the institutional strategy and its potential adequately recognised across all disciplines?

Recommendation 4 – Priority 2

Prioritise the development across the sector of high impact practices that leverage the potential of digital technologies to support student learning and substantially contribute to evidencing pedagogical excellence

Questions to be considered

- How does your institution facilitate and encourage the sharing of best practice (particularly in the area of digital learning) internally and externally? Is participation in relevant networks, professional bodies and conferences/workshops supported?

- Does your institution have processes in place which enables teaching and learning output to be included for consideration for staff promotion and progression and any other measures of teaching excellence and how the digital aspects of this output are captured and recognised?

- Does your institution effectively leverage the potential of digital tools to nurture student learning through diagnostic testing, analytics, formative and summative assessment and similar approaches? How is technology being used to develop learner autonomy, personalised learning, and contribute towards the support needs of an increasingly diverse student population?

Recommendation 4 – Priority 3

Foster and develop an informed approach across the sector, towards the potential of data analytics to inform pedagogical enhancements whilst giving due regard to the importance of process integrity for gathering and analysing such information

Questions to be considered

- How effective are your institutional policies in clarifying approaches to data gathering and providing unambiguous information to learners and staff about their rights of privacy? Do you regularly audit practice to ensure full compliance with all relevant data protection legislation, good practice, the principle of informed consent, and ethical frameworks?

- How well does your institution use data/learning analytics to inform ongoing development of strategy, policy, and teaching practice?

- Does your regional cluster or multi-institutional partnership create opportunities for individual institutions to share learning from practice and validated approaches to learning analytics and their links to pedagogical practices and enhancement?

Recommendation 4 – Priority 4

Ensure that workload models adequately reflect the need for reflection on, scholarship in, and creative exploration of, digital capacity building, new pedagogies and learning/data analytics

Questions to be considered

- How does your institution ensure parity of esteem between teaching and research, where appropriate? To what extent are levels of activity and quality of outputs produced in each case measured and considered?

- How well are notional measures of staff effort properly reflected in relevant institutional policies and working practices locally within disciplines and schools including workload allocation models, Performance Management Reviews (PMR), etc.?

System-led Actions to be Addressed

1 Support sector-wide development of policies which: clarify approaches to data gathering and provide unambiguous information to learners and staff about their rights of privacy, data ownership by third party providers, duty of care, protection of minors and all other relevant requirements (HEA, IUA, IOTI, HECA)

2 Negotiate sectoral agreement on the development of programme innovation and integration of new modes of teaching and learning for inclusion in Workload Allocation Models (IUA, IOTI, HECA)

How the National Forum will Support Recommendation 4

- Include mandatory evaluation of impact assessment of outcomes for all supported through the Teaching and Learning Enhancement Fund projects

- Support research in the use and effectiveness of new approaches to teaching and learning, ensuring that the dissemination of findings is maximised across the sector

- Promote the development of scholarship in digital pedagogy through recognition, network and funding initiatives

- Nurture the development of existing Teaching and Learning researchers in Ireland and encourage international links and full national participation in appropriate collaboration in the scholarship of digital teaching and learning

- Ensure that the National Professional Development Framework incorporates provisions for the development of research and scholarship, as well as excellence and expertise in digital pedagogy

- Support the recognition of high quality teaching and innovation by promoting excellent pedagogy and seizing the opportunities afforded by digital technologies to build towards this aim

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- Develop in partnership a self-evaluative inventory which guides lecturers on how to take an active role in the curriculum development of their modules through the integration of high impact digital learning practices (prospective partners might include Centres for Teaching & Learning, QQI and national networks)

- Identify opportunities for a large-scale, collaborative sectoral learning analytics project linked to a sectoral priority, e.g., digital assessment and understanding of learning impacts

- Work with Centres for Teaching & Learning, IT services and USI representatives to address key questions in the operationalising of learning analytics

- Support and facilitate system led actions as appropriate

What Might Success Look Like?

Recommendation 4

Develop a strong evidence base for enhanced pedagogy

If Recommendation 4 is successfully implemented, the following kinds of outcomes can be expected:

- Increased number of publications of relevant research by Irish academics (whether individually or in national or disciplinary networks) in high-quality international journals

- Networks have developed to maximise national impact and work collaboratively to enhance teaching and learning across the sector

- Increased engagement from teachers in networks and disciplinary groups

- Institutions are harnessing the potential of data analytics (which also encompasses the general use of statistical and measurement tools) to inform practice and policy

- National learning impact awards explicitly recognise evidence-based research that underpins the enhancement of teaching and learning and recognises where innovation has enhanced or transformed teaching and learning challenges

The National Forum for the Enhancement of Teaching and Learning makes a commitment to ongoing consultation and review of the roadmap to ensure that there is continued progress towards building digital capacity across the Irish higher education sector.

References and Selected Bibliography

Academic Partnerships (2013) *A Guide to Quality in Online Learning.* Available at: http://www.academicpartnerships.com/sites/default/files/A%20Guide%20to%20Quality%20in%20Online%20Learning.pdf [Accessed January 2015].

Allen, I. E., & Seaman, J. (2014). *Grade change: Tracking online education in the United States.* Babson Park, MA: Babson Survey Research Group and Quahog Research Group. Retrieved from http://www.onlinelearningsurvey.com/reports/gradechange.pdf

Australian Learning and Teaching Council (2011) *Spaces for Knowledge Generation: Final Report.* Available at: http://documents.skgproject.com/skg-final-report.pdf [Accessed January 2015].

Barber, M., Donnelly, K. and Rizvi, S. (2013) *An Avalanche is Coming: Higher Education and the Revolution Ahead.* Institute for Public Policy Research. Available at: http://www.insidehighered.com/sites/default/server_files/files/FINAL%20Embargoed%20Avalanche%20Paper%20130306%20%281%29.pdf [Accessed January 2015].

Bennett, S. and Maton, K. (2010) 'Beyond the "Digital Natives" Debate: Towards a more Nuanced Understanding of Students' Technology Experiences', *Journal of Computer Assisted Learning* 26(5): 321–331.

Butcher, N. and Hoosen, S. (2014) *A Guide to Quality in Post-traditional Online Higher Education.* Dallas TX: Academic Partnerships. Available at: http://www.tonybates.ca/wp-content/uploads/Guide_Quality_Online_LearningBooklet_V4_final.pdf [Accessed January 2015].

Butler, D., Leahy, M., Shiel, G. and Cosgrove, J. (2013) 'Building Towards a Learning Society: A National Digital Strategy for Schools'. Dublin: St Patrick's College of Education, Education Research Centre. Available at: http://www.education.ie/en/Schools-Colleges/Information/Information-Communications-Technology-ICT-in-Schools/Digital-Strategy-for-Schools/Building-Towards-a-Learning-Society-A-National-Digital-Strategy-for-Schools-Consultative-Paper.pdf [Accessed January 2015].

DeMaria, R. and Bongiovanni, T. (2010) 'The 10 Biggest Myths about Synchronous Online Teaching'. *Educause Quarterly* (September). Available at: http://www.educause.edu/ero/article/10-biggest-myths-about-synchronous-online-teaching [Accessed January 2015].

Department of Communications, Energy and Natural Resources (2013) *Doing more with Digital: National Digital Strategy for Ireland.* Dublin: Stationery Office. Available at: http://www.dcenr.gov.ie/NR/rdonlyres/54AF1E6E-1A0D-413F-8CEB-2442C03E09BD/0/NationalDigitalStrategyforIreland.pdf [Accessed January 2015].

Department of Education and Skills (2011) *National Strategy for Higher Education to 2030: Report of the Strategy Group.* Dublin: Stationery Office. Available at: http://www.hea.ie/sites/default/files/national_strategy_for_higher_education_2030.pdf [Accessed January 2015].

Department of Education, Training and the Arts (Australia) (2008) *Smart Classroom Bytes.* Queensland: Queensland Government. Available at: http://education.qld.gov.au/smartclassrooms/documents/strategy/pdf/scbyte-elearning.pdf [Accessed January 2015].

Department of Enterprise, Jobs & Innovation and Department of Education & Skills (2012) *National Principles for Open Access.* Dublin: Stationery Office. Available at: http://www.djei.ie/science/technology/sfi.htm [Accessed January 2015].

Duncheon, J.C. and Tierney, W.G. (2014) 'Examining College Writing Readiness'. *The Educational Forum,* 78(3): 210–213.

ENQA (2009) Standards and Guidelines for Quality Assurance in the European Higher Education Area. Education and Culture DG. Available at: http://www.enqa.eu/wp-content/uploads/2013/06/ESG_3edition-2.pdf [Accessed January 2015].

EUA (2014) Measuring Digital Skills across the EU: EU-wide Indicators of Digital Competence. Available at: https://ec.europa.eu/digital-agenda/internet-use-digitalskills-and-online-content [Accessed January 2015].

European Commission (2010) *A Digital Agenda for Europe: A Europe 2020 Initiative.* Document 52010DC0245R(01). Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52010DC0245R%2801%29&from=EN [Accessed January 2015].

European Commission (2011) *Supporting Growth and Jobs: An Agenda for the Modernisation of Europe's Higher Education System.* Education and Culture DG. Available at: http://ec.europa.eu/education/library/policy/modernisation_en.pdf [Accessed January 2015].

European Commission (2013) European Higher Education in the World. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Brussels, 11.7.2013 COM(2013) 499 final. Available at: http://ec.europa.eu/transparency/regdoc/rep/1/2013/EN/1-2013-499-EN-F1-1.Pdf [Accessed January 2015].

Gill, S.J. (2003) 'Myth and Reality of E-Learning'. *Educational Technology,* 43(1), 20–24.

Gurung, R., Chick, N. and Haynie, A. (2009) *Exploring Signature Pedagogies: Approaches to Teaching Disciplinary Habits of Mind.* Sterling, VA: Stylus.

Halves, T. (2013) 'N Rubashov & G Dudeney on the Digital Revolution and the Challenge for Education'. *The Digital Counter-Revolution.* Available at: http://www.digitalcounterrevolution.co.uk/2013/g-dudeney-rubashov-edtech-digital-education [Accessed January 2015].

Hawker, B. (2010) 'Digital Pedagogy – A Definition?' Available at http://www.classroom20.com/group/digitalpedagogy/forum/topics/649749:Topic:54896 [Accessed January 2015].

HEA (2009) 'Open and Flexible Learning', Position Paper. Available at: http://www.hea.ie/sites/default/files/hea_flexible_learning_paper_nov_2009.pdf [Accessed January 2015].

HEA (2014a) *A Study of Progression in Irish Higher Education Institutions 2010/11 to 2011/12.* Available at: http://www.hea.ie/sites/default/files/a_study_of_progression_in_irish_higher_education_institutions_2010-11-2011-12_0.pdf [Accessed January 2015].

HEA (2014b) *Higher Education System Performance First Report 2014–2016*. Available at: http://www.hea.ie/sites/default/files/final_volume_i_system_report_with_cover_letter_.pdf [Accessed January 2015].

Healey, M., Flint, A. and Harrington, K. (2014) *Developing Students as Partners in Learning and Teaching in Higher Education.* York: Higher Education Academy.

Hénard, F. and Roseveare, D. (2012) *Fostering Quality Teaching in Higher Education: Policies and Practice.* Institutional Management in Higher Education. OECD. Available at: http://www.oecd.org/edu/imhe/QT%20policies%20and%20practices.pdf [Accessed January 2015].

High Level Group on the Modernisation of Higher Education (2013) *Improving the Quality of Teaching and Learning in Europe's Higher Education Institutions.* Report to the European Commission. Available at: http://ec.europa.eu/education/library/reports/modernisation_en.pdf [Accessed January 2015].

High Level Group on the Modernisation of Higher Education (2014) *New Modes of Learning and Teaching in Higher Education.* Report to the European Commission. Available at: http://ec.europa.eu/education/library/reports/modernisation-universities_en.pdf [Accessed January 2015].

Irish Survey of Student Engagement (2015) Available at: http://studentsurvey.ie/wordpress [Accessed January 2015].

Johnson, L., Adams Becker, S., Estrada, V., and Freeman, A. (2015). *NMC Horizon Report: 2015 Higher Education Edition.* Austin, Texas: The New Media Consortium.

Muller, D. (2014) 'This Will Revolutionize Education'. *Veritasium.* Available at: https://www.youtube.com/watch?v=GEmuEWjHr5c&feature=youtu.be&list=UUHnyfMqiRRG1u-2MsSQLbXA [Accessed January 2015].

National Forum for the Enhancement of Teaching and Learning in Higher Education (2014) *Principles and First Insights from the Sectoral Consultation on Building Digital Capacity in Irish Higher Education: Digital Roadmap, Phase 1.* Available at: www.teachingandlearning.ie/wp-content/uploads/2014/05/Digital-Roadmap-PHASE1MAY282014.pdf [Accessed January 2015].

Njenga, J.K. and Fourie, L.C.H. (2010) 'The Myths about E-Learning in Higher Education'. *British Journal of Educational Technology,* 41(2), 199–212.

Oblinger, D. (ed.) (2006) 'Learning Spaces'. *Educause.* Available at: www.educause.edu/learningspaces [Accessed January 2015].

Parr, C. (2015) *Open University's Numbers Dive 28% as Pool of Part-timers Dries Up.* Available at http://www.timeshighereducation.co.uk/news/open-universitys-numbers-dive-28-as-pool-of-part-timers-dries-up/2018593.article [Accessed March 2015].

Steel, C. and Andrews, T. (2012) 'Re-Imagining Teaching for Technology-Enriched Learning Spaces: An Academic Development Model'. In Keppell, M., Souter, K. and Riddle, M. (eds) *Physical and Virtual Learning Spaces in Higher Education: Concepts for the Modern Learning Environment.* ICI Global.

Watson, L. (2007) 'Building the Future of Learning'. *European Journal of Education,* 42(2): 255–263.

APPENDICES

Appendix 1

Process of consultation with institutions and key stakeholders

The National Forum for the Enhancement of Teaching and Learning engaged in an intensive initial consultation process during the early part of 2014 that informed the publication of the preliminary roadmap in May 2014. Following the publication of this document the National Forum continued its consultation with the sector. The shared vision, underpinning values and principles and recommendations, discussed in this document have emerged from this consultation process.

The consultation process was devised to be inclusive and open. This first phase of consultation has included almost 1,000 voices from all parts of the sector.

The face-to-face consultation sessions focused on four interlinked themes: Digital Pedagogy, Digital Literacy, Technical Infrastructure, System & Policy Infrastructure. Almost every higher- education institution contributed to these face-to face discussions

Several additional consultation activities were also completed during the same time frame to target the voice of key groups including:

- Focus groups with students, in partnership with the Union of Students of Ireland. (Summary report to be published March 2015).

- A national online survey of teaching staff in higher education "20 Questions on Technology Enhanced Learning" (c.800 respondents). (Summary report to be published February 2015).

- Telephone and face-to-face interviews with academic support staff (27 respondents). (Summary report to be published March 2015).

- Interviews (face-to-face and by phone) with senior management (24 interviewees) and an analysis of institutional compacts completed in 2014. (Summary report to be published January 2015).

- Consultations with national and international experts.

- A review of relevant research literature and significant documents.

- A profile of teaching and learning supports in the higher-education sector (completed in partnership with the designated contacts within each institution).

- A dedicated online consultation facility was available throughout the consultation process for further comment or contributions.

- Feedback on the preliminary roadmap published in May 2014.

- Proposals submitted and assessed by an international panel in response to the inaugural call of the T&L Enhancement Fund (Building Digital Capacity) 2014.

The National Forum would like to extend their thanks to all those who contributed to the consultation process

Appendix 2

The need for a shared terminology across the education sector

During the consultation process for building digital capacity, an important concern relating to shared terminology was frequently raised. Technological developments and tools are evolving rapidly, and in the process, language and terminology is difficult to keep up with. Furthermore, not everyone shares the same understanding of the very diverse terminology associated with digital capacity and technology for teaching and learning. Typically for example, 'digital identities' to an IT specialist can signal very different concepts to those discussed by teachers or educationalists.

In order for the different parts of the sector to collaborate meaningfully and to continue dialogue about the roles, requirements, challenges and opportunities of digital technology in teaching and learning, the importance of a shared terminology and understanding of terms cannot be underestimated. Glossaries of terms may help, or the compilation of a list of important and emerging terms should be considered.

Appendix 3

Values and principles underpinning the digital roadmap – key insights from the sector

The following section is a preliminary outline of the key values and principles that have emerged from the consultations.

The values and principles underpinning the digital roadmap are:

A   Shared recognition of the collaboration imperative

B   The shared need for a strong understanding of the current context

C   A commitment to the development of digital literacy among teachers and students – along with the time and support this development requires

D   A responsibility for recognising differences – among students, disciplines and institutions

E   A commitment to the development and use of a strong evidence base

F   Educational responsibility for identifying risks and concerns about an increasingly digital world, as well as opportunities and benefits

G   A commitment to including students as key partners in the education process

H   A focus on assessment and feedback as key routes to digital-capacity development and innovation

I   The adoption of the principles of open education to support future development in higher education

A. Shared recognition of the collaboration imperative

i)   A wider definition of who our teachers are

Those who lecture/teach in classroom environments are not the only people who play a teaching role in our higher education institutions. Technicians, researchers, learner support roles, advisers, tutors, lab assistants, librarians, educational technologists, curriculum designers, industry experts and students: all engage in teaching-related activities which support learning. A learning environment that supports collaboration in the decision-making and teaching development processes should be nurtured.

ii)   A team approach to teaching and learning enhancement and to exploiting digital technology

The role of the academic-support staff (librarians, centres for teaching and learning, IT staff, educational technologists and learner-support staff) is central to facilitating collective practice. At an institutional level it is important that the academic-support staff roles and that of an institution's centre for teaching and learning are supported and seen as key players in the development of digital capacity for teaching and learning. By developing a team approach to the planning and design phase of programme development the application of digital technology can be appropriately embedded.

iii) **Good channels of communication and strong interactivity between all levels of education can inform and nourish our work in higher education**

Learning from and communicating with educators at primary and secondary levels as well as further education, adult learning and professional bodies, will be an important principle to promote if we are to develop sound digital capacity and competence among teachers, students and the higher- education institutions in which they operate.

iv) **The value of sharing and developing across institutions**

Collaboration and sharing of good practices both within and across institutions will be a major enabler of building national digital capacity. Collaborative initiatives between institutions have already become established. Guidelines and best practices for the change management involved in establishing digital literacies should be identified and shared between colleges. Through a mixture of previous funding mechanisms (e.g., Strategic Innovation Fund (SIF), National Digital Learning Repository (NDLR) and disciplinary level collaboration, there have been many previous examples in the sector of the sharing of practice, resources, approaches and, in a small number of cases, joint programmes. There are many other examples of inter-institutional collaboration on which it will be possible to build in order to develop digital capacity within and between disciplines.

B. The shared need for a strong understanding of the current context

In our current context, it will serve the higher education sector to be innovative and resourceful when it comes to working with what we have, and mobilising existing resources in collaborative and inventive ways. But when it comes to developing new ways of exploiting technology in learning environments it is also important that we do not ignore the real need for resources, including time, skills development and support.

The changing environment in which learners live and learn, and the evolving nature of scholarship in an information-rich and increasingly digital world must also be recognised. The proliferation of mobile devices such as tablets and smartphones is one area that is impacting on the technological infrastructure. This is evidenced in the huge growth in demand for Wi-Fi that is being reported across the sector. This offers potentially transformative pedagogical opportunities that are beginning to be recognised, explored and exploited.

C. A commitment to the development of digital literacy among teachers and students – along with the time and support this development requires

A focus on skills development, time and support for experimentation and an incentive structure that recognises and rewards effective innovation in the use of technology is required. A main priority identified in the consultation process is the provision of support and training to teachers on a continuous basis throughout the year, allowing them to manage their learning and avail of training and support at times suitable to them. It is critical to the development of innovative and engaging learning through technology that teaching staff are provided with the resources, space and time to design and develop their ideas.

In particular there is a need to develop the digital literacy of staff and students alike, providing them with IT skills and competencies, equipping both to adapt to a complex world that is increasingly digital. The importance of digital professionalism and digital identity, along with the associated ethical and legal considerations, are important issues that must be addressed across the sector.

D. A responsibility for recognising differences – among students, disciplines and institutions

i) Avoiding stereotypes about students' digital abilities

A strong and dominant insight emerging from the consultation emphasises is how important it is not to make assumptions about students' digital access, literacy and competence. Students are a diverse body – not all of them are 'digital natives' and even though they live and learn in an increasingly digital environment, the skills they need to engage digitally within their disciplines are not a given.

ii) Avoiding generalised assumptions about disciplines

Different disciplines have different signature pedagogies that can be enhanced, improved and transformed with technology. Sometimes these technologies have become associated with one discipline for sound pedagogical reasons, but in many cases there is potential for transfer across disciplinary domains that have not been exploited. Digital technology can work and be used differently in different disciplines as appropriate.

iii) A spectrum of innovation

The speed and impact of technological change on Irish higher education over the past 20 years has been forceful, yet uneven. It is important to recognise that what is innovative in one discipline may be standard practice in another. Innovative use of digital technology will vary in different contexts.

E. A commitment to the development and use of a strong evidence base

i) A strong evidence base for good pedagogy in a digital age must be established.

There must be a commitment to evaluating the effect and impact that digital technology has or can have on student learning. New sources of evidence such as the recently piloted Irish Survey of Student Engagement can help to gain greater understanding of students' experiences of Irish higher education learning environments. The commitment to a strong evidence base should also incorporate the experiences and professional intuition of teachers from across the disciplines who often have had to adapt and respond in very specific and nuanced contexts.

ii) Linking teaching and research, and creating parity of esteem for teaching and research

Teaching and curricular innovation should be valued equally with research, and a key component of teaching and curricular design in contemporary education is the digital environment. We need to foster a stronger culture of experimentation, and to consider parallel incentives that mirror the promotion of research activity. There is also scope in the digital realm for increasing synergies between teaching, scholarship and research.

F. Educational responsibility for identifying risks and concerns about an increasingly digital world, as well as opportunities and benefits

Many contributors to the consultation process were keen to emphasise that technology is not always necessarily benign or used as a force for good. There is a strong view that our roadmap must acknowledge issues such as cybersecurity, copyright, plagiarism, and privacy in teaching and learning environments. Of particular concern is the idea that students need private, disconnected, protected spaces in which to learn, and that such spaces may become less available as digital identities and digital communication becomes the norm.

G. A commitment to including students as key partners in the education process

There is a strong commitment to including students as active collaborators in the process of building digital capacity. This is consistent with international trends in enhancing staff and student partnerships in enhancing teaching and learning more generally (see, for example, Healey, Flint and Harrington 2014). Including and partnering with students has clear benefits, embracing different talents and perspectives, empowering learners, promoting trust and respect between teachers and students, enlisting active engagement among students and generating a sense of shared responsibility for learning environments.

H. A focus on assessment and feedback as key routes to digital-capacity development and innovation

Building digital capacity to advance new, sustainable and innovative approaches to assessment and feedback offers very strong potential for immediate development. Assessment plays a pivotal role in all forms of teaching and learning, not just in the demonstration of learner achievement but also in shaping learners' approaches to study, in providing emphasis, setting standards and in facilitating a reflective, developmental metacognition. An effective approach to assessment is one in which there is alignment between the teaching objectives, teaching methods, learner tasks and the assessment tools used. Digitally-supported learning is no different in this regard. The technologies can provide considerable support for the development and management of a range of forms of assessment, but their particular use requires careful pedagogical consideration. Effective and efficient assessment systems also require sustainable investment, a robust infrastructure, technical support and training.

I. The adoption of the principles of open education to support future development in higher education

Open education in the context of higher education is underpinned by the understanding that education and knowledge should be publicly available and shared, and that scholarship can be better when we work together, whether it is across disciplines, institutions or borders. At the heart of open access is the free availability of information – but the key challenge is managing that information, supporting the infrastructure and the individuals who make use of these resources, and facilitating their sound pedagogical value. Open access can help to transform not only the way academic staff work and teach, but how students learn.

Appendix 4

The concept of digital time

Digital capacity is changing how time is viewed as a contextual dimension of learning. While it is impossible to dismiss or override the requirements of 'clock time', given the needs of the complex, large-scale system in which teaching and learning takes place, we know that technology is changing conceptions of time and the way time is, and the way it can be used. These changing perceptions have important implications for educational practice (see for example Duncheon and Tierney, 2013). 'Socially constructed' time refers to the subjective experience of time, which defies sequence and is impossible to measure, and links to other deeply contextualised and powerful aspects of learning, including motivation, engagement, attention, focus, self-belief, and inspiration. The National Forum data on students' perceptions of what gives rise to outstanding teaching points again and again to issues of time, attention and care and help provided by teachers. New theoretical approaches to how time is used and how it can be used in education are starting to emerge with the identification of a concept called 'virtual time'. It will be important to pay attention to how time is used by students and teachers while creating more pedagogically sound approaches.

Appendix 5

The Irish Digital Capacity Roadmap in a European Context

National Forum Digital Roadmap Phase 1 (May 2014) Recommendations	High Level Group on the Modernisation of Higher Education, October 2014[16] *New Modes of Learning*
Strategy with Implementation • Prioritise the strategic development of digital capacity in institutional and national policy and quality frameworks in a way that supports innovation for impact.	The integration of digital technologies and pedagogies should form an integral element of higher education institutions' strategies for teaching and learning. Clear goals and objectives should be defined and necessary organisational support structures (such as the European Academy of Teaching and Learning) established to drive implementation. **(Recommendation 3)** Public authorities should develop guidelines for ensuring quality in open and online learning and to promote excellence in the use of ICT in higher education provision. **(Recommendation 9)** Higher education institutions should ensure that quality assurance arrangements apply to all forms of credit-awarding provision in the institution. Institutions should use the quality assurance system to monitor retention rates and inform the development of appropriate supports. **(Recommendation 11)**.
Collaboration • Strengthen and support collaboration within and between institutions, and with different parts of the higher-education sector • Develop shared policies and infrastructure that reflect the complexity of an increasingly digital learning environment	National authorities should introduce dedicated funding to support efforts to integrate new modes of teaching and learning across higher education provision. Funding should encourage collaborative responses to infrastructural needs, pedagogical training and programme delivery. **(Recommendation 8)** National and regional authorities should utilise opportunities under the European Structural and Investment Funds programme to support the development of necessary supporting infrastructures, technologies and repositories. **(Recommendation 7)** Online platforms should inform users about their privacy and data protection policy in a clear and understandable way. Individuals should always have the choice to anonymise their data. **(Recommendation 15)**

16 A number of recommendations which relate uniquely to enabling activities at the level of the EU Commission (Recommendations 1&2,10) or enabling activities of individual Member States (recommendation 14) are excluded from this mapping table. Recommendation 12 is an exception to this general rule as it includes some aspects of the operation of ECTS relevant to HEI's.

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The Irish Digital Capacity Roadmap in a European Context

Changing Practice • Develop a consistent, seamless and coherent digital experience for students in Irish higher education • Engage with students and teachers to develop digital literacy	National funding frameworks should create incentives, especially in the context of new forms of performance-based funding, for higher education institutions to open up education, develop more flexible modes of delivery and diversity to their student population. **(Recommendation 6)** The European Commission and national authorities should encourage and incentivise higher education providers to award and recognise credits under the European Credit Transfer and Accumulation System for all forms of online courses. **(Recommendation 12)** National authorities should facilitate the development of a national competency framework for digital skills. This should be integrated into national professional development frameworks for higher education teachers. **(Recommendation 4)** All staff teaching in higher education institutions should receive training in relevant digital technologies and pedagogies as part of initial training and continuous professional development. **(Recommendation 5)**
Using Evidence-Based Research • Develop digital capacity in tandem with a strong evidence base for enhanced pedagogy	Governments and higher education institutions should work towards full open access of educational resources. In publicly (co-)funded educational resources, the drive should be to make materials as widely available as possible. **(Recommendation 13)**

Appendix 6

'Improving the quality of teaching and learning in Europe's higher education institutions' Key recommendations to consider in relation to building digital capacity for the enhancement of teaching and earing in Higher education in Ireland.'

High Level Group on the Modernisation of Higher Education (June 2013): *Improving the Quality of Teaching and Learning in Europe's Higher Education Institutions.*[17]	Key Recommendations
	• Every institution should develop and implement a strategy for the support and on-going improvement of the quality of teaching and learning, devoting the necessary level of human and financial resources to the task, and integrating this priority in its overall mission, giving teaching due parity with research. (Recommendation 2)
	• Higher education institutions should encourage, welcome and take account of student feedback which could detect problems in the teaching and learning environment early on and lead to faster, more effective improvements. (Recommendation 3)
	• All staff teaching in higher education institutions in 2020 should have received certified pedagogical training. Continuous professional education as teachers should become a requirements for teachers in the higher education sector. (Recommendation 4)
	• Curricula should be developed and monitored through dialogue and partnerships among teaching staff, students, graduates and labour market actors, drawing on new methods of teaching and learning, so that students acquire relevant skills that enhance their employability. (Recommendation 7)
	• Higher education institutions should introduce and promote cross-, trans- and interdisciplinary approaches to teaching, learning and assessment, helping students develop their breadth of understanding and entrepreneurial and innovative mind-sets. (Recommendation 10)
	• Higher education institutions – facilitated by public administrations and the EU – should support their teachers so they develop the skills for online and other forms of teaching and learning opened up by the digital era, and should exploit the opportunities presented by technology to improve the quality of teaching and learning. (Recommendation 11)
	• Higher education institutions should develop and implement holistic internationalisation strategies as an integral part of their overall mission and functions. Increased mobility of student and staff, international dimension of curricula, international experience of aculty, with a sufficient command of English and a second foreign language and inter-cultural competences, transnational delivery of courses and degrees, and international alliances should become indispensable components of higher education in Europe and beyond. (Recommendation 12)

17 Recommendations which specifically reflect the institutional aspects of building quality teaching and learning in higher education instituions as well as extending approaches to teaching, learning and assessment in a systemic manner are included here.

Appendix 7

International approaches to building digital capacity, Stanford University: A Case Study

Stanford University: Education's Digital Future - critical questions	
Stanford University: Education's Digital Future (http://edf.stanford.edu/) A two year dialogue (2012-2014) of critical questions reflecting the inter-related technical, ethical, political, learning and societal issues underpinning and shaping the development of digital education	**Discussion Topics** • New Media Literacies and Participatory Cultures: The growth and pervasiveness of digital media raise new questions about the relationship between learners, teachers and curriculum. With whom do learners engage in digitally mediated activity, and how, if at all, should these engagements be scripted? • New Forms of College Access: In light of the increasing recognition that much of higher education takes place online, there is a lively national debate on how college might ideally be organised and better integrated with the rhythms of the adult life course. • The Art and Science of Online Learning Environments: There has been a great deal of discussion about the promise and problems of online learning, but less about the subtlety of building online learning environments that are scientifically sound, productive of learning, and pleasurable to experience. • Academic Credentials in the Digital Era: Credentialing and accreditation are crucial features of every education system. How should credentialing happen in education's digital future? • Possibilities of a Digital Curriculum: As textbooks and associated learning resources go digital, the meaning of "curriculum" is in flux. At college level, curricular products have been fairly cleanly divided between published material such as textbooks, which are considered intellectual property, and syllabi, which are akin to culinary recipes – informally shared and changed by multiple users for free. All of this is changing. • The New Data Science of Teaching and Learning: Big data are transforming research on education and the science of learning more generally … far more extensive data are available to trace learning trajectories at granular levels of detail … this new learning knowledge … grows at the intersection of traditional social-science disciplines, the information sciences, computer engineering, and design. • Whose Digital Future?: There is now little doubt that digital technology will change the character of teaching and learning in fundamental ways, but large questions remain unanswered. Should we expect new technology to enhance educational equity or create new kinds of inequality? What kinds of teaching and learners should new technologies first serve?

List of Abbreviations

CPD	Continuing Professional Development
DAE	Digital Agenda for Europe
DES	Department of Education and Skills
EADTU	European Association of Distance Teaching Universities
EDIN	Educational Developers in Ireland Network
EFQUEL	European Foundation for Quality in e-Learning
EI	Education International
ENQA	European Association for Quality Assurance in Higher Education
EQAR	European Quality Assurance Register for Higher Education
ESG	Standards and Guidelines for Quality Assurance in the European Higher Education Area
ESU	European Students' Union
EU	European Union
EUA	European University Association
EURASHE	European Association of Institutions in Higher Education
HE	Higher Education
HEA	Higher Education Authority
HECA	Higher Education Colleges Association
HEIs	Higher Education Institutes
HLG	High Level Group
HOD	Head of Department
HR	Human Resources
ICT	Information and Computing Technology
ID	Identification
ILTA	Irish Learning Technology Association
IOTI	Institutes of Technology Ireland
IT	Information Technology
IUA	Irish Universities Association
JISC	Joint Information Systems Committee
LAI	Library Association of Ireland
MOOC	Massive Open Online Course
MoU	Memorandum of Understanding
NDLR	National Digital learning Repository
NFQ	National Framework of Qualifications
OECD	Organisation for Economic Co-operation and Development
OER	Open Educational Resources
PMR	Performance Management Reviews
QA	Quality Assurance
QQI	Quality and Qualifications Ireland
SIF	Strategic Innovation Fund
T&L	Teaching and Learning
VP	Vice President