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BUILDING DIGITAL CAPABILITIES WITH DIGITALED.IE: LEARNINGS FROM THE DIGITAL TRANSFORMATION JOURNEY AT ATU

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Abstract

In 2019, the Atlantic Technological University (ATU) Ireland (previously known as GMIT, IT Sligo and LYIT) were awarded a HEA Innovation and Transformation award to build digital capabilities across 8 campuses. The project is called iNOTE and it provides opportunities to transform the higher education experience in the CUA institutes (2019-2022). The Teaching and Learning Centre (Galway-Mayo) is leading the development of DigitalEd.ie Knowledge Platform and digital teaching and learning development initiatives (i.e., Work Package 2 of the iNOTE project).

DigitalEd.ie, is a digital teaching and learning knowledge platform, which provides access to professional development pathways and a suite of digital resources, to build digital capabilities and pedagogic expertise, so that educators can design, deliver and support flexible and online learning programmes effectively.

This paper will discuss: the development journey of DigitalEd.ie; building a digital education community; designing digital learning pathways; creating a digital resources directory; insights and impact of building digital teaching and learning capabilities during the pandemic; and the creation of a suite of digital education services and resources, that is transforming the higher education learning experience.

The development journey of DigitalEd.ie knowledge platform uncovered several resources and learnings, including a discovery tool, digital tools to support online student engagement, meaningful and robust assessment strategies, digital badges and learning pathways, and teaching and learning techniques moving from online to hybrid delivery. In addition, 20 digital teaching and learning impact case studies were developed across eight themes (<https://DigitalEd.ie/book>), outlining how and why educators transformed their teaching and learning practice and the impact on student engagement.

This paper will conclude with feedback from participants who undertook digital learning opportunities through the DigitalEd.ie monthly training programme, the Discovery Tool, Digital Badge pathways, and an accredited postgraduate Certificate in Digital Teaching and Learning. The feedback gathered through the action research study provides insights on the value of Continuous Professional Development (CPD) and considerations for the digital learning environment in higher education, post Covid-19.

Keywords: Digital Education, Digital Teaching & Learning, Online Teaching, COVID online learning, Student Engagement, Student Success, Digital Transformation.

Introduction

ATU includes eight campuses in the West and North West of Ireland with 22,000+ students including 40+ nationalities. Digitalisation and the use of education technology are a key strategic priority for the ATU. In 2019,

ATU were awarded (2.9 million euro) a HEA Innovation and Transformation award to build digital capabilities in the Connacht-Ulster Alliance (CUA) (formally known as GMIT, IT Sligo and LYIT). The project is called iNOTE and it has provided opportunities to transform the higher education experience across the ATU campuses (8).

In March 2020, the physical closure of all campuses across the ATU, forced everyone online in a hurry and transitioned learning, teaching and assessment activities to a new platform. The COVID 19 emergency fundamentally changed the way we all live and work, and this had an enormous impact on the teaching and learning experience across the ATU. The transition has been challenging, but it has also presented a number of opportunities for developing digital capabilities among the teaching community and alternative strategies for student engagement and assessment.

Transitioning to online teaching and learning was made possible due to a number of factors including: the advances in education technology globally in recent years, and the seamless integration of Microsoft Office 365 suite and Moodle; ATU engagement with a HEA funded digital education development project called iNOTE, the development of <https://DigitalEd.ie>; the Teaching and Learning Centre's digital teaching and learning online support resources and rapid response digital education workshops; a suite of flexible online learning professional development courses; and the flexibility and dedication of the teaching community engaging with digital professional development.

A range of initiatives established, that are building digital teaching and learning capabilities across the ATU include: the development of a digital champion team representing each academic department; Ask Me Anything (AMA) clinics; digital teaching and learning small group workshops; a digital education webinar series; alternative assessment strategies workshops; show and tell insight sessions on digital technologies; recruitment of graduate student mentors; online PASS leadership sessions to support the first year experience; the digital education development pathway at DigitalEd.ie for academic staff; digital professional practice alternatives; and investment in a remote teaching technology toolkit, for all staff working remotely.

To begin, this paper will explore a literature review on teaching and learning challenges during the pandemic, followed by the development story of DigitalEd.ie knowledge platform, feedback from stakeholder engagement Digital Champion community, the impact of the DigitalEd.ie initiatives, and finally the paper will conclude with a discussion on lessons learnt.

Literature Review

Reflecting on the response by higher education institutes to the challenges involved in the sudden relocation of teaching, learning and assessment away from the traditional campus environment, is presented in a variety of reports, and this has guided the transition and digital transformation journey in ATU over the last 12 months. Key national reports include: the QQI (2020); the National Forum for the Enhancement of Teaching and Learning (2020); the USI (2020); ATU annual reports to the HEA on the iNOTE project (2020 and 2021); a special GMIT Student Opinion Campaign undertaken in partnership with the GMIT Student Union (2020 and 2021); and an open discussion forum with academic and professional services staff in GMIT, to identify the challenges encountered with remote teaching. Overall, the reports collectively refer to the enormity of what was achieved through dedication, collaboration and innovation in moving teaching, learning and assessment online.

Within a very short period (i.e., one-two years) many researchers in higher education institutes both nationally and internationally, have also shared their teaching practice experiences during the pandemic. The main objective of higher education practitioners was to allow their students to achieve the learning outcomes and continue their education during the COVID-19 global pandemic. The pandemic was an opportunity to pave the introduction of digital teaching/technology enhanced learning (TEL) and to introduce new assessment strategies

and alternative assessment opportunities. The DigitalEd.ie project was a particularly valuable resource for higher education lecturers across the ATU, in supporting this.

An interesting study carried out by Kimmons, et al., (2020) 'Trends in Educational Technology' presented a detailed analysis of the future trends in educational technology, stating that most changes in 2020 seemed to be changes of degree rather than kind and that in many ways the educational technology field was already trending in directions, that seemed to be necessary for addressing the pandemic before it started. Furthermore, this study commented on the fact, that many education leaders were already using tools and digital technology prior to 2020 for improving productivity and sharing valuable resources and expertise, and the report considers that it does seem clear that our collective abilities to respond to and cope with the pandemic would likely have been even far more strained if these tools, practices, and research topics had not been so firmly in place, to begin with (Kimmons, Rosenberg & Allman, 2021).

Furthermore, a relevant study with Crick et al (2020) titled 'The Impact of COVID-19 and Emergency Remote Teaching', outlines the impact of these changes to the practitioner's teaching in the discipline of computer science in the UK. This research is based on quantitative and qualitative results from a large-scale survey of the educational workforce (i.e. approx 2,197 respondents). This study was conducted in the months after institutional closures in March 2020 and the shift to online delivery. This research reports on how educators teaching computer science in various UK-settings (n=214) show significantly more positive attitudes towards the move to online learning, teaching and assessment, than those working in other disciplines. These perceptions were consistent across other schools, colleges and higher education institutions. Practitioners noted the opportunities of these changes for their respective sector, especially a renewed focus on the importance of digital skills (Crick, Knight, Watermeyer, & Goodall, 2020).

The DigitalEd.ie platform began its development journey prior to the pandemic responding to the need to develop digital capabilities in the higher education sector. Its design was informed by the EU Digital Competence Framework and the JISC (2018) Digital Capabilities Model. Both frameworks provided a structure to build DigitalEd engagement initiatives including a four step process to build digital capabilities and expertise in online and flexible learning (see Figure 1). Examples include the Digital Discovery Tool, Digital Resources Directory, Learning Pathways, Digital Badges and a quality course design scorecard named OSCQR and originally designed by SUNY (New York State University). In addition, the platform provides a gateway to research papers reflecting the importance of pedagogy first and technology second.

Feedback from participants who have engaged in the digital resources and technology enhanced learning DigitalEd.ie pathways during the pandemic, recognised the value of the training, the platform and the digital tools implemented, to support higher education staff and this has been documented in a range of cases studies in the DigitalEd book (Ginty, et al., 2021). The case study experiences documented in the DigitalEd book correlates well with Kimmons et al (2021) experiences and a study conducted by Nunez-Canal, et al., (2022) based on the 'European Framework for the Digital Competence of Educators (DigCompEdu)'. This EU study identified 22 competences in six areas of competence. This paper analysed 251 responses from a sample of higher educators from Madrid's universities. The results show the relevance of educators' characteristics to the learning process concerning previous knowledge about technology, training received, and their attitude toward technology. An important finding from this paper is that digital competence has evolved from being a mere tool to becoming an essential pedagogical element (Núñez-Canal, de Obesso and Pérez-Rivero, 2022) . This study reflects the importance of pedagogy and the aligning with digital tools and digital teaching practices.

Research Methodology

The research methodology chosen was informed by the research questions. The paradigm adopted for this study is mixed methods and the research strategy is a case study via an action based research project, exploring digital teaching and learning in the higher education sector of ATU. Action Research is research carried out by practitioners and is primarily about developing practice and empowering practitioners (Lewin, 1946). This action

research study explores digital teaching and learning development initiatives in three higher education institution sites working towards a new technological university in Ireland.

Action research ideology emerged from the social psychologist Kurt Lewin. In his paper 'action research and minority problems' (Lewin, 1946), where he describes action research as research leading to social action. Lewin (1946) outlines action research, as a series of steps. These steps have been applied and undertaken in this research study:

1. Defining the problem
2. Examine the Idea/problem and gather information about it
3. Plan Action
4. Take Action
5. Reflect on the consequences (Yue, Hillon & Haddad, 2018).

As outlined in Lewin's model above, action research involves always building on your findings, planning and reflecting on these findings to inform the next planning phase, a continuous improvement research method. McIliff (2016) suggests that action research is a form of dialogue than a technique, where practitioners reflect on their process and make choices based on their findings and actions taken.

The research strategy conducted was a multi-site case study of the impact of technology enhanced learning on teaching practice in higher education and the impact of digital teaching initiatives on the students learning using an action research study approach as outlined below. Practitioner/action research can be described as any research into practice undertaken by those involved in that practice, with an aim to change and improve it (Mertler, 2009).

Both quantitative and qualitative methods are used in the study in order to elicit data which will quantify the impact of digital teaching and learning on teaching practice in higher education. Qualitative research methods are also used to derive the perceived benefits of course delivery using digital technology, the perceived benefits to student learning and the perceived impact formal TEL and digital training resources.

Using quantitative methods alone would limit the type of data to be elicited. Therefore, it is essential to incorporate methods that would allow for qualitative analysis. The characteristics of quantitative research which have developed since it was first employed in educational research in the late 19th century include:

“an emphasis on collecting and analysing information in the form of numbers... an emphasis on collecting scores that measure distinct attributes of individuals and organizations and an emphasis on the procedures of comparing groups or relating factors about individuals or groups in experiments...”

(Creswell, 2005, p.41)

The data collection methods include a survey and focus groups with academics and professional services staff. A survey is aimed at ATU staff who have engaged with DigitalEd.ie (n=500+). A student remote learning experience survey was targeted at students in ATU Galway-Mayo campuses (n=1000+). The purpose of the staff questionnaire is to extract the opinions of the higher education lecturers and elicit information with regards to the effectiveness of the impact of the Digital Teaching and Learning (DTL) resources and learning pathways at <https://DigitalEd.ie> and an accredited certificate in DTL.

The staff questionnaire was deployed electronically. Questions were designed to capture the views of the participants in relation to the DigitalEd knowledge platform, their teaching experiences during the pandemic. assessment strategies, feedback and supports needed.

In addition, structured focus groups were held with staff across the ATU that have engaged with the DigitalEd knowledge platform. Focus groups are an established mechanism for data collection across qualitative, mixed method, and quantitative methodologies (Pearson & Vossler, 2016). Although employed differently within each research paradigm, the popularity of focus groups is increasing (Carlsen & Glenton, 2011; George, 2013; Kress & Shoffner, 2007; Massey, 2010).

Participants in the study have been asked to reflect on their teaching practices. However, the researchers are conscious that the context of the pandemic may cause feelings of stress, distress, anxiety or worry for some and this may be reflected in the study data. A further ethical consideration relates to the anonymity of the participants and confidentiality of the information obtained.

DigitalEd.ie Knowledge Platform Development Story and Research Findings

The ATU Teaching and Learning Centre (Galway), led out on the design and coordination of a range of rapid response initiatives to support staff and students. This aligned well with the outputs emerging from the DigitalEd.ie Knowledge platform resources and services suite (see Figure 2, Graphic illustration on DigitalEd.ie development). In parallel to this, online sessions were opened up to Sligo and Donegal ATU campuses as part of the DigitalEd.ie and iNOTE project.



Figure 1: DigitalEd.ie Knowledge Platform.

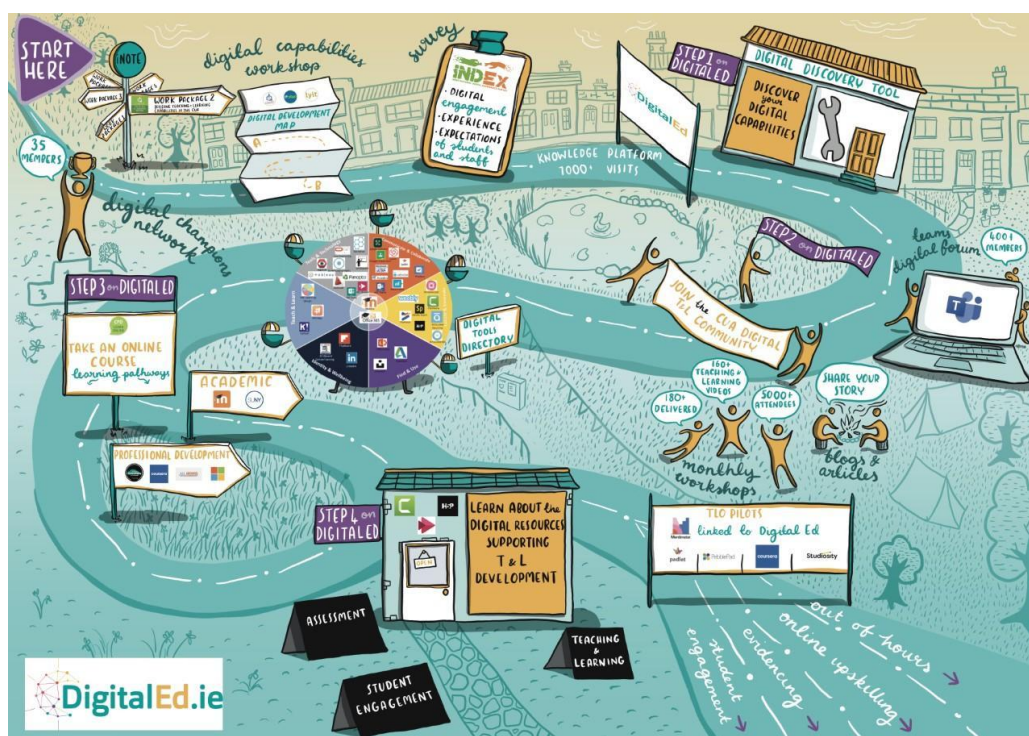


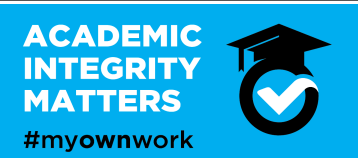
Figure 2: Graphic Story on DigitalEd.ie Development

During the crisis of March-May 2020, collaborative discipline teams emerged, and a team of Digital Champions supported each other through various online panel sessions, sharing best practice in digital teaching and remote learning. To further support the digital transformation challenges emerging, the GMIT Executive Board (EB) established the Blended and Online Learning Transformation (BOLT) initiative, to provide further COVID-19 rapid response supports, that would impact every functional area in the institute. The BOLT steering group was established in April 2020 to develop a plan for remote learning in the 20-21 academic year commencing in September 2020. The steering group included: A chair, member of the EB; members of various academic departments; academic affairs administration; Teaching and Learning Office; IT Services; and the Student's Union. The rapid response initiatives implemented since March 2020, through BOLT and DigitalEd.ie, that played an important role in transitioning to teaching, learning and assessment online, are outlined in Table 1 from items 1 to 17.

Table 1: Rapid Response Initiatives implemented in GMIT in response to COVID-19 DigitalEd.ie and BOLT

Response Initiative	Description	Who benefited?
1. Digital Teaching & Learning Knowledge Platform	A Digital Teaching and Learning education platform (see Figure 2), providing access to digital learning pathways, a discovery tool, digital stories, a digital resources directory, a digital champions network and a digital education forum. The platform can be accessed at https://DigitalEd.ie	Lecturers in GMIT, IT Sligo and LYIT It is also accessible to the higher education sector under a Creative Commons Attribution-Non-Commercial-Share Alike 4.0 International Licence. 25,000+ visitors recorded to date (as at Sept. 2022)
2. AMA Clinics – Ask Me Anything Clinics	Online One-to-One Clinics with the TLO team of Learning Technologists to troubleshoot online teaching challenges with Moodle, Teams and more and to assist in redesigning of a module or assessment for online delivery.	All Lecturers in GMIT/ATU Galway-Mayo

		750+ AMA clinics to date (as at Sept. 2022)
3. Graduate Student Mentors	Student mentors to assist the students with online engagement and to follow up where there is lack of engagement.	All Students in each academic Dept. in GMIT 20+ Graduate Mentors in place supported by BOLT 2020-2021.
4. Digital Academic Champions	A programme developed to allow digital champions, who have undertaken formal training in digital teaching and learning to mentor their colleagues in online delivery in each academic department.	20 Lecturers in GMIT + 6 Champions established in IT Sligo and LYIT collaborating and sharing practice (2020-2022) 50+ Digital Champions completed Digital Badge Pathway to date, 2022.
5. PASS Student Leadership Programme	Peer Assisted Study Sessions (PASS) are designed to help first year students cope better with all aspects of life at third level and focus on student integration, engagement, support, empowerment, and leadership to help students quickly adjust to third level life. As a response to COVID, PASS moved to online delivery to include an online PASS Leader Training Programme which included more than 60 student leaders trained to deliver weekly online PASS sessions.	First Year Students 60 student leaders annually leading weekly timetabled online PASS sessions on MS Teams across ATU Galway-Mayo/GMIT
6. Student Hub – Online Portal	From Sept. 2020, GMIT established a central student portal 'one stop online shop' where students can gain access to a variety of student supports and information on studying, online assessments, IT services, campus information, health and wellbeing, student life, finances, student rights and responsibilities, and planning for the future.	All Students in GMIT/ATU Galway-Mayo Supported by the BOLT initiative serving all students.
7. GMIT Healthy Campus	A committee of staff and students established since 2019, to promote health and wellbeing throughout the Institute's mission, strategy, policies, plans and practices wherever possible. As a response to COVID, Healthy Campus launched a series of online services and activities that students and staff can avail of to include virtual staff and student choirs, online fitness classes, mental health training programme for staff, online Smart Consent training programme for students, and various online campaigns and promotions addressing healthy eating, physical health, mental health & wellbeing, and sexual health & identity.	All Students & Staff in GMIT/ATU Galway-Mayo
8. Student Success – Online Learning Support Guides	In response to COVID-19 a range of resources were developed by TLO to support students learning online, and include: A short animation explaining the steps to success in online learning and student engagement in GMIT.  A short guide for students is also available at this link covering steps to success and some practical advice for	All Students in GMIT/ATU Galway-Mayo

	GMIT students learning online during COVID-19 (published in March 2020).	
9. GMIT's Digital Learning Charter	GMIT's Digital Learning Charter outlines our mutual responsibilities and provides a framework for managing our communication and behaviour in a digital world. It should be taken as a statement of our shared values rather than as a rule book. GMIT Digital Charter is available at this link GMIT Digital Communication Principles animation video is available here. GMIT Digital Communication Principles 	All GMIT staff and Students/ ATU Galway-Mayo Supported by the BOLT Initiative.
10. Academic Integrity, GMIT Student Guide	 Student Guide to Academic Integrity in GMIT is available at this public link and here on the Student Hub	All GMIT Students and Staff/ ATU Galway-Mayo.
11. GMIT Library Online	The library developed an online library support service for flexible online learners: • LiveChat implemented since April 2020 • Help FAQs implemented since April available 24/7 • Communication via generic library email: library@gmit.ie • Regular online newsletters Note: The online services are staffed by all library staff across four campuses.	All GMIT Students and Staff/ ATU Galway-Mayo.
12. Remote Teaching Technology Toolkit	Each member of the academic and professional services community in GMIT was supported through the BOLT initiative with a technology toolkit to enable online teaching and remote working and student engagement.	All GMIT Students and Staff/ ATU Galway-Mayo. Supported by the BOLT Initiative.
13. Online Labs/Practicals access via elabs Ericom	GMIT have investigated and implemented a solution across all our campuses where our physical laboratories including 55 labs to date and incorporating 1140 PCs are available for online and remote delivery of teaching and learning through the Eiricom Connect Software platform. https://elabs.gmit.ie/EricomXml/index.html	All students partaking in lab-based practicals – allowed students to access computer labs remotely. Supported by the BOLT Initiative.
14. Return to Campus Group	A Committee was established to manage the safe reopening of GMIT to include communicating updates with regard the planning for the next academic year to all staff and students, implementing the 3 Step Process prior to returning to campus.	All GMIT Students and Staff Supported by the BOLT Initiative.
15. Online Proctoring Project	In 2019-2020 a pilot of online proctoring with PROCTOREXAM (EU company) took place in GMIT School of Business in collaboration with the TLO. The outputs from this pilot were presented in an experience report and case study and this led the way for the Exams Office in GMIT to establish rapid response	GMIT School of Business in 2019/20 and wider impact rolled out in 2020/21 for GMIT high stakes assessments. Supported by the DigitalEd.ie project and the BOLT Initiative.

	solutions to high stakes online assessments/exams during COVID-19	
16. First Year Student Induction Course	Developed by TLO and Student Services, GMIT Students completing this course become familiar with GMIT expectations: who we are; what we do; and how we can help you throughout your time in college. This course can be accessed here .	First Year GMIT Students/ATU Galway-Mayo Supported by the BOLT Initiative.
17. IT Skills Course for GMIT Students	Developed by IT Services, GMIT students successfully completing this course have the IT skills required to fully engage with distance education in GMIT over the academic year. The IT Skills course can be accessed here .	All GMIT Students/ATU Galway-Mayo Supported by the BOLT Initiative.

Feedback from Stakeholder Engagement

By December 2020, the impact on staff engagement and the development of digital capabilities was wide ranging (see Section 5, Impact of DigitalEd.ie initiatives).

In addition, Figure 3 and Table 2 presents overall staff feedback on clinics/webinars provided and how they benefited from the engagement. The majority either agreed or strongly agreed that sessions positively enhanced their knowledge and skills and increased their confidence levels in their ability to teach online or use technology more effectively.

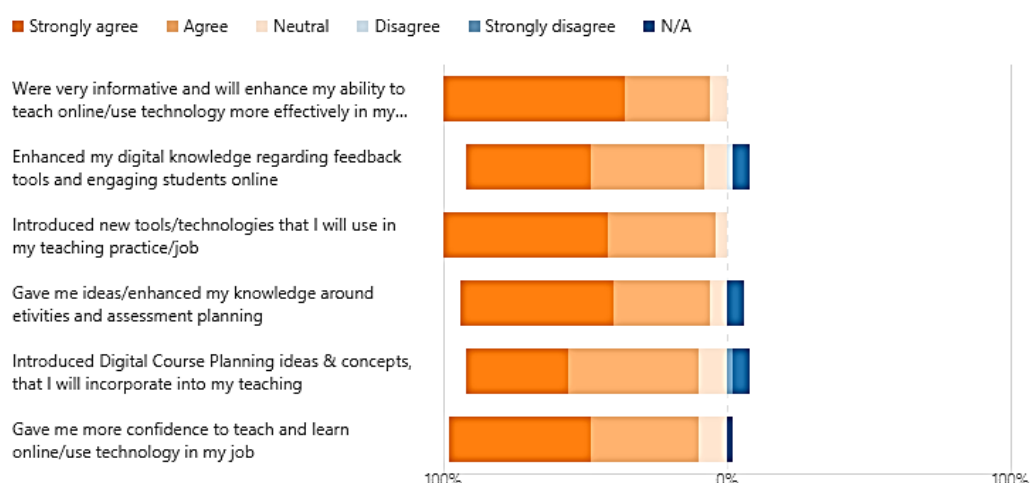


Figure 3: Benefits to attending the DigitalEd development sessions

In addition, a focus group has taken place with the Digital Champion community (December 2020 and June 2021) exploring the value and impact of the DigitalEd.ie knowledge platform. The focus group session also explored areas for enhancing DigitalEd.ie and the training and mentoring supports provided during the COVID-19 online teaching emergency.

A word cloud presented in Figure 4, highlights the key discussion themes and topics explored during the focus group session and how Digital Champions play a key role in the ongoing enhancements to the DigitalEd.ie knowledge platform and associated services and resources.



Figure 4: Key discussion topics and themes explored in the Digital Champion focus group (December, 2020 and June 2021).

Impact of DigitalEd.ie Initiatives

Through dedication, collaboration, and innovation, ATU transitioned teaching, learning and assessment online smoothly. The scale of what was achieved and its alignment to digital transformation strategic objectives, has the potential for transfer of learnings to other higher education institutes in Ireland and internationally.

By June 2022 the impact on staff engagement and the development of digital capabilities was wide ranging is outlined in Figure 5.

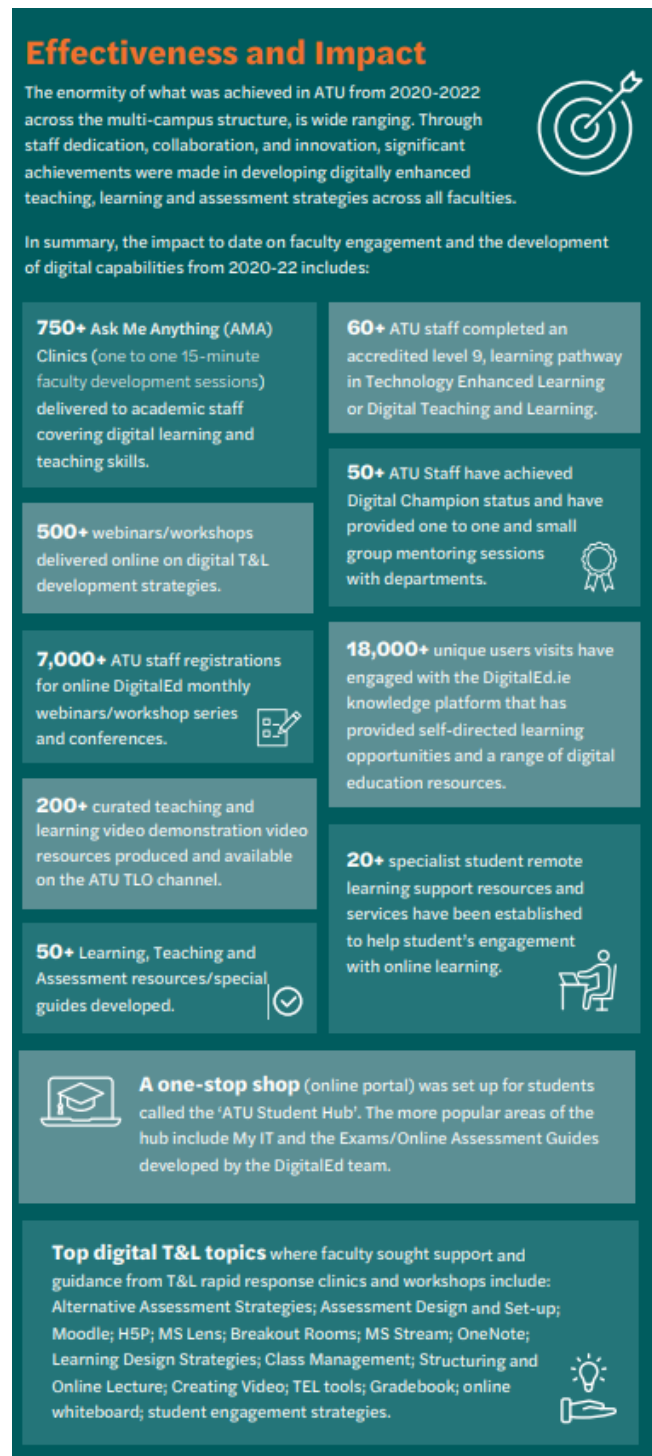


Figure 5: Effectiveness and impact of DigitalEd.ie learning pathways and resources (Ginty, 2022).

Conclusion

Extraordinary goodwill was demonstrated by those who teach, learn, support and lead in Atlantic Technological University (ATU), and much was learned for the future in our digital transformation development journey. A cycle of continuous improvement in digital education is ongoing in ATU, through action research studies underway on the initiatives outlined in this paper, and from reflective evidence generated from a wide range of stakeholders. This is critical to our digital transformation journey, which is current today, but it will also be crucial in the

post-COVID-19 context, in which the use of blended and online learning is only expected to increase in ATU and across the higher education sector globally.

Key learnings from the journey to date include:

- Undertaking the digital capabilities audit and evaluation in June 2019, proved invaluable to designing a platform for digital education to support higher education staff.
- Creating a suite of Learning, Teaching and Assessment (LTA) resources for managing the online learning environment, provided much needed support to fill the gaps of knowledge with regards teaching and assessing online.
- Conducting regular open clinics and discussion forums with colleagues and gaining feedback on where they needed the most help, informed the development of various guides.
- Establishing the BOLT steering group, representing a wide range of disciplines and functional areas in ATU, resulted in the rapid rollout of a range of supports for staff and students.
- Creating a Digital Champions team co-ordinated by the Teaching and Learning Centre, provided representation across every discipline and 'a mentor' to help navigate the challenges with moving online across all academic departments. The network is proving invaluable and has resulted in ATU gaining a wider reach and increased engagement in building digital capabilities and developing alternative assessment approaches.
- Feedback from colleagues through various surveys and focus groups in 2020-2022 have provided evidence on the value of 'Learning and Teaching Showcase Events and Forums', where lecturers show and tell what is working well and what is not working well. This peer learning, collaborative forum facilitated by TLC, has proved to be a supportive and collegial network and has helped build confidence among the academic community in teaching and assessing in the online learning environment.
- Recruitment of a team of graduate student mentors has been a great success and each Head of Department (HoD), the teaching teams and the students have benefited from their involvement. Graduate student mentors have played a key role in creating a sense of belonging and retaining students in the online campus. They acted as 'trouble shooters' working with HoD's and student groups from first year to final year.
- Providing for self-directed and directed accredited digital teaching development courses provided 'choice' and 'options' for colleagues and enabled lecturers to engage with learning over the summer months (see Figure 6 & 7).
- Providing for a monthly TLC timetable of workshops and drop-in clinics has been warmly received by the academic community, and this has led to the development of a 'teaching and learning services module design model' that provides support from concept, right through to the build, design, and implementation stage (see Figure 8).



Figure 6: Self-Directed Digital Development Pathway

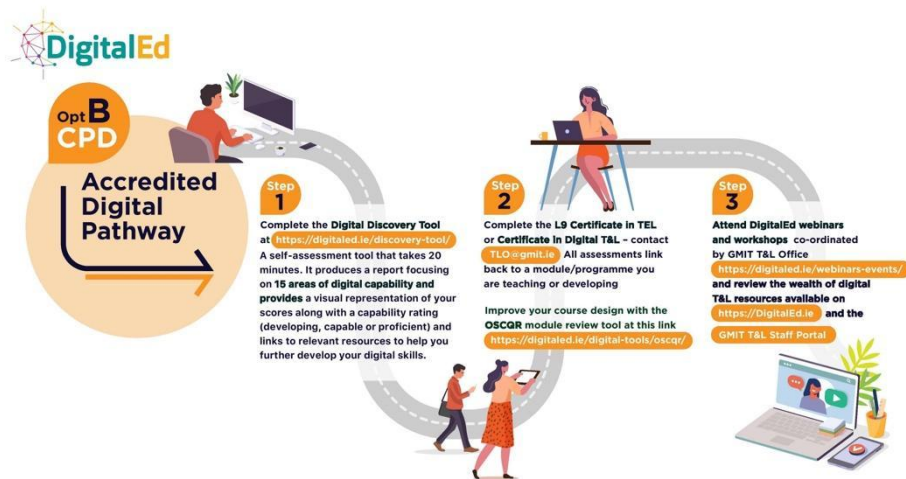


Figure 7: Accredited Digital Development Pathway

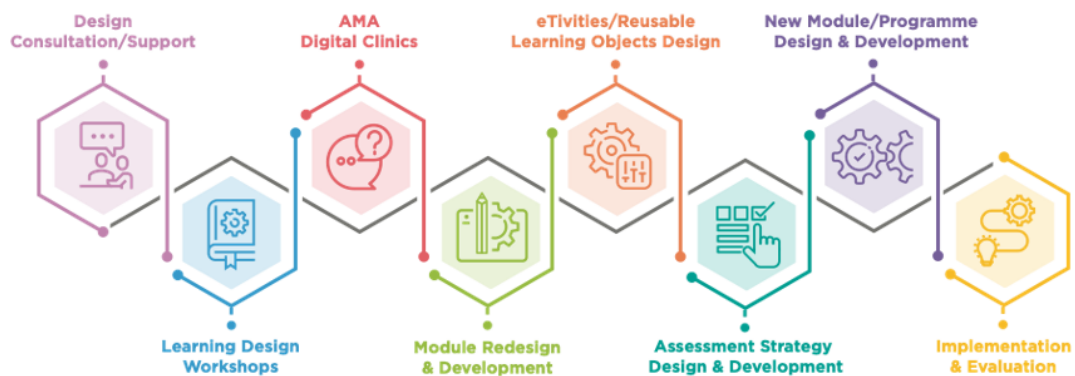


Figure 8: TLO Module/Programme Development Services

To conclude, the DigitalEd.ie knowledge platform and associated COVID remote teaching and learning services implemented in Atlantic Technological University 2020-22, has accelerated the rate of teacher engagement with digital education and technology enhanced learning tools. As a result of staff upskilling in digital education, students have also benefited from this, through the range of digital engagement and learning tools (i.e., live class discussions, group work, group discussions, polls, quizzes, icebreakers, presentations, clinics, and social activities), that they have been exposed to, and all of this will support them in further education, employability, and the world of work.

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