



Institute of Technology Carlow
Self-Evaluation Report
Strategic Dialogue Cycle 4
Appendices

Submission to the Higher Education Authority
16th May 2017



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APPENDIX 1

MID-TERM REVIEW OF STRATEGIC PLAN 2014-2018 - REVIEW OF PROGRESS TO 2016 AND PRIORITIES FOR 2017/18

“inspiring individuals
transforming society”



MID-TERM REVIEW Strategic Plan 2014 - 2018

INSTITUTE OF TECHNOLOGY CARLOW

MID-TERM REVIEW



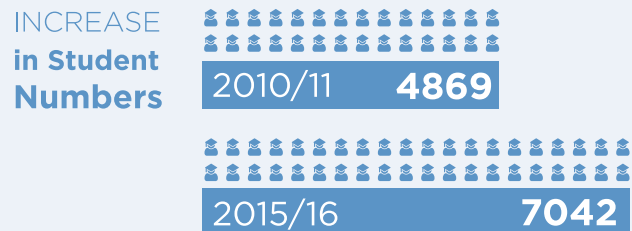
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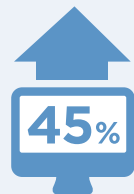
THE INSTITUTE
BY NUMBERS...



4th LARGEST
OF THE 14 INSTITUTES



2nd highest %
of post graduate students
in the Technological Sector



SINCE 2011
there has been a
**45% increase in
students studying
STEM subjects**



3rd highest
median CAO points
in the Technological Sector

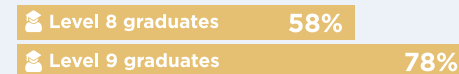


Finding Jobs (in employment)

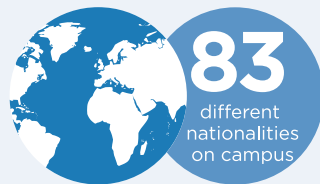
IT Carlow



Higher Education Sector Average



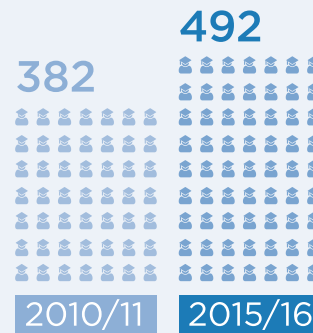
Top Employers of the Institute's graduates



Technology Transfer 2015



Academic Staff Numbers



Buildings and Facilities

The Institute's €150m master plan has, to date, delivered:





OUR VALUES

In all that we do we hold to our over-arching core value of the learner experience, sustained and enriched by our commitment to knowledge and the achievement of excellence; to the principles and practice of connectedness; to creativity and innovation; and to ensuring high standards of integrity, moral and ethical behaviour in all our endeavours.

OUR VISION

To be Ireland's Leading Technological University; Inspiring Individuals – Transforming Society.

OUR MISSION

To Engage, Learn, Challenge and Innovate, articulated through an educational environment and context where learners pursue studies in higher education and research up to doctoral level

Through a culture of enquiry, innovation and excellence we challenge our learners, staff, global collaborative partners and other stakeholders to create, apply and share knowledge and values in a supportive and vibrant university-level institute.

Engagement with business, government, community and voluntary sectors defines the Institute of Technology Carlow's leadership role in the development of our region and nation.



CHAIRMAN'S FOREWORD



Mr John Moore, Chair of
Institute of Technology Carlow Governing Body

This mid-term review of our Strategic Plan 2014 -18 marks our progress toward the realisation of our vision to be Ireland's leading Technological University. It also gives us the opportunity to realign our endeavours to the changing circumstances we continue to encounter and to ensure that our plan continues to drive us towards our strategic goals.

The scale and breadth of the progress highlighted throughout this review signifies a step change in performance that is attributable to the considerable talent and commitment of staff, students and all our stakeholders. There are many examples where our planned progress has been exceeded through our collective ability to seize new opportunities, to work together and with our many external partners, to achieve our goals.

We can rightly congratulate ourselves on the progress made to date and we can be confident that we are continually improving the educational and research opportunities and experiences of our students. We continue to cultivate our influence in developing the region and in reaching out to build productive alliances, both nationally and internationally. These efforts rely on smart and ambitious teams of staff and a strong and stable financial base to build from.

The Governing Body commends all for their considerable achievements to-date and will continue to enthusiastically support members of the Institute throughout the implementation and exciting evolution of the current strategic plan.

Mr John Moore

Chairperson, Institute of Technology Carlow
December 2016

PRESIDENT'S INTRODUCTION



Dr Patricia Mulcahy, President

The positioning of our Institute towards becoming a values-led and learner-centred higher education institution in 2012 was an important milestone in our development. A broad and inclusive consultative process provided clarity on the journey we would take to further enhance our role as an exceptional economic and quality of life driver within the regional, national and international education landscape.

Our 2030 vision to be Ireland's Leading Technological University is an ambitious statement, particularly given the environmental context which prevailed at the time of its inception; a time of deep crisis in the global and national economies.

Throughout 2016, at the mid-point of the implementation of our current strategic plan, we have even more reason to be confident that we are successfully steering a true and steady course for our Institute towards realising this vision.

Throughout 2016 we revisited and reviewed our progress on five over-arching strategic goals, nineteen objectives and sixty targeted initiatives. The more significant achievements or key outcomes against each of the goals and objectives to-date are summarised in this report and include:

1. Placement of our Institute in the top category of high performing higher education institutions by the Higher Education Authority in 2015 (Strategic Dialogue Cycle 2) and 2016 (Strategic Dialogue Cycle 3) following external peer review.
2. A trajectory which positions our Institute to meet and exceed all national technological university criteria within a three year time period.
3. A significant growth in student numbers and graduates; increased diversity in our student and graduate profile; advances in the qualifications and research experience of academic staff; improvements in retention and student satisfaction; consolidation as the leader in flexible provision; new programme development, particularly at postgraduate and higher degree level; growth in the international student population and international collaborations; and enhanced links with other sectors of the Irish education system. This is underpinned by a strong quality enhancement culture acknowledged through our international external peer reviews.
4. The roll-out of a €100 million physical master plan which saw the completion of the Dargan Centre for Research and Innovation in 2014, the Centre for Aerospace Engineering in 2015; the Houghton Building for Teaching and Learning in 2016; the commencement of a thirty-acre South Sports Campus; and the acquisition of an additional forty-two acres for future growth in Carlow and Wexford.

5. An increased leadership role in the economic and social regeneration of our regions including the South-East, Mid-East and Midlands regions.

Many people have contributed to these successes, responding with professionalism, commitment and enthusiasm during a period of unprecedented uncertainty and change.

Within the evolving Irish higher education landscape, our Institute continues to assert its position as a strong, confident, progressive and ambitious institute with a commitment to delivering step changes in higher education provision and designation as a Technological University under new impending legislation.

In 2016 the two South-East Institutes of Technology at Carlow and Waterford committed to the creation of a connected and embedded unitary multi-campus Technological University that will deliver greater unity and direction across regional sectors, while further promoting regional development within the national and international context. Having navigated a particularly challenging time for the South-East Technological University project over 2014/2015, it is a welcome

development to have brought this project to its current status in 2016 with a re-engagement plan and State funding for 2017.

On the next stage of our journey we are resolute in our commitment to maintaining the highest quality of provision across all our activities, while closely aligning these with the evolving needs of our learners, external stakeholders and national imperatives. Following an institute-wide consultative process and series of cross-functional workshops, we have now refined our strategic initiatives under our five strategic goals as part of our 2016 mid-term review of our plan. The key initiatives are summarised throughout this report. Taken in conjunction with our mission-based performance compact agreement with the HEA, regional cluster arrangements and university designation ambitions, progress on these initiatives will ensure continued balanced high quality growth, strategic development and maximum contribution to society.

I thank most sincerely everyone who has contributed to the significant progress summarised in this report.

This is particularly impressive given the challenging economic environment in which we have all been operating. I look forward to your continued input, advice and support as we continue to meet the challenges and opportunities ahead.

Dr Patricia Mulcahy

President

Institute of Technology Carlow

December 2016



GOAL 1

Learner Experience and Graduate Attributes

We will optimise the learner experience to support the development of graduate attributes that meet the needs of learners and of modern society.

GOAL 2

Knowledge Creation, Application and Exchange

We will expand capacity and develop expertise within specific core domains. We will create, develop, apply and exchange knowledge to ensure highly skilled graduates and ideas to drive enterprise creation and development.

GOAL 3

Strategic Collaborations and Partnerships

We will build upon our strategic collaborations and partnerships, both nationally and internationally. These enhance our capacity, extend our reach, increase our relevance and maximise our impact.

GOAL 4

Societal, Economic and Environmental Impact

We will strengthen our engagement with the regions, communities and sectors we serve. We shall ensure access and progression opportunities. We will share our knowledge and resources and we will learn from stakeholder feedback so that we will continue to enhance our contribution to the development of a creative, sustainable and fair society.

GOAL 5

Reputation, Public Confidence and Sustainability

We will continue to develop an internationally-oriented organisation, with a robust self-evaluation, peer review and quality enhancement culture, as we strive to embody the highest international standards of provision, transparency and stewardship of resources.

REVIEW 2016 AND PRIORITIES FOR 2017- 2018

Throughout 2016 we conducted a mid-term review of progress on implementation of the Institute of Technology Carlow's Strategic Plan 2014-2018 using a broad and inclusive consultative process involving all internal and external stakeholders. This was informed by the outcomes of a series of reviews for the monitoring, validation and enhancement of Institute-wide performance conducted over the past five years (summarised in the following pages). The purpose of the Strategic Plan Mid-Term Review 2016 was to provide both a retrospective view of the effectiveness of the plan to-date in bringing us towards our vision of being Ireland's leading Technological University, and a prospective view of the defining characteristics and priorities for the next two years of this current planning and implementation cycle.

The Strategic Plan Mid-Term Review 2016 is presented in this document and provides ample evidence for a strategic approach that has been remarkably successful in bringing the Institute to a higher level of performance and impact. We have made substantial progress across a wide range of activities. More importantly, and perhaps of most long-lasting significance, the plan and the planning process has copper-fastened our culture of strategic thinking, planning, actions, review and accountability. This culture is marked by innovation, visionary initiatives, resource development, and widespread connectivity with our constituencies.

STRATEGIC PLAN 2014-2018
PRIORITIES 2017 -2018

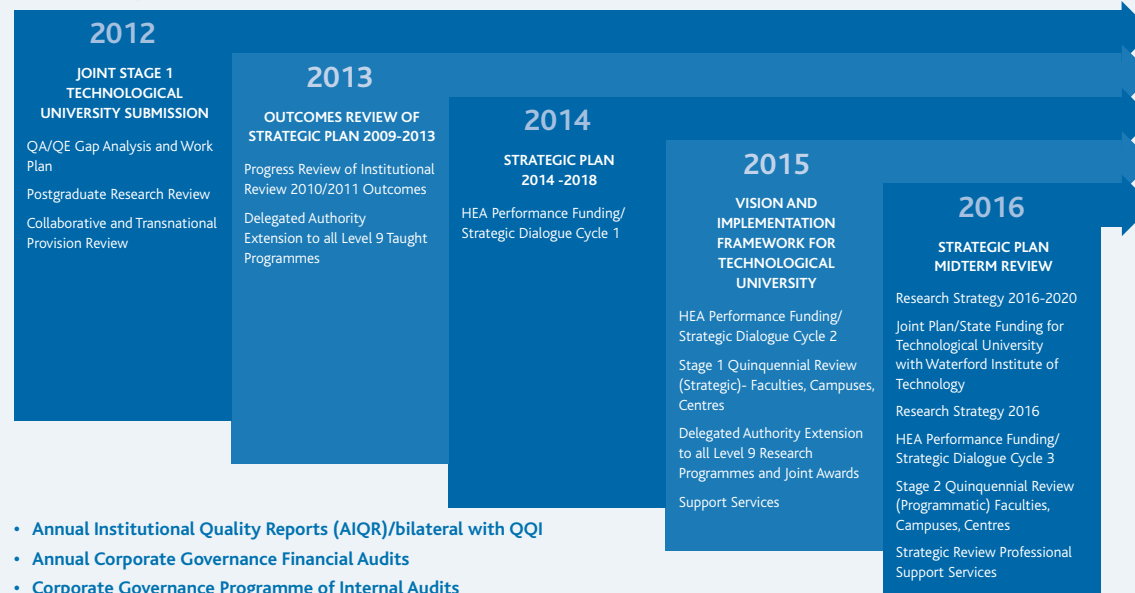
Our achievements have given us a strong sense of accomplishment and pride that is evident throughout the Institute and amongst internal and external constituencies. We have every reason to be confident that we are successfully charting a course for our Institute towards realising our vision for a connected multi-campus higher education institution:

- That acts as a focal point for leadership, innovation and policy direction, connecting our regions internally and externally for maximum economic and social impact.
- That is an education continuum in which we interact with our learners, researchers and collaborative partners throughout their lifetimes, empowering them to respond to their changing goals and needs.

- That has an academic community that increasingly transcends traditional disciplinary boundaries to facilitate the generation of new cross-disciplinary ideas, programmes and research not possible in more traditional faculty settings.
- That has a culture of engagement and innovation that endeavours to ensure no discernible barriers between our campuses and the community.

As we continue to plan for the future, we have refined our strategic initiatives under our five strategic goals to ensure continued balanced high quality growth, strategic development and maximum contribution to society.

Overview of Institute of Technology Carlow strategic planning, reviews and quality enhancement initiatives and milestones



- Annual Institutional Quality Reports (AIQR)/bilateral with QQI
- Annual Corporate Governance Financial Audits
- Corporate Governance Programme of Internal Audits

STRATEGIC PLAN 2014-2018 PRIORITIES 2017 -2018

OUTSTANDING LEARNER EXPERIENCE

We are a learner-centred institution dedicated to the creation of an environment where our learners can achieve their full potential and where our graduates are fully equipped to achieve the highest personal and professional standards. We are committed to lifelong learning, equity of access, transfer and progression to ensure a significant, sustainable and socially responsible contribution to our regions, Ireland and the world. Priorities include:

- **Implementation of the graduate attributes project.** This will continue to shape our approach to the generation of professionally-ready graduates across all disciplines and give our graduates the strategic edge in employability and career advancement throughout their lifetime.
- **Increased digital capacity.** We have a modern and resilient IT physical infrastructure and virtual learning environment as a result of prioritised investment over many years. We are ideally

positioned to embark upon new initiatives incorporating an enhanced use of digital technologies across our multi-campus structure. We will implement strategic pilot projects within existing programmes and cross-campus and develop an integrated institutional strategic plan for blended, flexible and distributed learning.

- **Enhanced learner engagement.** We will implement a range of new initiatives across the domains of governance and management, teaching and learning, research and quality assurance to ensure learners are active partners in the creation of the learning process.

IMPLEMENTATION OF THE STRATEGIC PLAN FOR RESEARCH 2016-2020

The Strategic Plan for Research 2016-2020 has been designed to build on the internationally recognised achievements of our researchers and postgraduate learners. Through implementation of this plan, we aim to build research environments with critical mass, high ambition and strong international networks.

The successful implementation of this plan will be underpinned by ongoing strategic investment in infrastructure, personnel and policy developments and will accelerate progress towards reaching key metrics for Technological University designation. Priorities include:

- **Building research capacity and research culture.** We will continue to develop an enquiry based, research informed learning environment that will produce more research opportunities and outputs and positively contribute to the teaching and learning culture within the Institute.
- **Achieving research impact.** Members of our research community will be supported in increasing research productivity and performance through the publishing and dissemination of research, nationally and internationally. Through this plan we will further encourage and support the pursuit of research excellence and seek to maximise our impact through academic pathways and commercialisation and knowledge transfer routes.

STRATEGIC PLAN 2014-2018
PRIORITIES 2017-2018

- **Developing future research themes and research policy.** We have made significant progress in building and developing research themes and research impact. Our Strategic Plan for Research 2016-2020 will further enhance this culture and deliver benefits for our economic, social and cultural stakeholders. Our postgraduate attributes will ensure that researchers have the enterprise development and innovation skills necessary to contribute to the development of the economy and society.

DESIGNATION AS A TECHNOLOGICAL UNIVERSITY

Further clarity is anticipated on the national process, criteria and legislation; however, the broad parameters for an internationally credible Technological University are indisputable. This mid-term review has provided further opportunity to review progress to-date on our trajectory towards meeting Technological University criteria and establish additional initiatives that build on our achievements to-date. Priorities include:

- **Further investment in the talent of existing and prospective faculty and management with creative and innovative ideas and the qualities necessary to implement them.** This will be supported by the generation of increasingly diversified non-State funding streams and capacity building initiatives in staff development, research and innovation and new programme development directly linked to the needs of the economy and society.
- **Designation as a self-awarding body.** This will involve completion of ongoing reviews across the Institute, progress on recommendations arising from these reviews, and a strong 2018 Cyclical Institutional Review.
- **Collaborative capacity building with Waterford Institute of Technology.** This will include putting in place a supportive project governance and management structure to facilitate positive collaborative initiatives across and between all levels of both Institutes.

- **Development of strategic partnerships and coalitions with stakeholders.** All of our endeavours require strong national and international partnerships. In addition to working towards Technological University designation and with the Southern Regional Cluster, we will help shape the development of the new Technological Higher Education Association of Ireland as the policy voice for the Irish Technological Higher Education sector.

ORGANISATIONAL RESTRUCTURING REVIEW FOR CONTINUED DEVELOPMENT AND GROWTH

National demographic changes are increasingly evident in our primary catchment area of the South-East, Mid-East and GDA regions. Our recent projections, based on published statistics from the Department of Education and Skills and the Central Statistics Office, predict a potential increase in the total learner population from 7,000 to approximately 9,300. Following a 40% increase in learners over the past five years, this represents a further overall

STRATEGIC PLAN 2014-2018 PRIORITIES 2017 -2018

increase in total enrolments of 31% assuming maintenance of current participation rates for full-time and lifelong learners. Given the high degree of efficiency and high quality return on investment to-date to the State by the Institute, additional growth will require investment in capital and staffing levels. Further development of our organisational structure will also be required to support and further enable our continued successful transition to a larger, more complex and impactful higher education provider. Priorities include:

- **Organisational structure review.** We have continued to adapt our organisational structure as the Institute has entered different phases of its development. We are now entering a new phase in preparation for designation as a Technological University. We will review our academic structures encompassing faculties, departments and research units. We will also pursue appropriate recognition models for exceptional academic leadership in line with international norms. The professional

support services will also be reviewed with the goal of ensuring that they have the resources and capacity for growth.

- **Investment in our People.** The diversity of our staff is a key asset for the Institute as we continue to prioritise recruitment and retention of best available talent.
- **Infrastructural development.** We are committed to continuing to provide world-class facilities. We will continue to make strong representations under the higher education capital programmes while exploring alternative funding mechanisms.

PROVIDING LEADERSHIP IN REGIONAL AND NATIONAL INITIATIVES

Our leadership role in regional and national development is enabled by exceptional people, international partnerships, high-quality infrastructure and financial sustainability. We have a track record of flexibility, innovation and responsiveness throughout the recession and are exceptionally well placed to provide further leadership at this time of national recovery. We are committed to harnessing our

education and research to evolving economic and social objectives and to further enhancing our engagement and integration with regional development with a particular focus on the South-East, Mid-East and Midlands. Priorities include:

- **Utilising our human, physical and intellectual capabilities** to provide leadership to national and regional development initiatives including the Technological University, South-East, Midlands and Mid-East Regional Skills Fora, National Skills Strategy to 2025, the Action Plan for Education 2016-2019 and the International Education Strategy 2016-2020.
- **Delivering on our commitments under the South-East, Midlands and Mid-East Regional Action Plans for Jobs** while continuing to formulate new ambitious strategies aimed at enhancing balanced regional economic and social progress.



GOAL 1

Learner Experience and Graduate Attributes

“We will optimise the learner experience to support the development of graduate attributes that meet the needs of learners and of modern society”.

THE LEARNER EXPERIENCE

“ We will develop a distinctive Institute of Technology Carlow graduate, recognisable by a unique set of attributes...”

BY 2018 WE WILL HAVE:

- Reviewed our organisation structures to ensure the provision of the optimal learner experience to all of our current and future students.
- Implemented our Institute’s graduate attributes frameworks reflecting the skill sets and qualities of the Institute of Technology Carlow graduate and further integrated these into the broad learner experience.
- Continued the service improvements to research students.
- Completed the implementation of the recommendations from Faculty, Campus and Professional Services reviews thereby enhancing teaching, learning and student support provision in innovative and novel ways.
- Piloted projects within existing programmes to incorporate blended, flexible and distance learning.

GRADUATE ATTRIBUTES

Through the Graduate Attributes project we aim to identify the essential qualities and traits that the Institute will engender in all of its graduates. Attributes are positioned around three interconnected dimensions: academic, personal and transferable. They represent the skillsets and qualities which our learners will have the opportunity to develop as part of their overall higher education experience. Graduate attributes are not limited to the individual’s own discipline area, but can and should be developed through engagement within the Institute as a whole. This adds to the holistic nature of the graduate attributes and extends them beyond academic-related skills and qualities.

The process of refinement of the Institute’s graduate attributes is being progressed through a bottom-up approach as part of the programmatic review process in 2015/16. Using programme learning outcomes as the starting point; these provide a rich vein of carefully thought out explanations from which to extrapolate the skills and qualities that will reflect better the attributes learners are developing.

By the end of 2017 the Institute will have published its graduate attributes charter that will encapsulate and highlight the learner experience of the Institute of Technology Carlow graduate. The process of further ingraining these attributes into our learning culture will be the focus of our ongoing activities.



GOAL 1
LEARNER EXPERIENCE AND GRADUATE ATTRIBUTES

“Excellence in Learning and Teaching”

TEACHING HERO AWARDS 2016

The National Forum for the Enhancement of Teaching and Learning in Higher Education in partnership with the Union of Students in Ireland (USI) presented 37 Teaching Hero Awards to teachers from Ireland’s higher education sector in October 2016. The Awards marked the culmination of the 2016 Teaching Hero campaign that saw over 800 higher education teachers nominated by their students for these awards.

The 2016 awards followed the success of the Teaching Hero Awards 2014 in which Ms Jenny Russell of the Department of Electronic, Mechanical and Aerospace Engineering and Dr Eileen Doyle-Walsh of the Department of Humanities received awards.

Students described their most impactful teachers as being outstanding, knowledgeable communicators and emphasised the human touch as being an essential characteristic. Dr Eleanor O’Leary, Department of Sport, Media and Marketing, and Larry Banville, Department of Business received 2016 awards.

“The role of the lecturer is much more than simply giving the lecture and it’s good that this award recognises the complexity of the lecturer’s role,” said Larry Banville.

Dr Eleanor O’Leary, Department of Sport, Media and Marketing, and Mr Larry Banville, Department of Business received National Teaching Hero Awards 2016



“Fostering active learner involvement in sporting, social, cultural and community-based activities”

A STUDENT VOLUNTEER'S VIEW

The President's Volunteer Awards, established in association with UNUM and Carlow Volunteer Centre, sets out to harness, acknowledge and support the contribution that students of the Institute make to their communities, whether on campus and its environs, within their own communities, or overseas.

The main aims of the awards are:

- To develop active citizenship and civic engagement by institute students,
- To create joint projects with our volunteer communities.
- To support the contribution that our student volunteers make to our communities.
- To foster civic and leadership skills amongst students.

The overall winner of the Volunteer award in 2016 was Samiya Mooge, fourth year student in Social Care.

Samiya became involved in volunteering only in the past few years. While she has always been interested in social issues and wanting to help people, she considered herself quite shy and quiet. Her course work placement brought her into contact with refugee children and she felt a close affinity to their plight, given her background and life experiences.

Samiya was invited to become involved with the African Diaspora Youth Network in Europe (ADYNE) and quickly became an important contributor to its work. She has received valuable training through her volunteering work and has presented at a UN conference attended by ambassadors and other senior dignitaries. She has travelled to events across Europe and Africa through this work and she has recently been elected President of ADYNE. Samiya is also a member of the National Youth Council of Ireland and an ambassador with the No Hate Speech Movement.

Journalist and Presenter
Miriam O'Callaghan
with Samiya Mooge



“Volunteering has given me more confidence, self-esteem and more belief in myself. It is important that volunteering is fun and Informal learning is a big part of this,” said Samiya Mooge.

**GOAL 1
LEARNER EXPERIENCE AND GRADUATE ATTRIBUTES**

2018 Ambition	We will achieve this through:	Progress to date
We will provide an outstanding learner-centred education experience underpinned by best practice in learning, teaching and curriculum design.	Promoting research-informed, innovative learning and teaching that enhances learner engagement and achievement.	The Institute's Teaching, Learning and Assessment Strategy has been implemented and is achieving the following objectives: <ul style="list-style-type: none"> • To ensure the relevance of programmes to the learner, employer and society; • To promote research and to foster quality learning and teaching. • To promote innovative teaching and learning practice.
	Ensuring that curricula reflect the relevant graduate national, economic and social needs and international standards.	Through Faculty and Campus programmatic reviews, the teaching, learning and assessment strategies of each programme was realigned in accordance with international best practice. Over 90% of undergraduate major awards now incorporate work-based learning.
	Supporting excellence in learning and teaching through staff development.	The MA in Teaching and Learning is offered to all academic staff. All new academic staff are offered a place on the Institute's new Certificate in Teaching and Learning 1 (Foundation) programme. In addition, this programme is offered to outside applicants and to date over 40 participants have completed this module.
	Providing a physical learning environment and supporting infrastructure in consultation with all stakeholders that enables and enhances an outstanding educational experience.	In September 2016 the Institute's newly built €10 million Houghton Building came into operation. It provides an additional 3 lecture theatres, 11 lecture rooms and 2 computing laboratories all of which are equipped with a comprehensive range of audio visual aids that enhance the learning experience of students.

2018 Ambition	We will achieve this through:	Progress to date
We will enhance the social, personal and holistic development of our learners by developing a vibrant inclusive community and identity.	Fostering active learner involvement in sporting, social, cultural and community-based activities.	The Institute has developed a thriving social and sporting culture for its student population. In a recent national survey (The Student and Sport Study Ireland 2015) 80% of Institute of Technology Carlow's students indicated a very high level of satisfaction with sport exercise provision (the comparable figure nationally was 61%). 56% of students actively participated in exercise activities (the comparable figure nationally was 39%).
	Enhancing the inclusion of the 'learner voice'.	Volunteering activities of students have grown and are given due recognition through the President's Volunteer Awards initiative, launched in 2013.
	Enhancing learner supports that are flexible and scalable.	In September 2016 the Teaching and Learning Centre adopted a more learner-faced approach by introducing a new online induction programme entitled 'Academic Success', which was made available to all Institute of Technology Carlow students on all campuses. This allowed learners to better transition to higher education at a pace that was appropriate to them. This was also supported by classroom sessions during induction week.
	Increasing alumni involvement in Institute activities.	Building on successful social media campaigns, an Alumni office has now been established.
We will develop a distinctive Institute of Technology Carlow graduate, recognisable by unique attributes in addition to the knowledge, skills and competencies of the National Framework of Qualifications.	Articulating a graduate attribute framework in consultation with learners, staff and other key stakeholders.	An analysis of the graduate attributes, which have emerged from the programmatic reviews, is currently being conducted by the Teaching and Learning Centre for articulation in 2017.
	Enhancing our capability to embed graduate attributes within curricula and learning and teaching.	
	Embedding graduate attributes into the curriculum.	



GOAL 2

Knowledge Creation, Application and Exchange

“We will expand capacity and develop expertise within specific core domains. We will create, develop, apply and exchange knowledge to ensure highly skilled graduates and ideas to drive enterprise creation and development”.

“We will embed a research, innovation and collaboration ethos across all programmes”

BY 2018 WE WILL HAVE:

- Built on the successful launch of the Director of COREs programme and the awarding of the Design + Technology Gateway to strengthen our enterprise partnerships with SMEs and MNCs.
- Achieved Level 10 Delegation of Awarding Authority for Health Sciences.
- Developed pathways for achievement of Delegation of Awarding Authority Level 10 in Design and Humanities.
- Formulated a structure for a cross-cluster graduate school to enhance the quality of postgraduate research education through the introduction of structured training and education in accordance with the national doctoral framework.
- Increased registered research student numbers and staff active research participation in line with Technological University criteria.

Industry engagement is all pervasive at Institute of Technology Carlow. Our academic community, staff and postgraduate researchers, are involved in collaborations with global industry champions that are seeing new knowledge and new products and processes being developed. These collaborations use industry knowledge and specialised facilities allied with Institute knowledge and specialised facilities. The case studies presented typify the approach to research and industry interaction

at Institute of Technology Carlow. Research and engagement are embedded within the undergraduate and postgraduate programmes across all our faculties. The Institute commitment to creating, developing, applying and exchanging knowledge provides the focus and the overarching strategic direction for building on the success of these case studies.

EXCELLENCE IN RESEARCH OPENS UP PRESTIGIOUS CAREER PATH

Dr Richard Lally was conferred with a PhD by the Institute in November 2016. Dr Lally's research work achieved distinction by winning the world's largest agriscience competition - the Alltech Young Scientist Graduate Award 2016. This award gave Richard a fully funded postdoctoral contract with global biotechnology company Alltech. Richard's post-doctoral work with Alltech will take him to Kentucky and will focus on addressing sustainable solutions to crop agriculture.

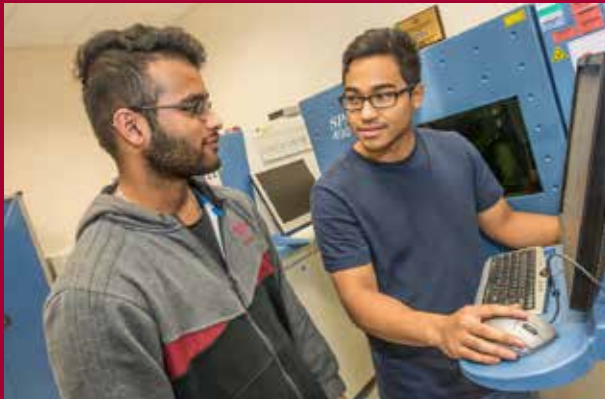


Dr Richard Lally

GOAL 2
KNOWLEDGE CREATION, APPLICATION AND EXCHANGE

“Supporting innovative knowledge creation, application and transfer through external collaboration”

Dr Darren Kavanagh is involved in a partnership with Boston Scientific, a worldwide developer of medical devices, that has seen specialist equipment, including Beamworks laser equipment and Leica microscopes from the company, utilised as extremely valuable resources for teaching excellence at both undergraduate and postgraduate level as well as for advanced industry focused research, development and innovation projects.



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The Institute is a key driver of progress and development in Carlow and was an important consideration in the decision of US Fortune 500 company, UNUM to locate in Carlow. In 2016 Institute of Technology Carlow announced a research programme for employees of UNUM who are suitably qualified Masters or Doctoral candidates intending to pursue research with the newly established FinTech research group contained within gameCORE at Institute of Technology Carlow.



Kyle Nowak, Ray Shannon & David Bobo (seated) and are the first three Institute of Technology Carlow/UNUM postgraduate researchers. Also in picture (l/r) Oliver McKenna, Managing Director UNUM Ireland, Paul Barry, Lecturer; Joseph Kehoe, Lecturer; Declan Doyle, Head of Development; Chris Meudec Lecturer.

The Institute has strong connections with sporting bodies and clubs. A pioneering pilot study on sports concussion – the first of its kind worldwide – that will use the retina of the eye as a potential assessment tool in the diagnosis of concussions was launched in December 2016. Dr. Clare Lodge, a chartered physiotherapist and lecturer in sports rehabilitation and athletic therapy at Institute of Technology Carlow, will lead the project, which is being funded by the Irish Research Council. Consultant ophthalmologist Dr. David Kent will co-supervise the study. The research is being carried out by postgraduate researcher Ben Hunt. Ophthalmic instruments supplied by TopCon Eyecare and MED surgical will be central to the study.

Pictured at the launch, from left: Fergal Byron, TopCon Ireland, suppliers of ophthalmic equipment to the project; Dr. Clare Lodge, chartered physiotherapist and Institute Lecturer in sports rehabilitation and athletic therapy; Ben Hunt, postgraduate researcher to the project; Mr. David Kent consultant ophthalmologist who will co-supervise the study and Martin Mulhall Institute of Technology rugby player.



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**GOAL 2
KNOWLEDGE CREATION, APPLICATION AND EXCHANGE**

2018 Ambition	We will achieve this through:	Progress to date
We will strengthen and sustain our RDI (Research, Development and Innovation) systems, development and support structures.	Managing the evolution of strategic research themes.	In 2015 the Institute formally established 5 "CORE" targeted research areas (designCORE, healthCORE, enviroCORE, gameCORE and engCORE). Each of these have designated CORE Directors. Research support, travel and conference schemes were enhanced and research student supports expanded.
	Developing and enhancing Quality Assurance and Enhancement procedures.	The Institute quality assurance and enhancement policies and procedures in Research Policy, Ethics in Research Policy, Collaborative Provision and Joint Awards have been peer reviewed by international expert panels. On foot of this, we achieved Delegation of Awarding Authority to level 9 for all activities.
	Commissioning and development of co-location RDI building.	In 2014 the Dargan Centre, a purpose built research, development and innovation centre was opened.
We will embed a research, innovation and collaboration ethos across all programmes.	Enhancing clear progression pathways through all National Framework of Qualifications levels and expanding research support programmes and culture.	The Institute has developed and grown its supervisory capacity to 32% by 2016. The number of registered postgraduate research students has increased by 140% in the past five years. Enquiry-based learning learning has been embedded across all programmes and clear pathways from NFQ Level 6 through 10 are being developed across each Faculty.
	Affirming innovation and collaboration as core programmatic deliverables at each level.	Academic staff with doctoral qualifications has increased from 18% to 31% in the same period. There has also been a very significant increase in the number of academic staff undertaking Level 10 postgraduate studies, rising from 2.6% in 2012 to 16.8% in 2016.
	Supporting innovative knowledge creation, application and transfer through external collaboration.	Collaboration with new partners has facilitated the growth in the numbers of enterprises supported through knowledge creation and knowledge transfer. The Design+ Enterprise Ireland Technology Gateway in particular has allowed Institute of Technology Carlow to reach a broad scope of SMEs which may not have been accessible without this partnership process with external agencies.
We will develop innovative and collaborative modes of programme delivery and research output with regional, national and international partners.	Devising and developing a suite of distinctively structured, work-based and professionally oriented offerings at National Framework of Qualifications Levels 9 and 10.	Over the past four year period the Institute has developed a broad portfolio of twenty innovative masters programmes across a range of discipline areas that encompasses Medical Device Regulatory Affairs; Interaction Design; Built Environment Management; Weapons Systems; Military Engineering; Sports Performance Analysis; Digital Marketing; Financial Services; Insurance and Risk; Tourism Marketing; Applied Social Care; Applied Research and Innovation; Data Science and Supply Chain Management. In addition a number of industry collaborative research studentships have been put in place in the Science and Computing discipline areas.
	Expanding existing and identifying and developing new strategically appropriate collaborative partnerships.	
	Enhancing institutional RDI capacity with appropriate collaborative and adjunct faculty.	The Institute has put in place a programme for Adjunct and Visiting Fellows and a number of both academic and industry based appointments have been made across a number of Faculties and Programmes.

2018 Ambition	We will achieve this through:	Progress to date
<p>We will identify, define, develop and mentor key RDI-driven graduate attributes.</p>	<p>Identifying and defining Institute of Technology Carlow research postgraduate attributes in addition to the knowledge, skills and competencies of the National Framework of Qualifications.</p>	<p>The Institute continues to build its Technology Transfer capabilities. The present TTSTI programme has been awarded the highest grade – 'A' – for achievement of targets and metrics. In 2016 €3.7 million was awarded to the Institute of Technology Carlow consortium to enhance further the technology transfer initiatives of the Institute.. European funded applications have been submitted to the Ireland-Wales Interreg Programme and the North-West Europe Interreg Programme.</p>
	<p>Defining and communicating Institute of Technology Carlow research postgraduate attributes at CORE and programme level.</p>	<p>Applicants from academic and research staff for RDI funding has increased with research funding being secured from schemes including the Irish Research Council's (IRC) Employment Based Postgraduate Programme.</p> <p>Institute of Technology Carlow has completed the 2nd highest number of Enterprise Ireland Innovation Vouchers of all HEIs.</p>
	<p>Developing and mentoring key RDI driven graduate attributes that equip our graduates with the expertise and capabilities they need to achieve their full potential within the global community.</p>	<p>The National Doctoral Framework has identified a range of core attributes that research students "acquire" as outcomes of their research programme. To develop these core skills and to help fashion and refine a distinctive and valuable set of attributes a core programme of modules has been developed to assist researchers in realising their potential in these areas.</p>
	<p>Refining our research ethics structures to address requirements at all applicable levels of the National Framework of Qualifications.</p>	<p>The Institute's Research Ethics policy, procedures and associated documentation provide a governance and management structure that fosters and safeguards a robust research culture and governance framework for all research led activity. These policies have been informed, inter alia, by the 2014 National Policy Statement on Ensuring Research Integrity in Ireland.</p>

INSTITUTE OF TECHNOLOGY CARLOW



Conferring ceremony for Defence Force students 2016

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GOAL 3

Strategic Collaborations and Partnerships

“ We will build upon our strategic collaborations and partnerships, both nationally and internationally. These enhance our capacity, extend our reach, increase our relevance and maximise our impact ”.

BY 2018 WE WILL HAVE:

- Pursued the strategic goal of establishing a Technological University for our region, aligned with national policy and legislation.
- Worked collaboratively with Waterford Institute of Technology on joint initiatives across all levels in both Institutes.
- Worked with the other HEIs in the Southern Cluster to achieve National Strategic Priorities.
- Worked with Carlow College, St. Patrick's to achieve local synergies for the benefit of our communities.
- Continued as sector leader in collaborative provision with our current and new partners, nationally and internationally, serving as role models in work-based education and recognition of prior learning.
- Reinforced our internationalised curriculum and strategic provision to ensure our graduates can thrive in a globalised society.

COLLABORATIVE WORKING WITH THE DEFENCE FORCES

Close collaborative working with the Defence Forces is just one of the high calibre national partnerships or collaborations the Institute has developed in recent years. The Institute is committed to strengthening these collaborations through consolidating existing programmes and the development of new validated programmes that are of direct value to our collaborative partners as well as those learners undertaking these programmes.

In collaboration with the Defence Forces, the Institute, since 2011, has developed 12 programmes in the areas of leadership, management and defence studies alongside Masters programmes in Engineering, Ordnance and ICT. These programmes build on work based learning and provide pathways to awards from Levels 6 - 9 on the NFQ. Since 2013, over 800 Defence Force personnel have achieved academic awards accredited by the Institute.

Under the Institute's quality assurance and enhancement framework for the monitoring, validation and enhancement of Institute wide performance, an independent review panel made the following observations in relation to this collaborative provision:

"The panel commend the Defence Forces and IT Carlow collaborative relationship between the two organisations and structured accreditation system which has been developed. The cultural shift towards career development education in the DF resulting from the collaboration is striking. That this has been a hugely positive development for both organisations, instructors and learners is clear."

(Institute of Technology Carlow and Defence Forces Collaborative Review Panel Sept 16).

“Despite the uncertainty [in the external environment], we are meeting Technological University criteria and increasing our outward visibility” (Comment from Staff Workshop May 2016)



GOAL 3 STRATEGIC COLLABORATIONS AND PARTNERSHIPS

DESIGN+ GATEWAY CREATES OPPORTUNITIES FOR COLLABORATIVE RESEARCH AND DEVELOPMENT

Launched by the Institute in October 2016, Design+ Technology Gateway aims to give companies based in the South-East, Mid-East, Midlands and beyond an opportunity to develop their business through collaborative research and development while also nurturing networking synergies with industry in the area. This interdisciplinary technology gateway, funded by Enterprise Ireland, applies its industrial design capabilities to developing companies in the engineering, ICT & software and bioscience sectors.

The Design+ Gateway at Institute of Technology Carlow taps into the Institute's industry-focused academic researchers from its various faculties and enterprise hubs to work together with designCORE, healthCORE, enviroCORE, engCORE and gameCORE.

Speaking at the launch, Dr. Patricia Mulcahy, President of Institute of Technology Carlow, said the new gateway "reflects the Institute's pedigree and expertise in design since the 1970s and represents

a milestone in delivering near-to-market innovative solutions to companies in the engineering, ICT & software and bioscience sectors throughout the southeast and further afield. It will be an engine of growth for the region and provide further job opportunities for graduates".



**GOAL 3
STRATEGIC COLLABORATIONS AND PARTNERSHIPS**

2018 Ambition	We will achieve this through:	Progress to date
We will actively promote regional enhancement of higher education through the development of the Technological University (TU) project and the Southern Regional Clustering initiative.	Our commitment to the creation of a Technological University for the South-East.	The Institute has continued to strengthen its position in terms of meeting National criteria for Technological University designation. The government commissioned Kelly Report (2015) has helped overcome earlier difficulties and with further facilitation support, the project has received the approval and support of the governing bodies and presidents in both Institute of Technology Carlow and Waterford IT. A revised project plan has been agreed and additional funding support secured from the HEA.
	Contributing to the development of a higher education regional cluster between the Southern Institutes of Technology/ Technological Universities and UCC while participating in the collaborative projects agreed.	The Institute's commitment to the region and the Southern Cluster is being achieved through the "Action Plan for Jobs" and Regional Skills Fora. Working with employer bodies and regional industry, skills needs are being identified and a coherent operational structure has been established to respond to these needs. Partnership agreements have been reached with 28 further education providers across the region, including formal links with Laois and Offaly ETB.
	Joint Awards with National Higher Education Partners.	In 2015 the Institute achieved Delegation of Awarding Authority for Joint Awards.
We will strengthen and develop our strategic international relationships.	Establishing and sustaining key alliances and articulation agreements.	Since 2013 there has been a 23% increase in international alliances.
	Increasing and supporting learner recruitment from strategically identified international markets.	Opportunities for our students to study abroad have increased. Since 2013/14 the number of international learners has increased by 16%, from 331 to 390. This equates to 8.7% of full time enrolment. The Institute's Reserved Places Policy (2014) and its policy on the Admission of International Learners (2015) allows for the better management of international applicants.
	Enhancing internationalisation of our curriculum via learner and staff mobility opportunities.	The Institute has updated its curricula to ensure that it is accessible and relevant. This has been acknowledged by the HEA as part of the Strategic Dialogue process.
	Consolidating and further developing existing international strategic collaborations and partnerships.	Ongoing development work includes collaborative work with institutions in Malaysia and work on a shared and joint research project with Shanghai Finance University in the Fintech domain. Additionally, the Institute is working closely with the US multi-national UNUM, to further develop its Fintech programme, which is also an important component of the South-East Regional Action Plan for Jobs.

2018 Ambition	We will achieve this through:	Progress to date
<p>We will strengthen and develop national collaborative relationships and alliances.</p>	<p>Identifying and developing new national alliances and collaborative partners.</p>	<p>Since 2013 there has been a 27% increase in national alliances.</p>
	<p>Expanding existing and identifying and developing new strategically appropriate collaborative partnerships.</p>	<p>The Institute will launch a managed consultancy programme, commencing January 2017. This Knowledge Transfer Ireland pilot programme intends to tap into the specialist skills and expertise located in the region's HEI's - (Maynooth University, Institute of Technology Carlow and Athlone IT) - in order that these may be utilised by organisations across the region in order to bring new synergies and skills to help innovation and growth.</p>
	<p>Developing alliances for organisation based learning opportunities.</p>	<p>The Technology Transfer Strengthening Initiative (TTSI) Programme 3 commences in January 2017 and involves Institute of Technology Carlow, Athlone Institute of Technology, Waterford Institute of Technology and Maynooth University.</p>
	<p>Further developing our role as a key driver of social and economic development within our locality, through active partnerships with local authorities, business enterprises and the voluntary sectors.</p>	<p>The Institute has secured 5 years funding for its New Frontiers programme, with partner Institute Waterford Institute of Technology.</p> <p>The Institute works with local enterprise offices, County Councils and Enterprise Centres to help support and drive social and economic development. Recent successes have included work with the "Inspire Rathdowney" project which is primarily concerned with transferring learning from innovation best practice, derived from EU projects, to the Region Economic Development Zones (REDZ). Over 40 companies participated in this initiative.</p>
	<p>Building new relationships with entrepreneurs, SMEs and multinationals to address the enterprise, innovation and education needs of our regional cluster.</p>	<p>The Institute remains committed to engaging with entrepreneurs, SMEs and multi-national organisations to share its expertise and specialist skills. The Enterprise & Research Incubation Centre continues to support the growth of indigenous companies.</p> <p>The Design+ Technology Gateway provides additional resources and a structured pathway for industry to access the Institute's multi-disciplinary team of experts in design, engineering, ICT and bioscience to work on solving close-to-market commercial needs.</p>



GOAL 4

Societal, Economic and Environmental Impact

“ We will strengthen our engagement with the regions, communities and sectors we serve. We shall ensure access and progression opportunities. We will share our knowledge and resources and we will continue to enhance our contribution to the development of a creative, sustainable and fair society ”.

BY 2018 WE WILL HAVE:

- Exceeded Technological University criteria relating to the implementation of access, transfer and progression opportunities including increased further education pathways, lifelong learning, apprenticeships and flexible and work based learning programmes.
- Successfully completed programmes that will have seen more than 400 companies engage with the enterprise development initiatives of the Institute through national and international funding programmes including INTERREG V, Enterprise Ireland Technology Gateway programme, New Frontiers, and Horizon 2020.
- Built an alumni network that integrates our graduates into our teaching, research and engagement activities.
- Developed a framework for cooperation and collaboration with partners in the creative and cultural sectors to add value to initiatives such as the South-East Creative Corridor, the Action Plan for Jobs design led actions.
- Pursued sustainability initiatives that help reduce energy usage, increase recycling, and overall reduce environmental impact.

OVER €5 MILLION TO SUPPORT ECONOMIC DEVELOPMENT

The Institute and our various consortia partners have been awarded over €5 million to support economic development activities for the region. These include our Enterprise Ireland Technology Gateway, Design + and the New Frontiers national entrepreneur development programme. These initiatives will see us work with in excess of 400 companies by 2018.

Most recently the Institute, as part of a consortium of Higher Education Institutions (Maynooth University, Athlone Institute of Technology and Waterford Institute of Technology) has been awarded over €4mn under the Technology Transfer Strengthening Initiative (TTSI phase 3) and a Managed Consultancy Pilot Programme, which is a new KTI initiative, to support its five year programme, to run from 2017-2021. The funding has been awarded (part funded and supported by Enterprise Ireland) through a competitive process and is based in part on research income of institutes, metrics targets and metrics completion rates, past commercial activities and achievements. This consortium is recognised as a leading consortium and Rated A by an international panel of experts.

The strategic objective of the pilot programme is to extend the range of ways in which industry (and other organisations) can benefit from access to the broad knowledge and expertise in our Institute and to have this managed in a way that ensures ease of access, ease of transaction and simplicity and consistency in the process.



GOAL 4
SOCIETAL, ECONOMIC AND ENVIRONMENTAL IMPACT

“We will strengthen and sustain equitable access, transfer and progression opportunities for all learners”

SOCIETAL CHANGE THROUGH EDUCATION

The Institute has long been an agent of societal change through education. We believe the implementation of our mission has a positive impact on the civic, social, environmental and economic life of our region. The National Skills Strategy and the Regional Skills Fora present an opportunity for the Institute to take a leading role in the integration of the different strands of the education sector with identified areas for economic development and skills alignment. In the South-East considerable progress has been made to develop linkages and communication lines in pharma, agrifood, engineering, ICT, global business services and construction. Similar initiatives are being pursued with the Mid-East Regional Skills Forum.

Population projections from the CSO continue to indicate strong growth in the Dublin, Mid-East Midlands and South-East regions. Population growth in the South-East region to 2031 is estimated

between 6.6 – 10%. In the same timeframe the age group 20-24 is expected to grow between 7.7 – 10.6%. Forecasting from data provided by the statistics section of the DOES the post-primary school population in the Institutes catchment area is projected to increase by over 17,000 by 2021 (19% increase).

Between September 2015 and January 2016 the Institute secured 404 Springboard places (41% Level 6, 9% Level 7, 31% level 8 and 19% Level 9) and this represented a 177% increase on the previous year's uptake. Data from the HEA shows that the Institute outperformed both university and technological sectors in filling allocated places. The success of Springboard+ has been built on the ability of the Faculty of Lifelong Learning to respond quickly and effectively to this and other initiatives. This complements the Institute's broader lifelong learning strategy which has delivered the highest percentage of lifelong learners in the Higher Education sector, which currently stands at 36%

(WTE) of all Institute learners and marks a 16% increase in 2015/16 from the previous year. In 2015 a new High Performance Entry (HPE) scheme was introduced. The aim of the HPE scheme is to enable high achievers to achieve their dual ambition of a high quality education and performance in their chosen field. It currently applies in three areas – Sport, Active Citizenship and Innovation/ Entrepreneurship.

As acknowledged national leaders in the provision of Lifelong Learning programmes, our strategy will stimulate and inspire greater participation and inclusivity in higher education by all members of our community. We continue to meet and exceed targets of the national access plan through our programme of increased opportunities, innovative pathways and FET linkages.

A collaboration by artists and staff members of the Wexford Campus School of Art and Design Dr Orla Ryan, Alanna O'Kelly and Brian Hand was commissioned as part of the An Post GPO Witness History public art commissions for 2016. It was exhibited in the GPO in April, then moved to the Vietnamese Women's Museum

in Hanoi, and subsequently in the Visual Arts Centre in Carlow. The artists explored the role of women couriers who memorised the Proclamation on their journeys out of Dublin early on Easter Monday morning. The women became human telegraphs, the pressure of the despatch always with them.



Brian Hand and Dr Orla Ryan

Minister for Health Simon Harris, TD witnessed the signing of a formal agreement between the Institute and Bray Institute for Higher Education (BIFE) in August 2016. The Memorandum for Agreement provides students in BIFE with enhanced progression opportunities into higher education programmes in Institute of Technology Carlow. Minister Harris described this as "a wonderful opportunity for students in Co Wicklow and beyond to progress to education courses and career opportunities that higher education offers." The Institute has similar agreements with 28 further education providers across the region.



Pictured from left: Dr Patricia Mulcahy, President, Institute of Technology Carlow, Minister Simon Harris, TD and Mr Ray Tedders, Principal BIFE

**GOAL 4
SOCIETAL, ECONOMIC AND ENVIRONMENTAL IMPACT**

2018 Ambition	We will achieve this through:	Progress to date
<p>We will strengthen and sustain equitable access, transfer and progression opportunities for all learners.</p>	<p>Developing non-standard entry routes and enhancing social inclusion across all disciplines.</p>	<p>The Institute has established an Access and Widening Participation policy.</p>
	<p>Committing to part-time and flexible offerings incorporating innovative modes of delivery at all levels.</p>	<p>The Institute has succeeded in increasing its Lifelong learning student numbers by 20% since 2014; it now has the highest % of lifelong learners in the country. It has increased its overall learner population to 7,000 (from 5,000 in 2012) and we are now the 4th largest Institute of Technology.</p>
	<p>Proactively responding to national activation initiatives while maintaining our position as the market leader for life-long learning opportunities.</p>	<p>In 2014-15 the Institute increased the numbers on its Springboard+ programmes by 177%. It has generated 126 new awards from special purpose to taught Masters thereby opening up new pathways for the learner. The Institute is an active contributor to the QQI national RPL practitioner network.</p>
	<p>Sustaining a comprehensive offering across Levels 6 to 10 of the National Framework of Qualifications, ensuring progression and transfer opportunities for all learners within our regional cluster and developing our graduate education programme.</p>	<p>The Institute has focused on enriching the first year experience of new entrants which has successfully impacted on early retention rates. The Institute's Recognition of Prior Learning (RPL) policy and procedure has successfully opened up additional pathways for those with significant life/work achievements to have these validated as part of their valued learning.</p>
	<p>Embedding social innovation, community based learning and research and environmental awareness into our programme portfolio.</p>	<p>The work readiness of graduates continues to be a central theme in the design and content of programmes and work placements.</p>

2018 Ambition	We will achieve this through:	Progress to date
<p>We will continue to strengthen our civic, social and environmental engagement with the regions, communities and sectors we serve.</p>	<p>Communicating and collaborating with the regions, communities and sectors we serve to enhance our contribution to their social, cultural and economic development.</p>	<p>The Regional Skills Fora in the South-East, South West and Mid-East is the key conduit of the Institute’s communication and collaboration strategies in the region and beyond. Partnership agreements, the mapping of skills in the region and skill needs, improving student pathways through further and higher education are some of the ways this is achieved.</p>
	<p>Developing, implementing and promoting an environmental sustainability policy.</p>	<p>The Institute has enhanced sustainability through the design of its new buildings, the management of its waste services, including its emphasis on recycling, and smarter travel campus initiatives. The Institute remains on course to achieve the energy efficiency targets set by the Sustainable Energy Authority Ireland (SEAI) for 2020.</p>
	<p>Cultivating open, innovative relationships with regional business, enterprise, professions and economic communities.</p>	<p>The Institute is committed to building strong and productive relationships with a range of organisations through the delivery of tailored educational programmes, research and technology transfer initiatives and the roll out of new structured post graduate programmes for Masters and Doctoral students.</p>
<p>We will support industry to increase employment and create employment opportunities.</p>	<p>Building entrepreneurial and knowledge capacity in the region by fostering research which supports economic growth.</p>	<p>The Institute continues to build its reputation with regional enterprise, communities and professional bodies through the depth and breadth of these interactions. Notable achievements include:</p> <ul style="list-style-type: none"> • €4 million awarded from Enterprise Ireland to grow technology transfer and commercialisation. • Enterprise Ireland Design + Technology Gateway established in January 2016 which achieved over 120% of year 1 targets. • The President’s Awards that help drive research and innovation activities.





INSTITUTE OF TECHNOLOGY CARLOW

GOAL 5

Reputation, Public Confidence and Sustainability

“ We will continue to develop an internationally-orientated organisation, with a robust self-evaluation, peer review and quality enhancement culture, as we strive to embody the highest international standards of provision, transparency and stewardship of resources ”.

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BY 2018 WE WILL HAVE:

- Maintained our position as a high performing Category 1 higher education institution as determined through the HEA Strategic Dialogue/Performance Funding.
- Commenced the formal processes for Institutional Review 2018/19 with QQI focused on quality enhancement and building on the outcomes of a comprehensive set of reviews undertaken across the organisation.
- Continued to prioritise development, recognition and support mechanisms for all staff using international benchmarks.
- Further incorporated the learner voice in all aspects of the Institute.
- Worked with other Higher Education Institutions to establish equivalency recognitions of practical and research experience at Level 10.
- Embedded the principles set out in the Athena SWAN charter in continuing to promote inclusivity, participation and equality.

The Institute demonstrated “...an excellent model of transparency for the sector, which gives visibility for the quality environment in which they operate and...further embeds trust amongst all stakeholders in relation to their policies and procedures, programmes and registers, and most importantly activities in relation to all of their reviews and outcomes of same”

Quality and Qualifications Ireland (QQI), Annual Dialogue meeting 2016

ENHANCING A QUALITY ETHOS

The Institute is committed to an internationally-benchmarked quality assurance and enhancement culture underpinned by robust self-evaluation and peer review processes. As the Institute prepares for Institutional Review in 2018/19, it has proactively driven its periodic review of all academic activities, including detailed programme reviews and broader Faculty/Campus reviews.

The Institute has moved to bring this level of examination to each professional and learner support function through a systematic evaluation of all its professional operations and services by 2018 and thereafter every five years. This Professional Support Services (PSS) Review was completed by the Library and Computer Services in 2016. The other professional services areas are committed to completing similar reviews by 2018.

“The panel commends the evident innovative, positive and proactive culture of the Library as well as its learner and staff centred focus and civic engagement activities”

“We... commend and congratulate the LLL centre and the extended campus on their innovation, collaborative provision success, and growth rates, and commend both the regional focus of provision and the flexibility and breadth of programmes currently being provided which are clearly benefitting learners and the communities served”

Lifelong Learning Strategic Review Report 2015





GOAL 5 REPUTATION, PUBLIC CONFIDENCE AND SUSTAINABILITY

HIGHEST INTERNATIONAL STANDARDS OF PROVISION, TRANSPARENCY AND STEWARDSHIP OF RESOURCES

Ireland invests over €2 billion in its higher education and research system each year, almost two-thirds of which is provided by Irish taxpayers. For the past three years, the Higher Education Authority, working closely with the Department of Education, has been spearheading a new approach to the performance of the higher education and research system. Under this new relationship, the Government sets out what is expected from the system under seven headings, including meeting skills needs, equity of access and excellence in research, and knowledge exchange.

Institute of Technology Carlow entered into a performance compact with the HEA to agree strategic objective indicators of success that align our mission, strategy and profile with national priorities. This agreement provided metrics to assess our performance over a three year period. HEA has concluded two rounds of performance reviews and made funding decisions based on measurable performance outcomes. Institute of

Technology Carlow has over the course of these two cycles consistently demonstrated a high level of performance and a strong capacity to plan strategically and manage our affairs.

Our success is also driven by benchmarking our performance with national and international exemplars.

“...institutes which were more ambitious in their plans over the period included: Institute of Technology Carlow (40.2% growth), fuelled by a continuation of its trend of significant student growth, underpinned by strong demographics and further expansion of part-time provision”

(HEA report “Financial Review of the Institutes of Technology” Oct 2016)

**GOAL 5
REPUTATION, PUBLIC CONFIDENCE AND SUSTAINABILITY**

2018 Ambition	We will achieve this through:	Progress to date
We will further embed quality assurance and enhancement arrangements, leading best practice and meeting all statutory requirements.	Achieving and maintaining alignment between our quality assurance framework and international standards and guidelines.	The Institute has completed its Quality Assurance work plan as set out in 2012 and pro-actively monitors and enhances its processes and systems. It has achieved Delegation of Awarding Authority (DA) to issue Level 9 (Taught, Research and Joint Awards) from Quality and Qualifications Ireland (QQI). This is coupled with DA to Level 10 in the Life Sciences. Since 2013 all independent panel reviews of all Institute activities in Faculties, Campuses and Professional Support Services have consistently reported positive assessments.
	Enhancing the quality ethos through engagement with staff, learners, industry, local communities and collaborative partners.	The Institute has been the first Institute of Technology to initiate a review of its professional services; two areas have completed the review and the other areas will complete within the next 2 years.
We will provide a multi-disciplinary presence while facilitating progression to the highest possible level in specialist areas.	Reviewing our programme portfolio to facilitate maximum opportunities for learners.	The Institute has completed an independent quality and strategic review of all its academic activities and the outcomes of these are published on the Institute's website.
	Enhancing the provision and communication of access routes to programmes for non-standard entrants.	Access targets have been achieved and pathways for non-standard learners have been clearly set out to support and expand student progression opportunities.
	Embedding social innovation, community based learning and research and environmental awareness into our programme portfolio.	Building upon our achieved commitments under ' <i>Transitions</i> ', pathways from further education to higher education in the Institute have been enhanced through better, more structured links with Further Education providers across the Institute's catchment area. Retention rates of students, particularly those in the first to second year cohort, are amongst the highest in the technological sector.
We will reinforce public confidence in all activities of our Institute.	Enhancing external engagement with academic programmes.	Appropriate Public Body recognition has been achieved for our programmes of study.
	Communicating the activities of our Institute, our achievements, programmes and partnerships and contribution to society and the economy.	Quality Assurance and Enhancement Review outcomes are available to all on the Institute's website. The Institute's annual reports are also available online.
	Increasing corporate and individual membership of external bodies.	Membership on external bodies has increased and collaborative working enhanced in the areas of programme development, regional engagement and specialist support offered to organisations.

2018 Ambition	We will achieve this through:	Progress to date
We will embody the highest standards of governance, stewardship and accountability.	Maintaining and publishing accurate and objective information on all our activities including corporate governance and financial matters.	The Institute is recognised by the HEA as achieving Category 1 through its Performance Compact through two cycles and the Institute has successfully re-engaged with QQI through its defined processes.
	Providing access to services through technology so as to continually facilitate effective management.	In its October 2016 Financial Review of the Institutes of Technology the HEA described Institute of Technology Carlow as one of only 4 Institutes that are in a relatively secure financial position. The report stated: <i>"... institutes which were more ambitious in their plans over the period included: Institute of Technology Carlow (40.2% growth), fuelled by a continuation of its trend of significant student growth, underpinned by strong demographics and further expansion of part-time provision."</i> In the HEA's review of Gender Equality in HEIs (2016), the Institute has demonstrated gender parity in its Governing Body and Academic Council membership. Current management group composition is 40% female and 60% male.
We will ensure that the Institute has sufficient resources to operate at an optimum level.	Consolidating and diversifying income streams	Since 2014 the Institute's €100 million development programme has delivered 3 new buildings that have greatly enhanced our research, technological transfer, teaching and workshop facilities.
We will prioritise the quality, reputation and productivity of all our personnel.	Continuing to develop and enhance the staff qualifications profile.	The successes and ambitions of the Institute is critically reliant on the quality and commitment of our staff. 31% of academic staff have achieved a Doctorate qualification with a further 18% currently undertaking doctoral studies. 32% of staff are now active in research supervision at Levels 9 and 10.
	Implementing our performance management framework.	
	Continuing to recruit and retain high quality staff.	Overall staff numbers have grown by 19% (WTE) with a 28% growth in academic staff numbers (WTE). High levels of engagement are evident in the large numbers of staff who became directly involved in reviewing this strategic plan, or the numbers who undertake additional training and development opportunities.
	Fostering a high engagement culture.	

GOAL 5
BUILDING FOR OUR FUTURE – NEW DEVELOPMENTS



BARROW CENTRE
January 2012



HAUGHTON BUILDING
September 2016



**NEW SPORTS
CAMPUS SITE**
Planned Opening 2018



DARGAN CENTRE
March 2014



CENTRE FOR AEROSPACE ENGINEERING
February 2015







INSTITUTE of
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APPENDIX 2

TRENDS AND BENCHMARKING OF THE LEARNER PROFILE AT INSTITUTE OF TECHNOLOGY CARLOW

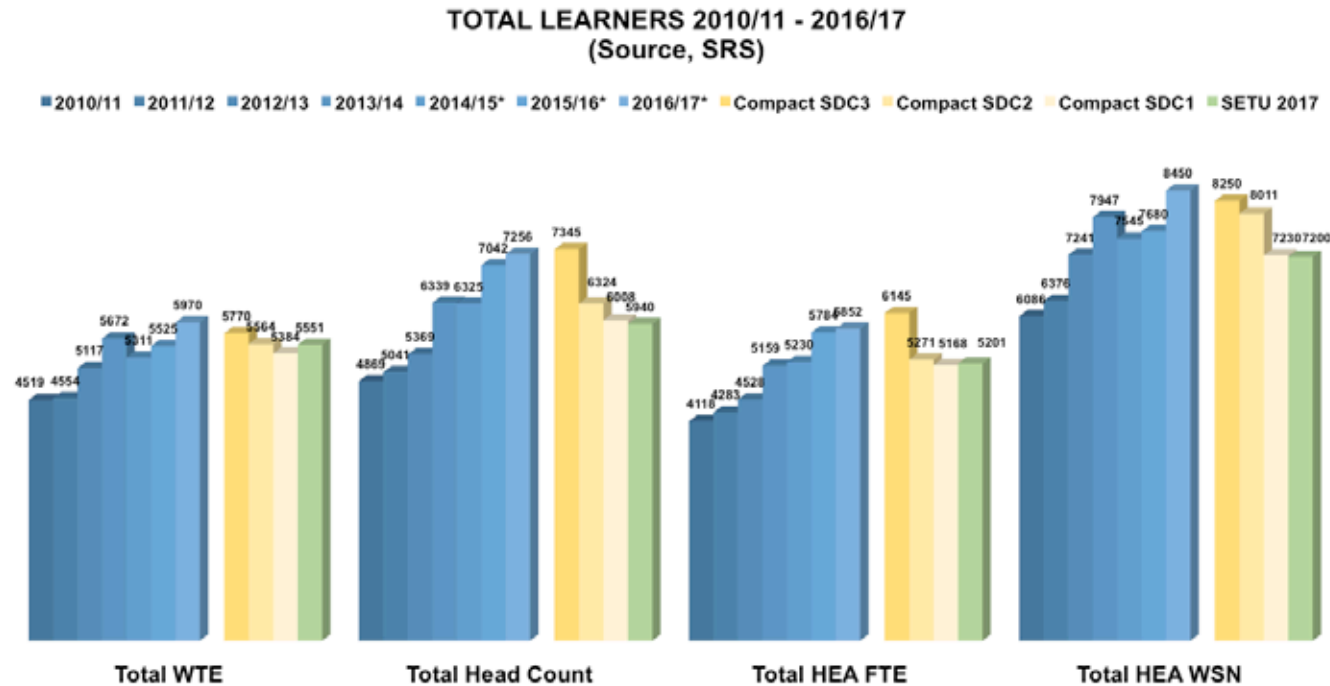


Figure 2.1 Total Learners 2010/11 to 2016/17 at Institute of Technology Carlow (Source, SRS). Earlier Institute projections are presented for comparative purposes. These include the HEA Strategic Dialogue Cycle 3 2017/18 projections (Compact SDC3), Strategic Dialogue Cycle 2 Compact 2016 (Compact SDC2), Strategic Dialogue Cycle 1 Compact 2016 (Compact SDC1) and the 2017 projections in the 2012 Stage 1 submission for the South East Technological University (SETU 2017). *Years where new re-categorisations were applied.

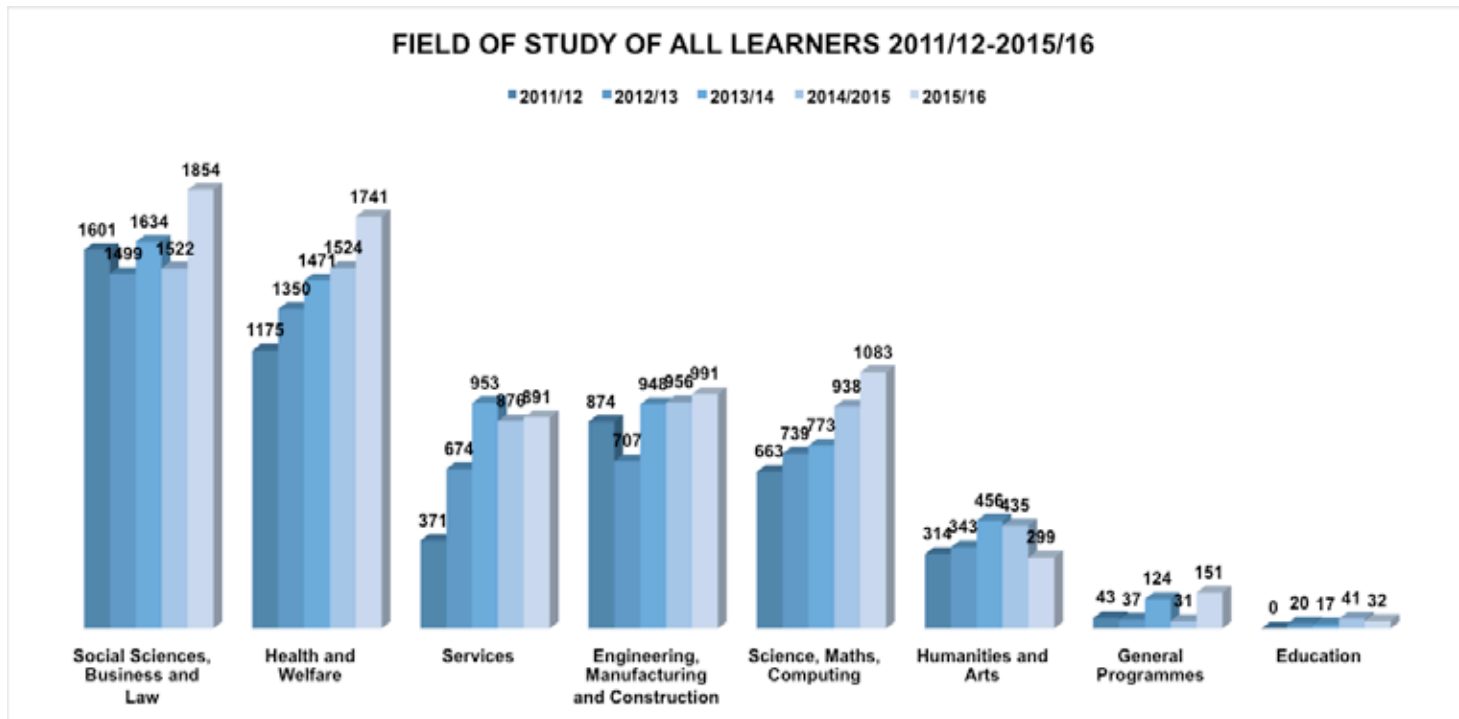


Figure 2.2 Field of study for all students 2010/11 to 2015/16 at Institute of Technology Carlow (Source, SRS).

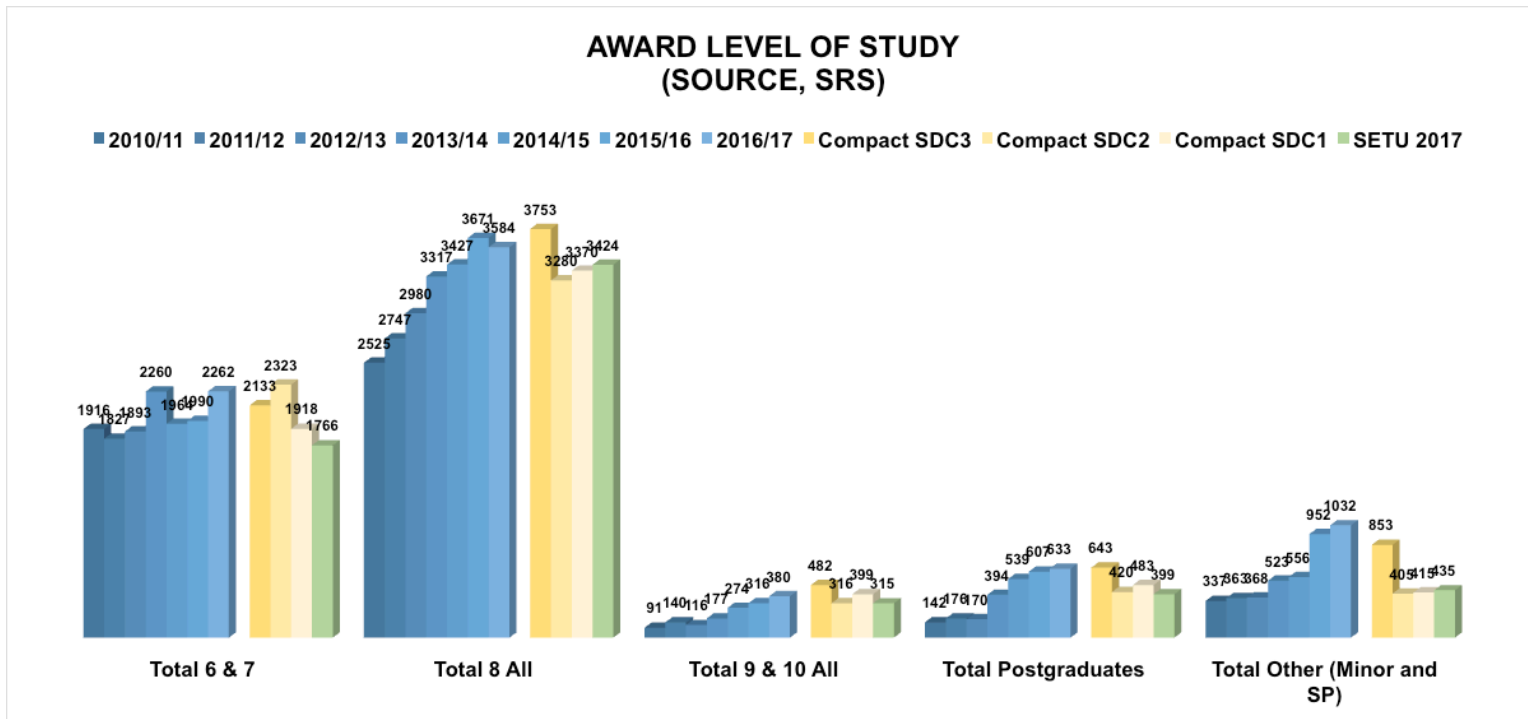


Figure 2.3 Award level of study for all learners 2010/11 to 2016/17 at Institute of Technology Carlow (Source, SRS). Earlier Institute projections are presented for comparative purposes. These include the HEA Strategic Dialogue Cycle 3 2017/18 projections (Compact SDC3), Strategic Dialogue Cycle 2 Compact 2016 (Compact SDC2), Strategic Dialogue Cycle 1 Compact 2016 (Compact SDC1) and the 2017 projections in the 2012 Stage 1 submission for the South East Technological University (SETU 2017).

TOTAL GRADUATES 2006/07 - 2015/16
(Source, SRS)

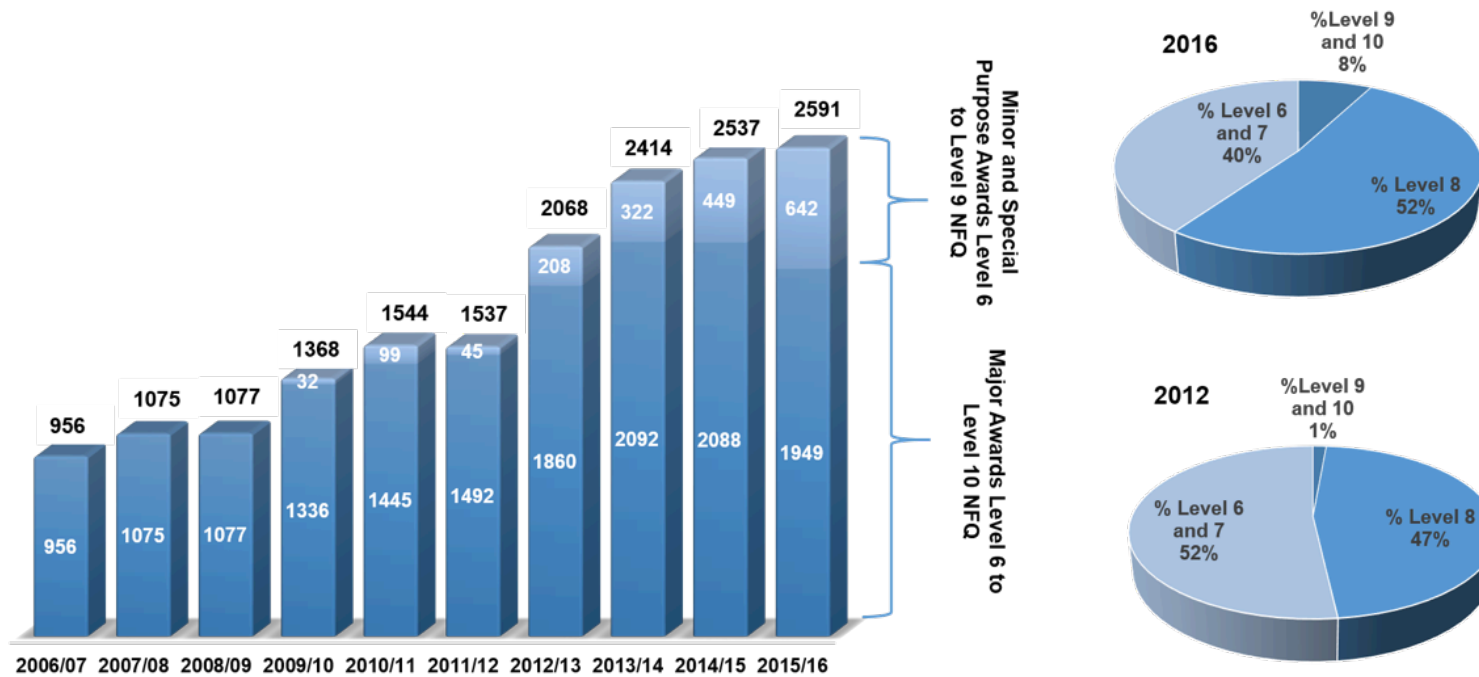


Figure 2.4 Graduate output at Institute of Technology Carlow 2007 to 2016 across Science, Engineering, Computing, Business and Humanities (Source, SRS).

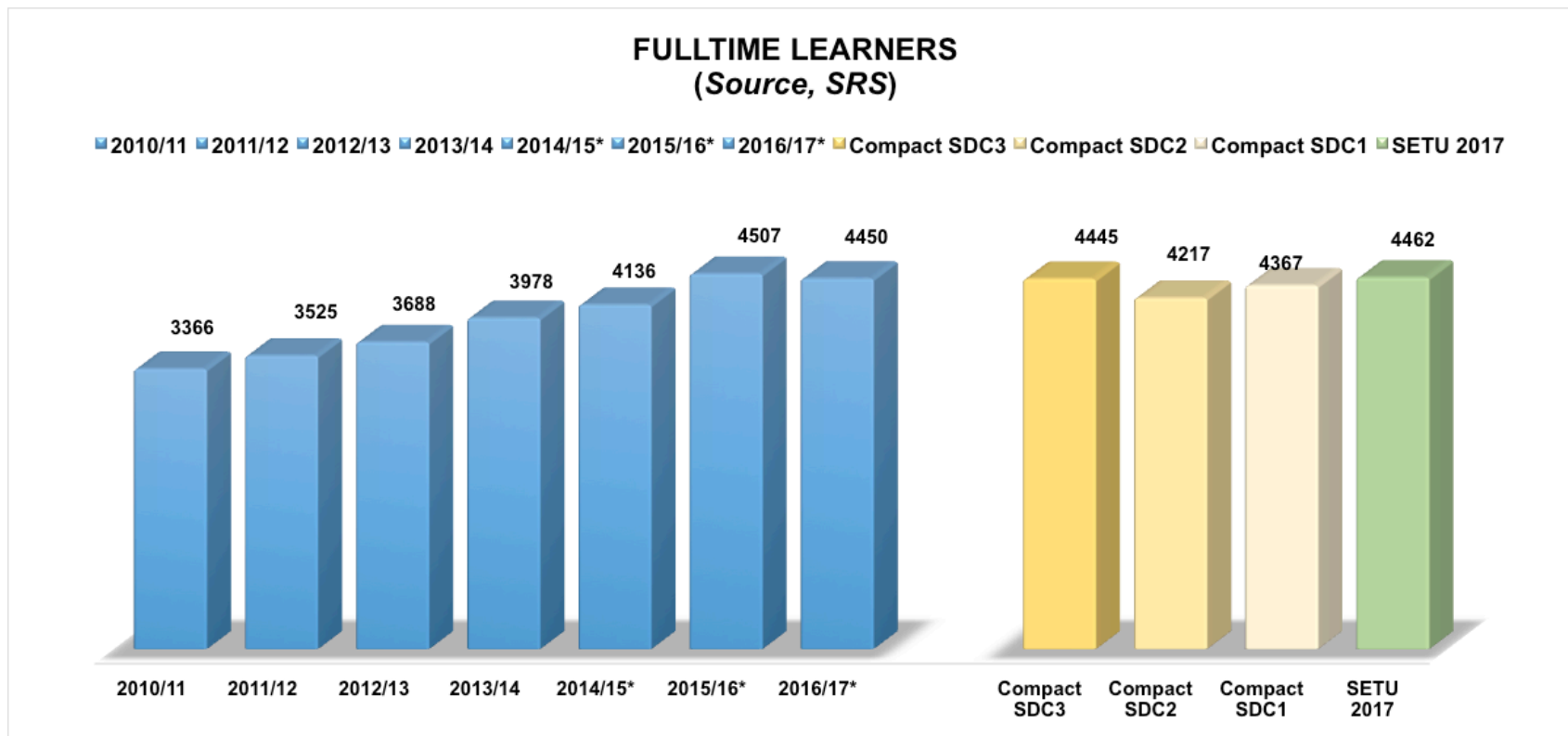


Figure 2.5 Full-time students 2010/11 to 2016/17 at Institute of Technology Carlow (Source, SRS). Earlier Institute projections are presented for comparative purposes. These include the HEA Strategic Dialogue Cycle 3 2017/18 projections (Compact SDC3), Strategic Dialogue Cycle 2 Compact 2016 (Compact SDC2), Strategic Dialogue Cycle 1 Compact 2016 (Compact SDC1) and the 2017 projections in the 2012 Stage 1 submission for the South East Technological University (SETU 2017). *Years where new re-categorisations were applied.

FULL-TIME LEARNERS 2010/11 – 2016/17 (Actual) and 2017/18 – 2019/20 (Projected)
 (Source, SRS, CSO and education.ie)

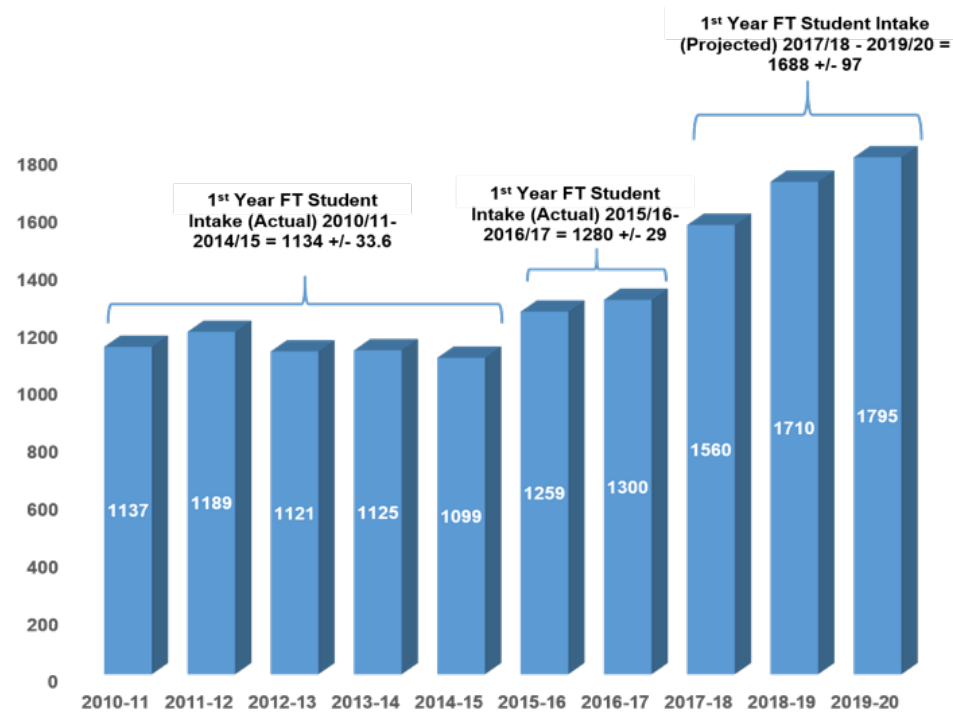


Figure 2.6 Actual (2010/11 – 2016/17) and Projected (2019/20) full-time first year entry to Institute of Technology Carlow, assuming current patterns of participation in higher education in the primary catchment area of the Institute, current market share of higher education new entrants from the post-primary sector and availability of the necessary additional infrastructural and recurrent resources. These projections would result in an increase in full-time learners to approximately 5,800 in 2019/2020 and a total student population of 9,300.

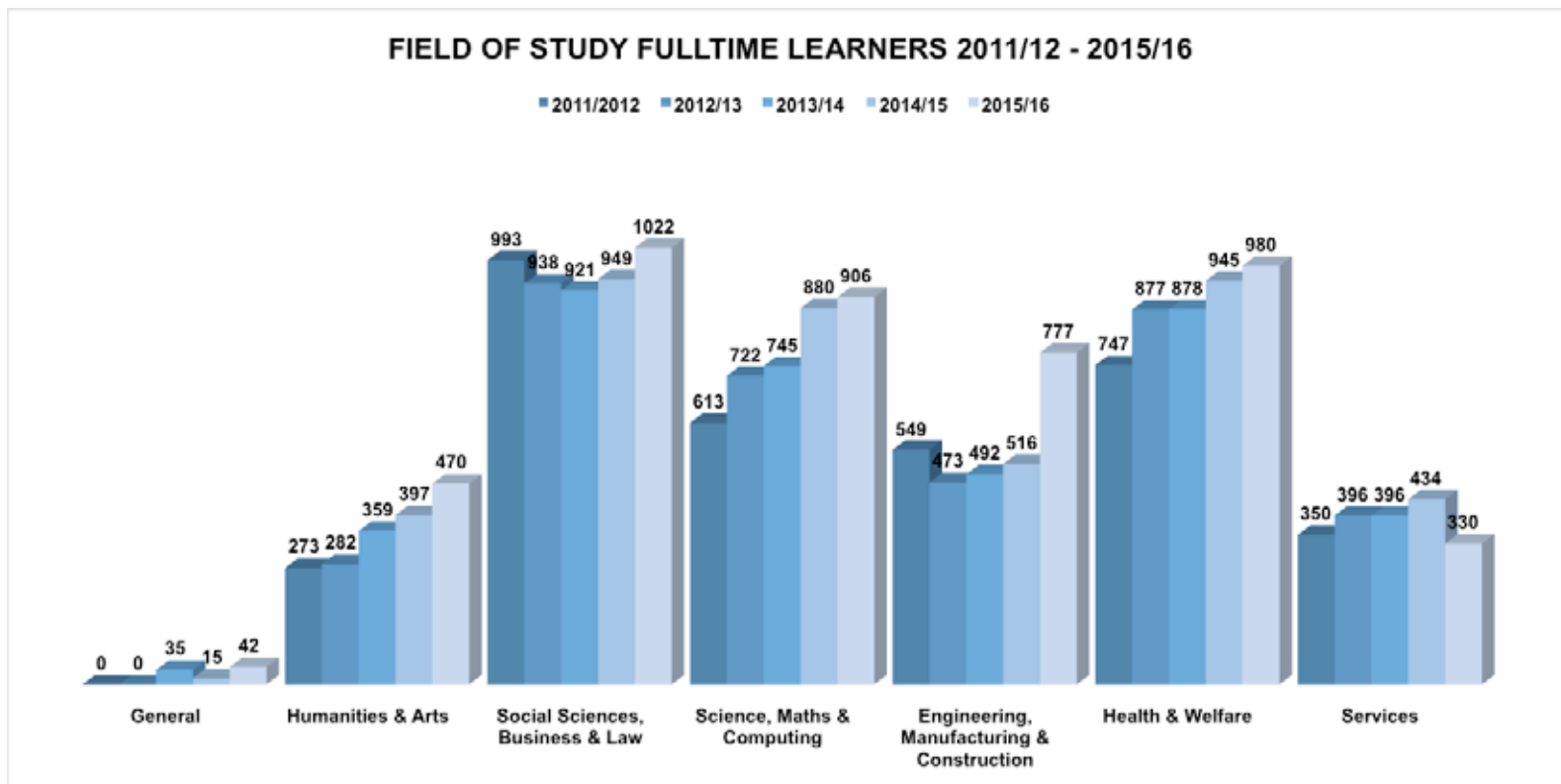


Figure 2.7 Field of study of full-time students 2010/11 to 2015/16 at Institute of Technology Carlow (Source, SRS).

Table 2.1 A comparison of the Leaving Certificate Points (LC, 250) for Irish HEIs taken from The Sunday Times University League Table, together with the average LC points per entrant for the years 2010/11 to 2015/16 from which this was derived. The Leaving Certificate points for entry for the former was calculated in the following way: The median Leaving Certificate points obtained by honours degree entrants, weighted by the latest data on the number of students on each programme. A maximum score of 600 points is assumed and the percentage of the maximum attained is given a 2.5 times weighting in the league table. *Source: Calculated from CAO entry data and HEA/ individual Institution's figures on numbers in each programme.*

HEI	LC Pts (250)	2015: Average LC Points per entrant	LC Pts (250)	2014: Average LC Points per entrant	LC Pts (250)	2013: Average LC Points per entrant	LC Pts (250)	2012: Average LC Points per entrant	LC Pts (250)	2011: Average LC Points per entrant	LC Pts (250)	2010: Average LC Points per entrant
	2016/17		2015/16		2014/15		2013/14		2012/13		2011/12	
Trinity	222	533	215	516	212	509	215	516	209	502	199	477
UCD	200	480	201	482	198	475	196	470	190	457	168	402
UCC	195	468	194	466	190	456	188	451	185	443	172	412
DCU	194	466	190	456	189	454	186	446	181	434	176	423
UL	187	449	184	442	184	442	182	437	181	435	165	396
NUI Galway	179	430	177	425	176	422	174	418	173	414	163	390
Maynooth	173	415	174	418	173	415	179	430	175	421	173	415
Dublin IoT	191	458	172	413	166	398	164	394	159	382	159	381
Cork IoT	163	391	161	386	158	379	155	372	156	374	138	331
Athlone IoT	154	370	154	370	157	377	152	365	144	345	144	345
IoT Tralee	150	360	153	367	160	384	149	358	155	372	136	326
Waterford IoT	151	362	153	367	152	365	151	362	150	360	149	357
Carlow IoT	157	377	152	365	149	358	147	353	148	355	143	343
Dundalk IoT	149	358	150	360	149	358	150	360	148	355	134	321
Galway Mayo IoT	147	353	149	358	153	367	154	370	149	357	154	369
Sligo IoT	151	362	146	350	141	338	143	343	139	333	112	268
Dun Laoghaire IoT	145	348	145	348	148	355	152	365	156	374	157	377
Letterkenny IoT	147	353	143	343	144	346	146	350	150	360	150	361
Limerick IoT	143	343	143	343	143	343	145	348	145	348	135	324
Tallaght IoT	138	331	138	331	139	334	140	336	134	321	119	285
IT Blanchardstown IoT	134	322	136	326	138	331	137	329	142	340	126	302

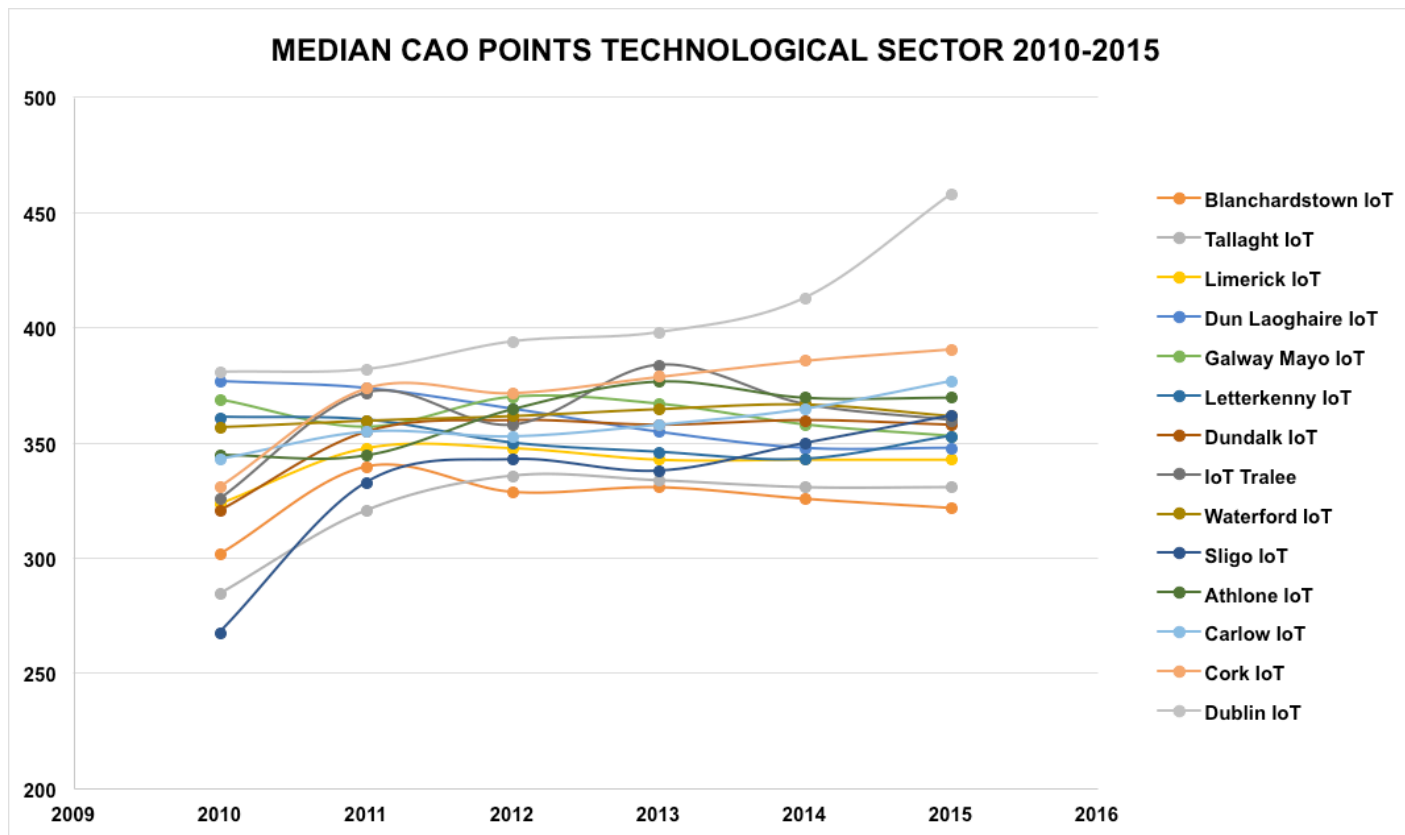


Figure 2.8 Median CAO points Level 8 programmes, Technological Sector 2010-2015.

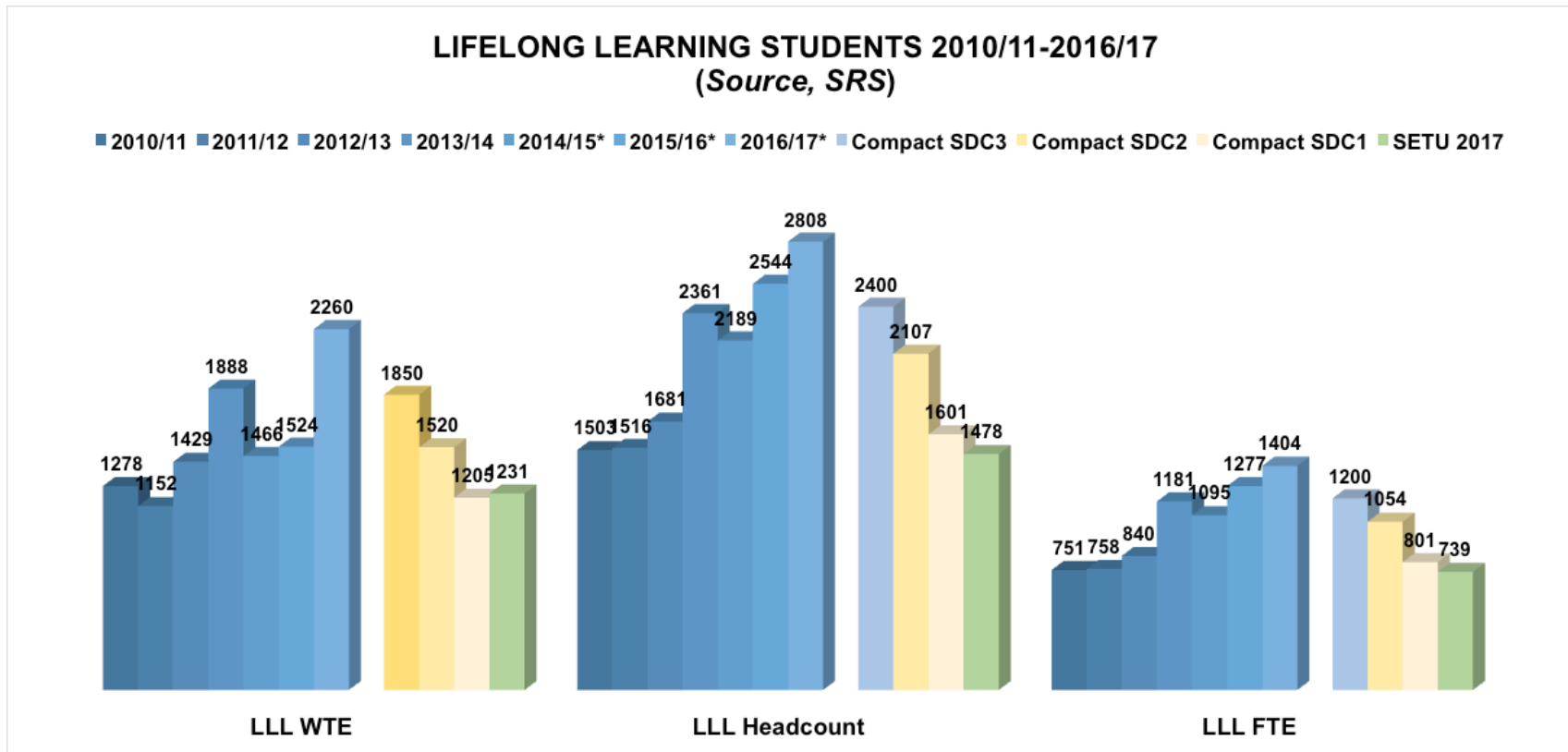


Figure 2.9 Lifelong Learners 2010/11 to 2016/17 at Institute of Technology Carlow (Source, SRS). Earlier Institute projections are presented for comparative purposes. These include the HEA Strategic Dialogue Cycle 3 2017/18 projections (Compact SDC3), Strategic Dialogue Cycle 2 Compact 2016 (Compact SDC2), Strategic Dialogue Cycle 1 Compact 2016 (Compact SDC1) and the 2017 projections in the 2012 Stage 1 submission for the South East Technological University (SETU 2017). *Years where new re-categorisations were applied.

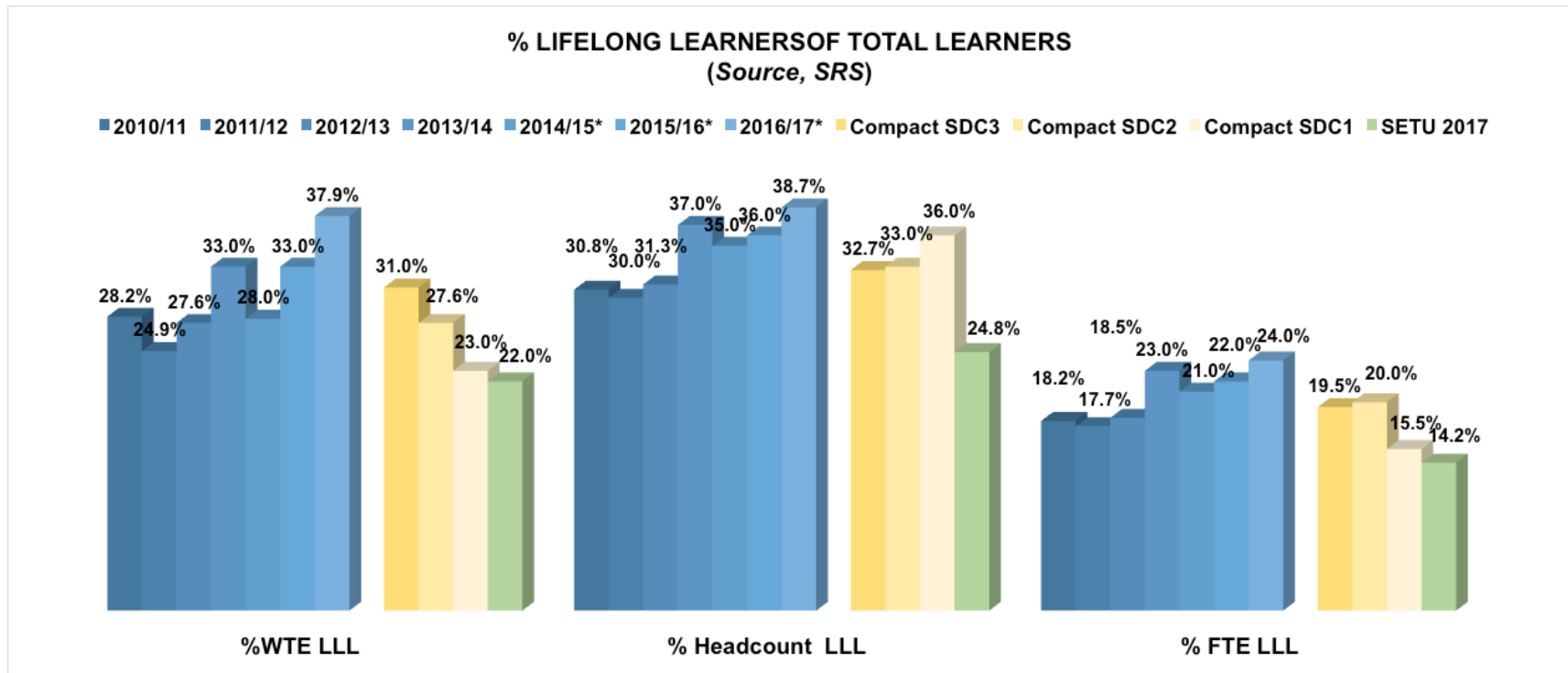


Figure 2.10 % Lifelong Learners 2010/11 to 2016/17 at Institute of Technology Carlow. Earlier Institute projections are presented for comparative purposes. These include the HEA Strategic Dialogue Cycle 3 2017/18 projections (Compact SDC3), Strategic Dialogue Cycle 2 Compact 2016 (Compact SDC2), Strategic Dialogue Cycle 1 Compact 2016 (Compact SDC1) and the 2017 projections in the 2012 Stage 1 submission for the South East Technological University (SETU 2017). *Years where new re-categorisations were applied.

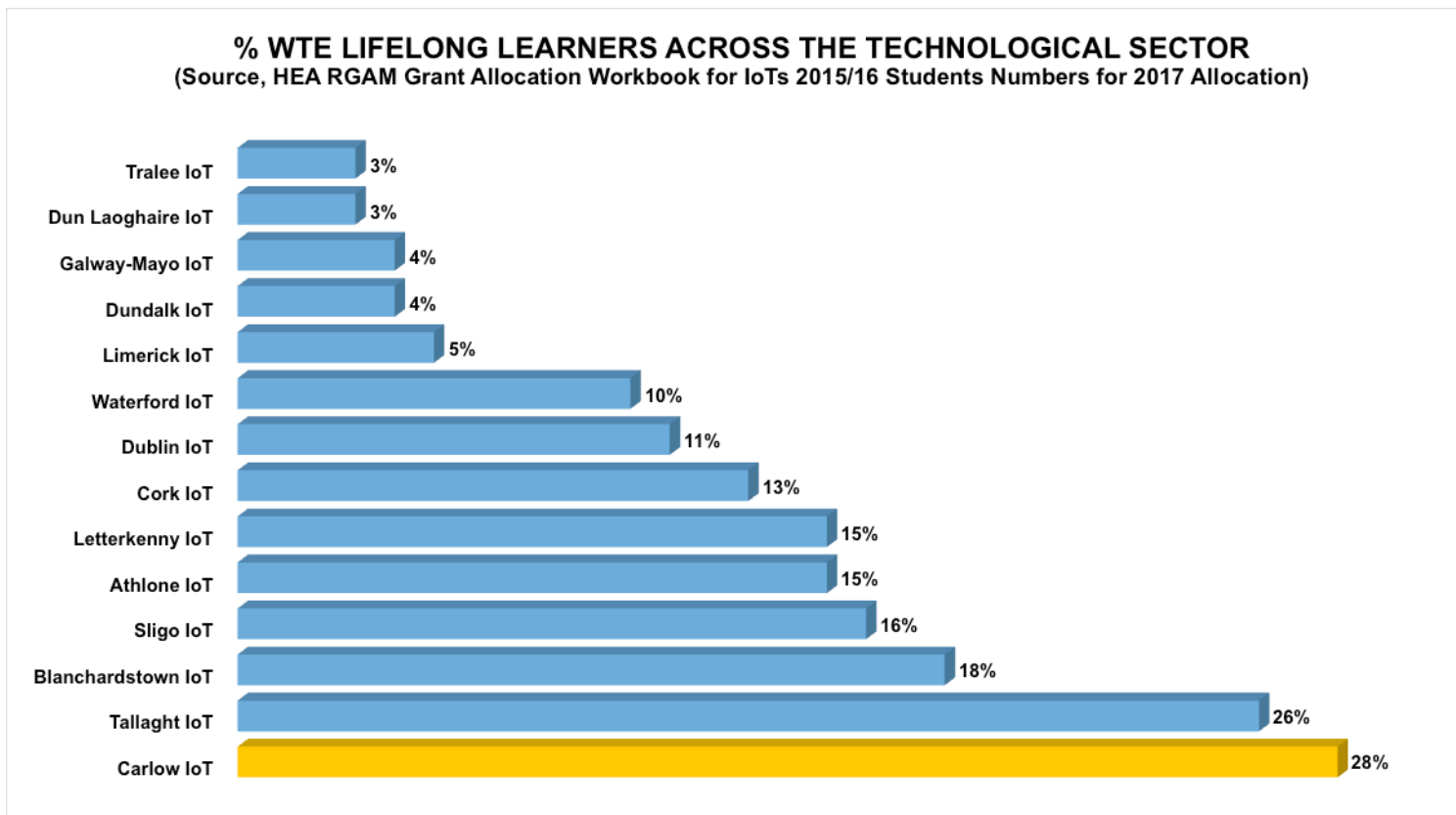


Figure 2.11 % WTE Lifelong Learners 2015/16 across the Technological Sector (Source, HEA RGAM Grant Allocation Workbook for IoTs 2015/16 Student Numbers for 2017 Allocation).

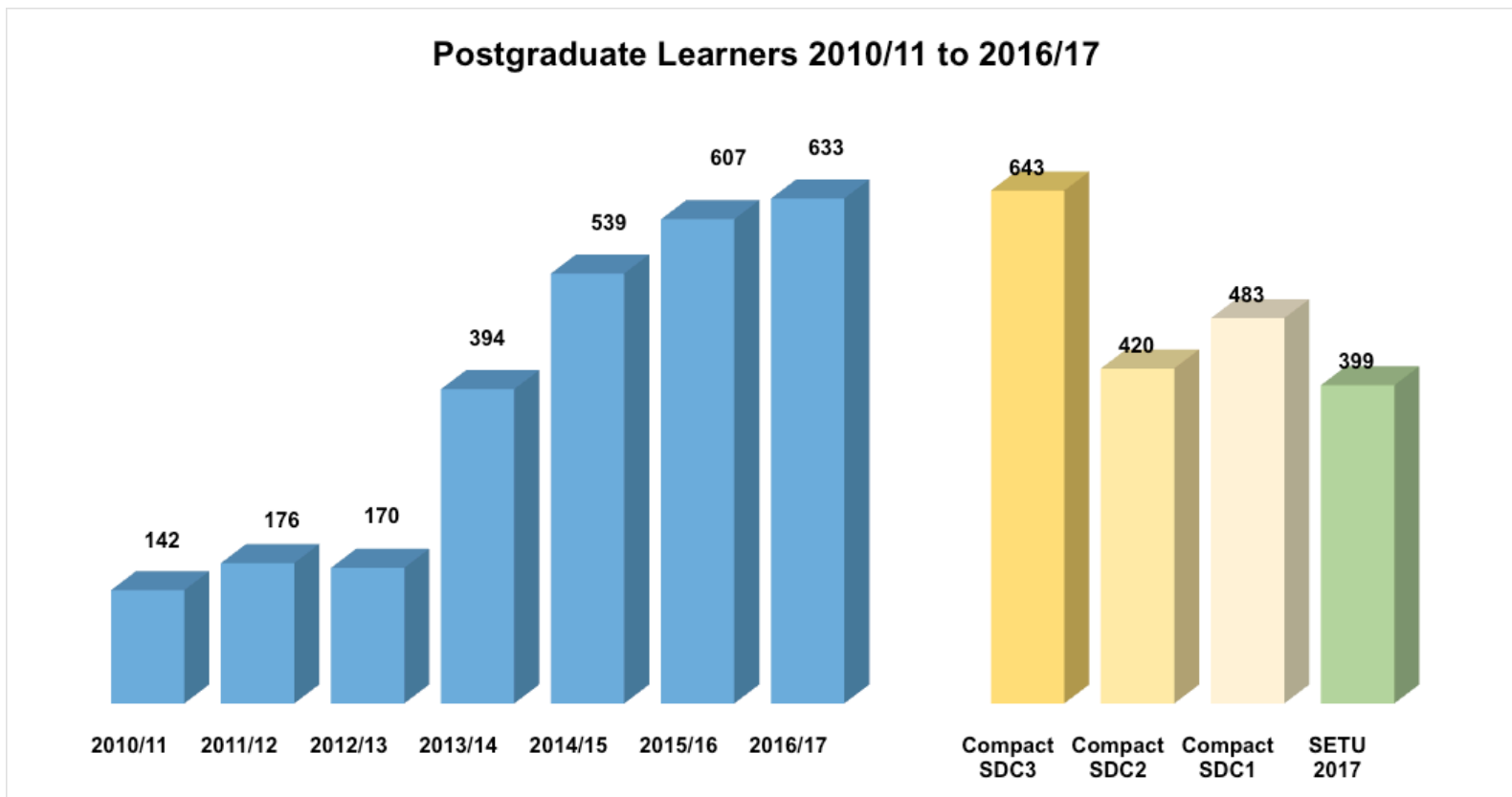


Figure 2.12 Total Postgraduate Learners 2010/11 to 2016/17 at Institute of Technology Carlow (Source, SRS). Earlier Institute projections are presented for comparative purposes. These include the HEA Strategic Dialogue Cycle 3 2017/18 projections (Compact SDC3), Strategic Dialogue Cycle 2 Compact 2016 (Compact SDC2), Strategic Dialogue Cycle 1 Compact 2016 (Compact SDC1) and the 2017 projections in the 2012 Stage 1 submission for the South East Technological University (SETU 2017).

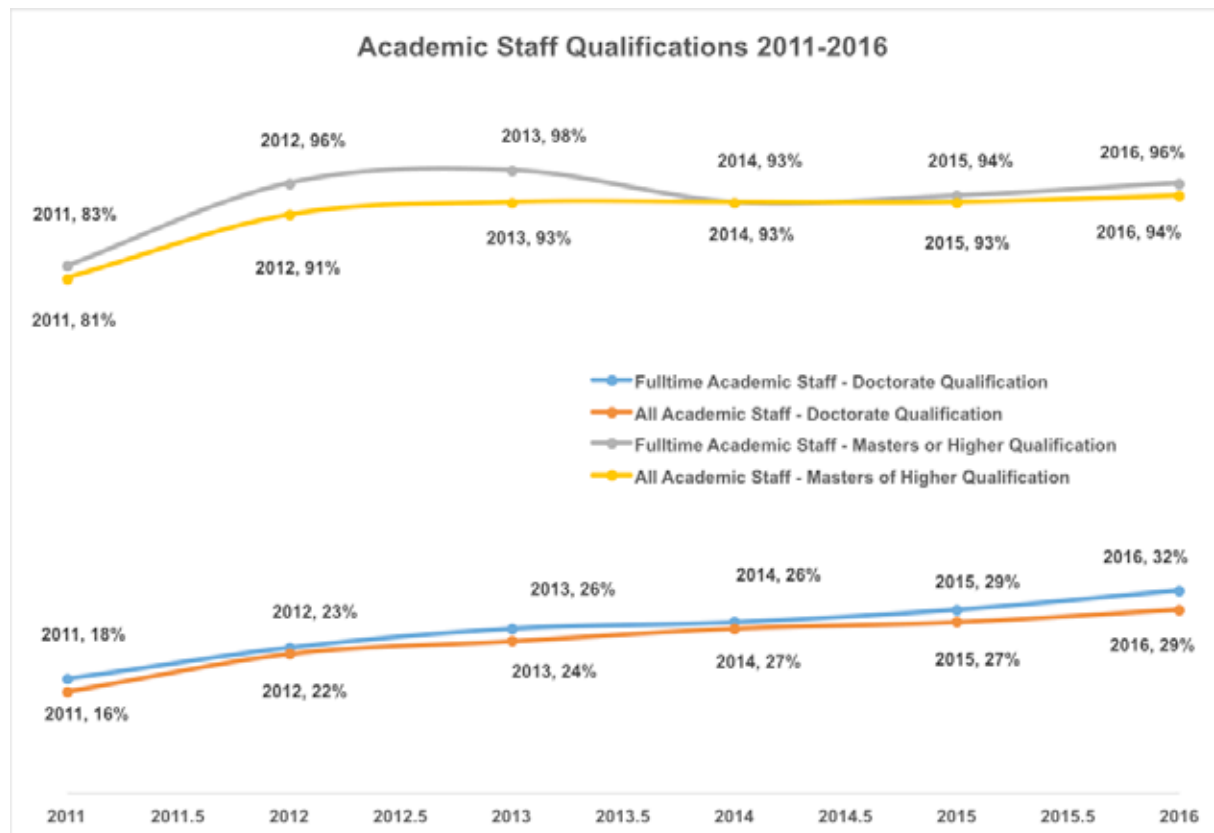


Figure 2.13 Academic staff qualifications profile 2012-2016 (HEA Returns).

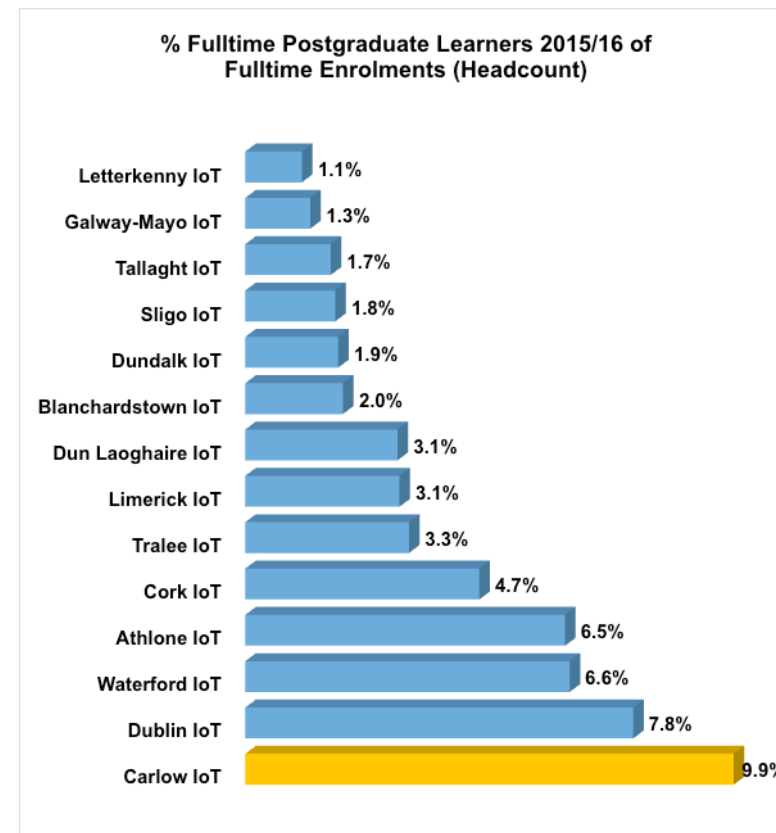
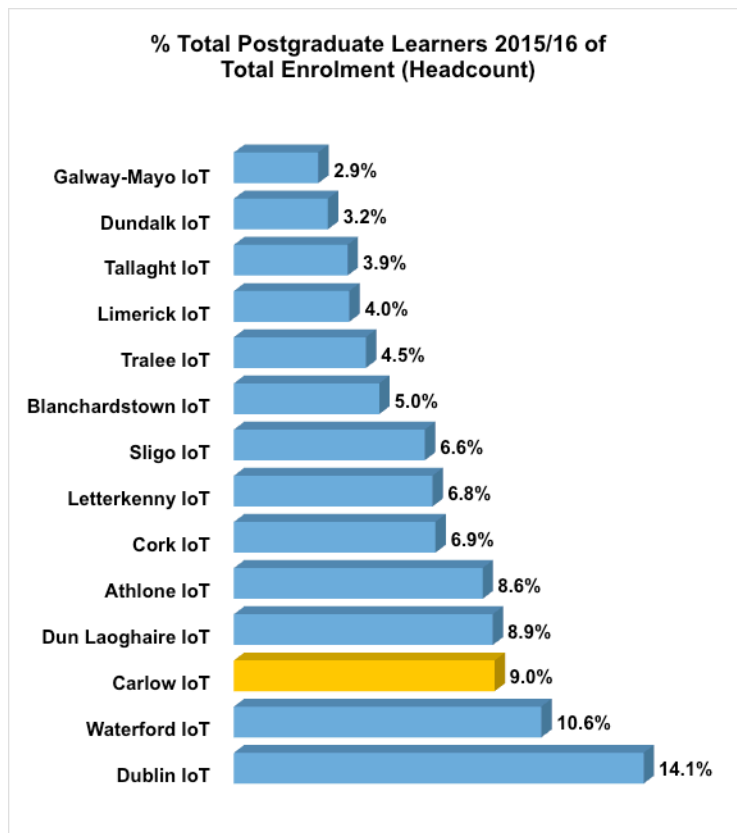
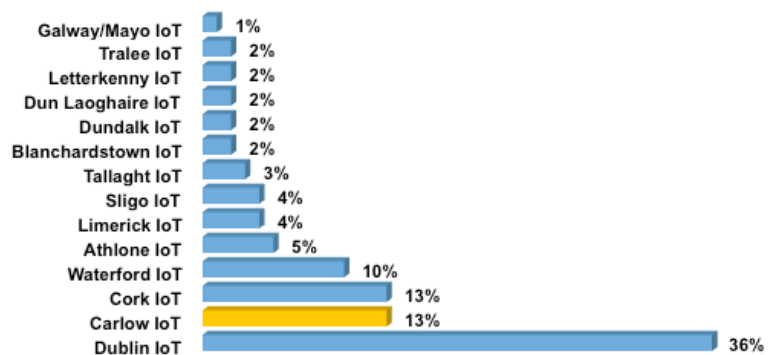
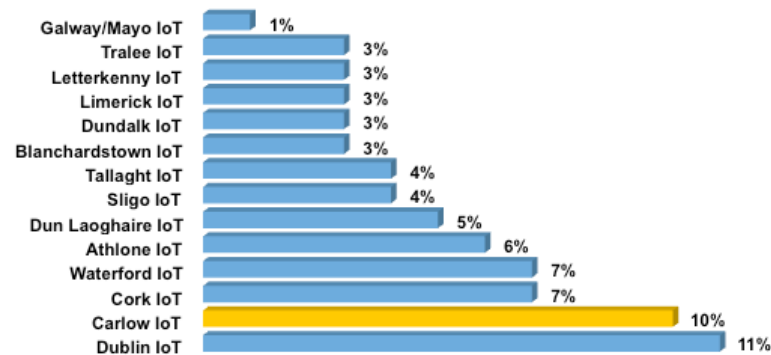


Figure 2.14 Postgraduate Learners (Headcount) 2015/16 across the Technological Sector (Source, HEA Enrolment Statistics for IoTs 2015/16). % total postgraduate learners 2015/16 of total enrolments (headcount, left chart) and % full-time postgraduate learners 2015/16 of full-time enrolments (headcount, right chart).

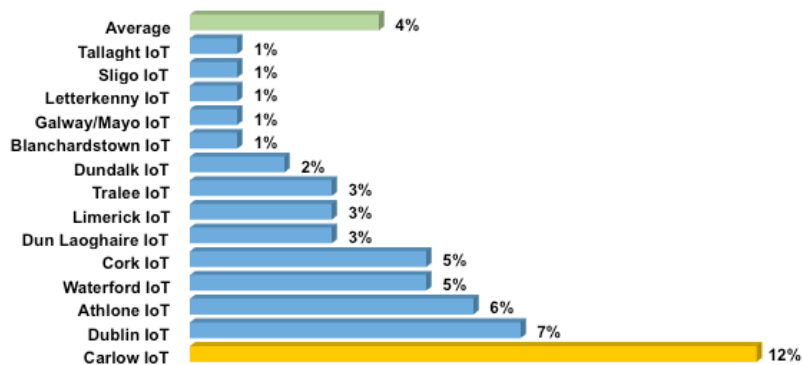
% Contribution to total WTE Postgraduate Learners within the Technological Sector 2015/16



% WTE Postgraduate Learners of Total WTE Learners within the Technological Sector 2015/16



% WTE Postgraduate Fulltime Learners of Total WTE Full-time



% WSN Postgraduate Learners of Total WSN

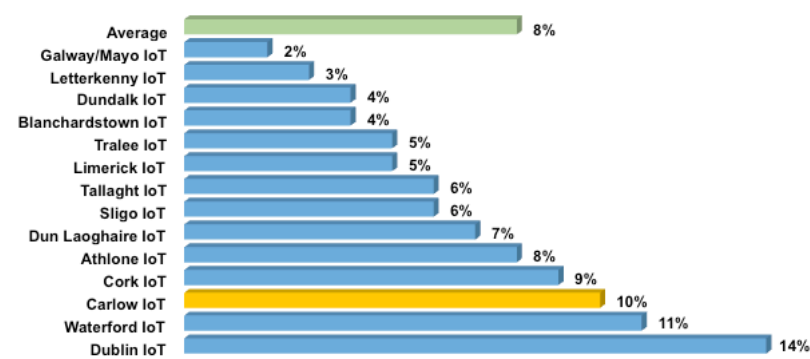


Figure 2.15 Postgraduate Learners WTE and WSN 2015/16 across the Technological Sector (Source, HEA RGAM Grant Allocation Workbook for IoTs 2015/16 Student Numbers for 2017 Allocation).

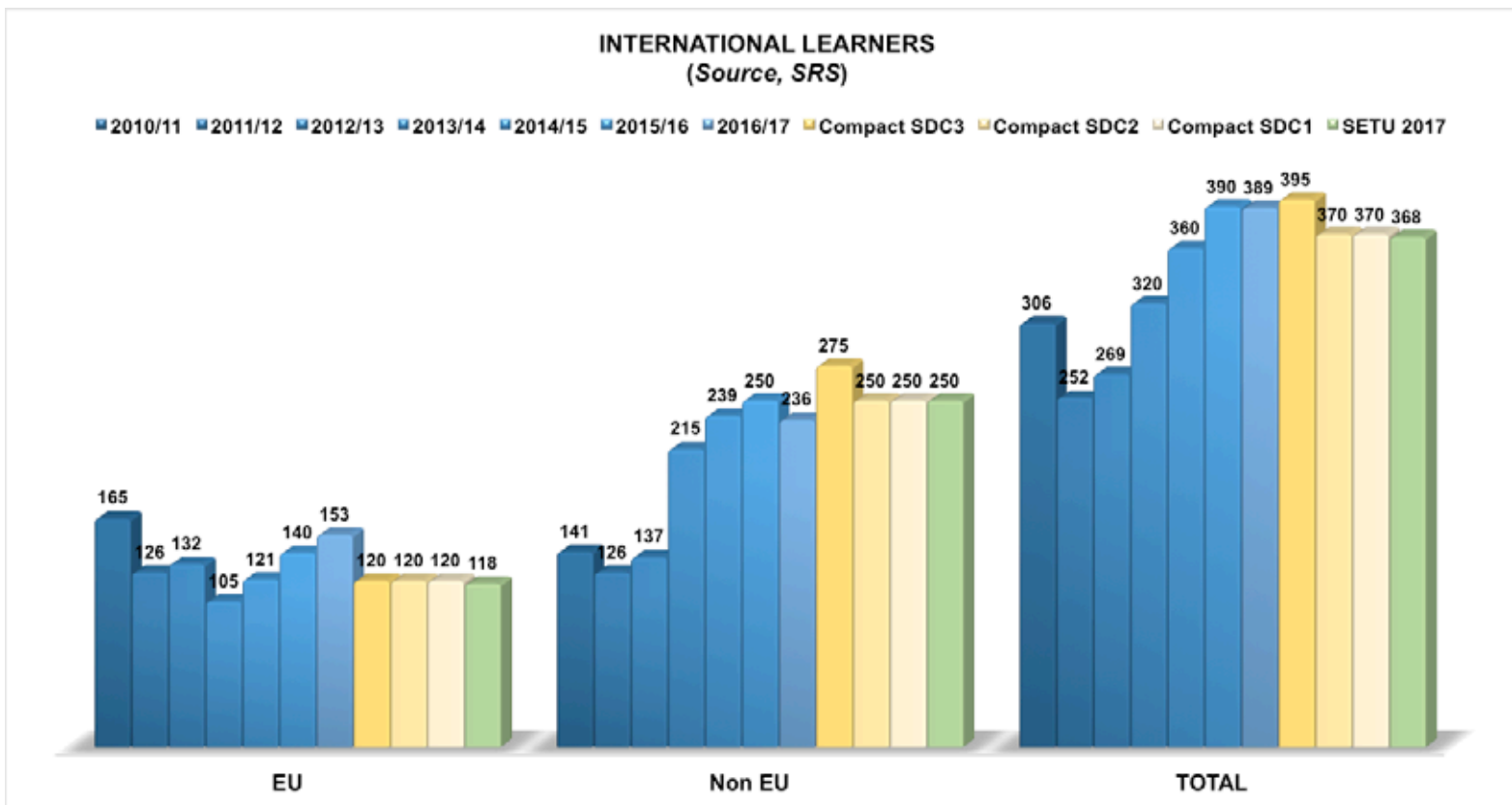


Figure 2.16 International Learners 2010/11 to 2016/17 at Institute of Technology Carlow. Earlier Institute projections are presented for comparative purposes. These include the HEA Strategic Dialogue Cycle 3 2017/18 projections (Compact SDC3), Strategic Dialogue Cycle 2 Compact 2016 (Compact SDC2), Strategic Dialogue Cycle 1 Compact 2016 (Compact SDC1) and the 2017 projections in the 2012 Stage 1 submission for the South East Technological University (SETU 2017).

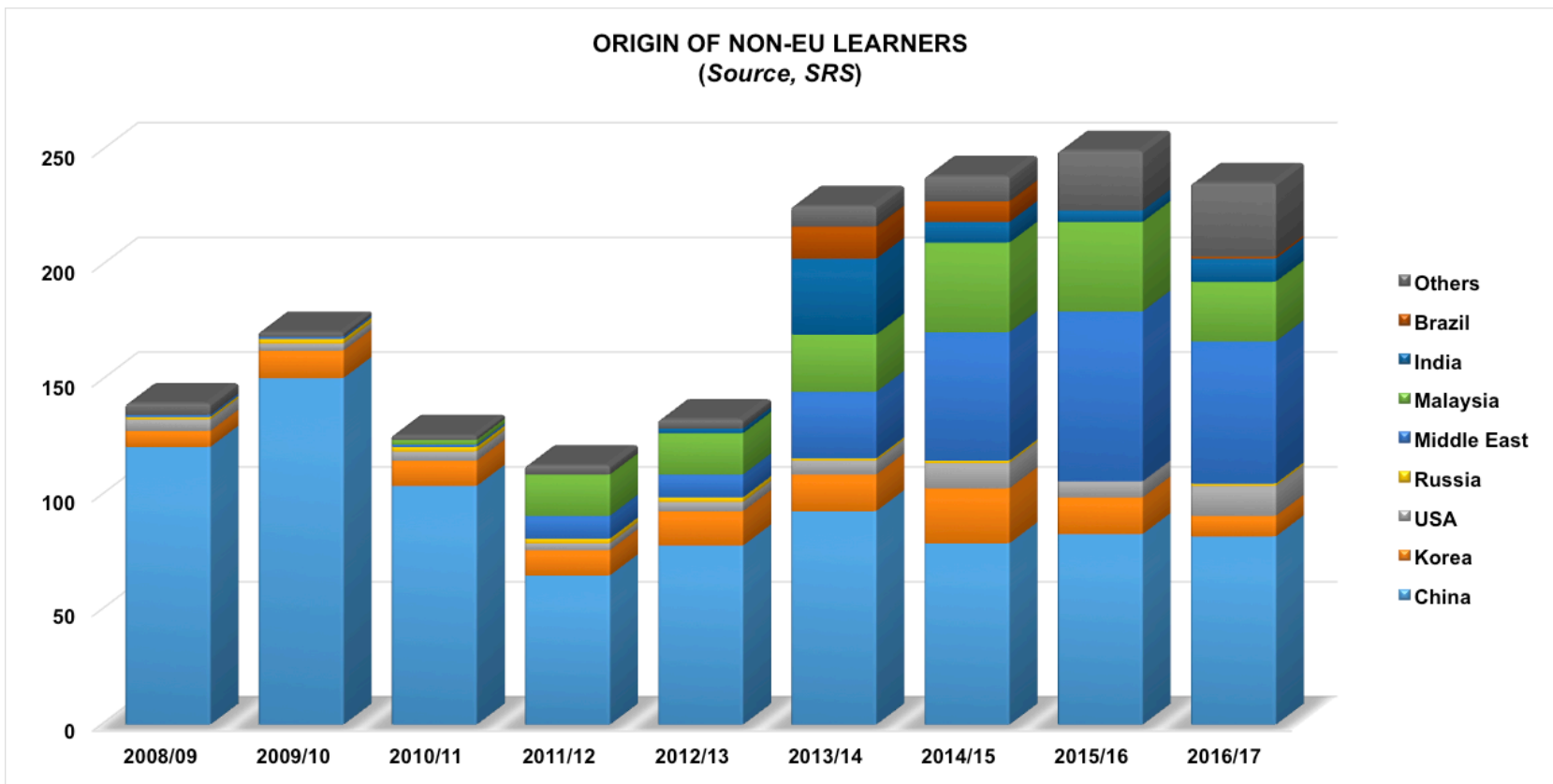


Figure 2.17 Origin of Non-EU Learners 2010/11 to 2016/17 at Institute of Technology Carlow.

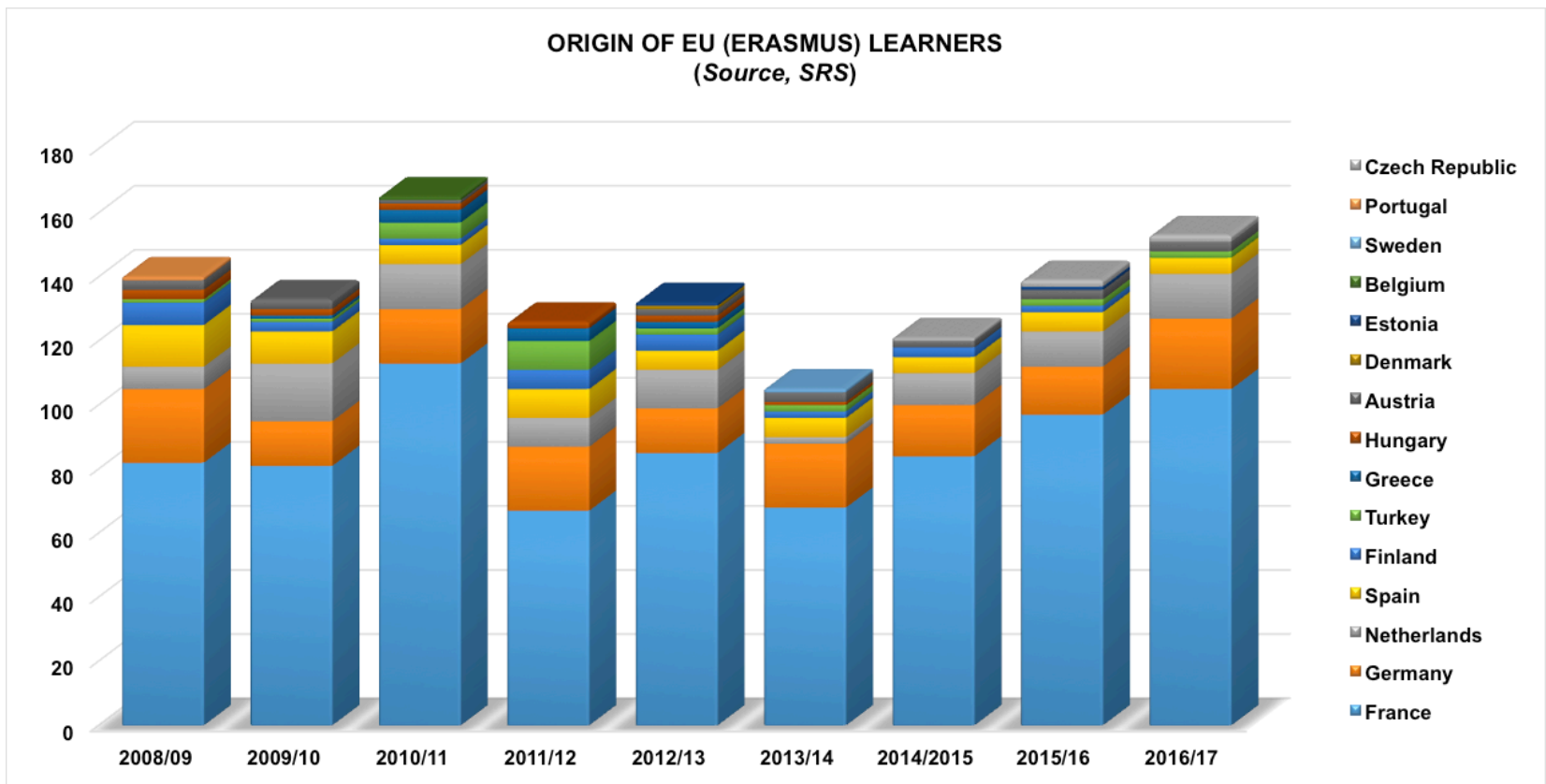


Figure 2.18 Origin of EU (Erasmus) Learners 2010/11 to 2016/17 at Institute of Technology Carlow.

% INTERNATIONAL (NON-EU) LEARNERS ACROSS THE TECHNOLOGICAL SECTOR
 (Source, HEA RGAM Grant Allocation Workbook for IoTs 2015/16 Students Numbers for 2017 Allocation)

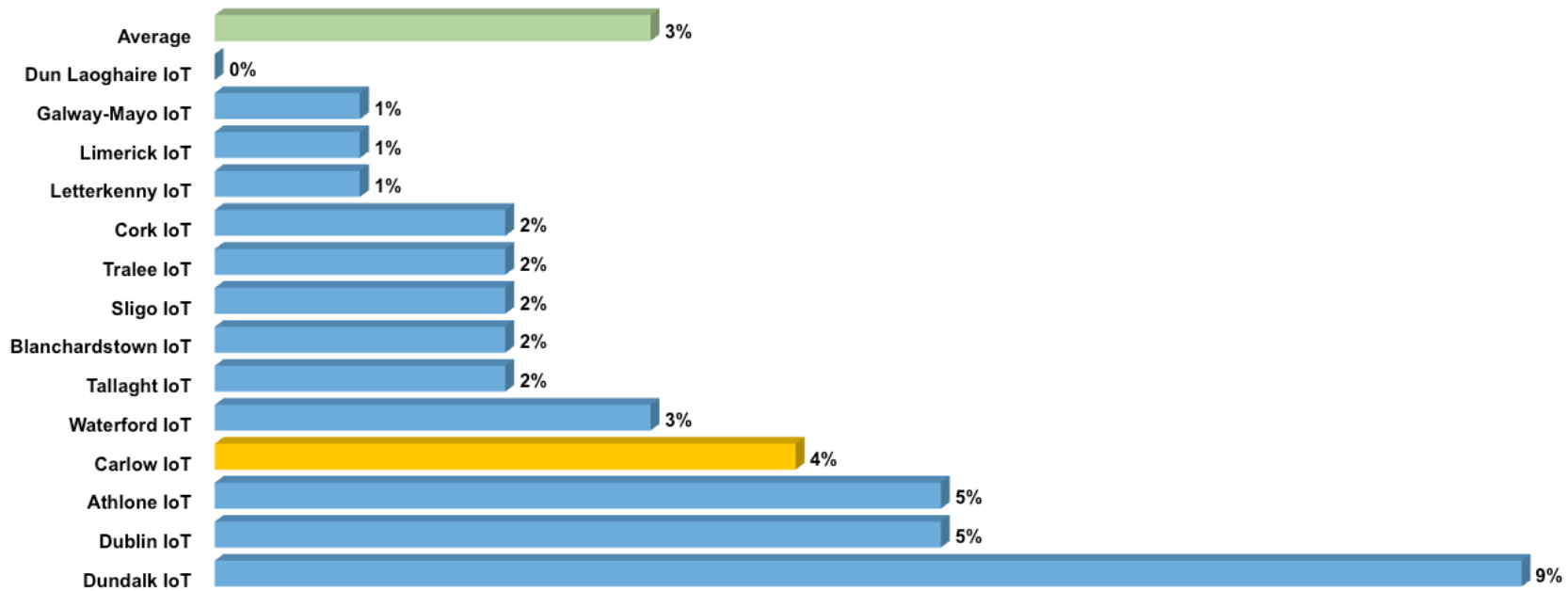


Figure 2.19 % International (Non-EU) Learners 2015/16 across the Technological Sector (Source, HEA RGAM Grant Allocation Workbook for IoTs 2015/16 Student Numbers for 2017 Allocation).

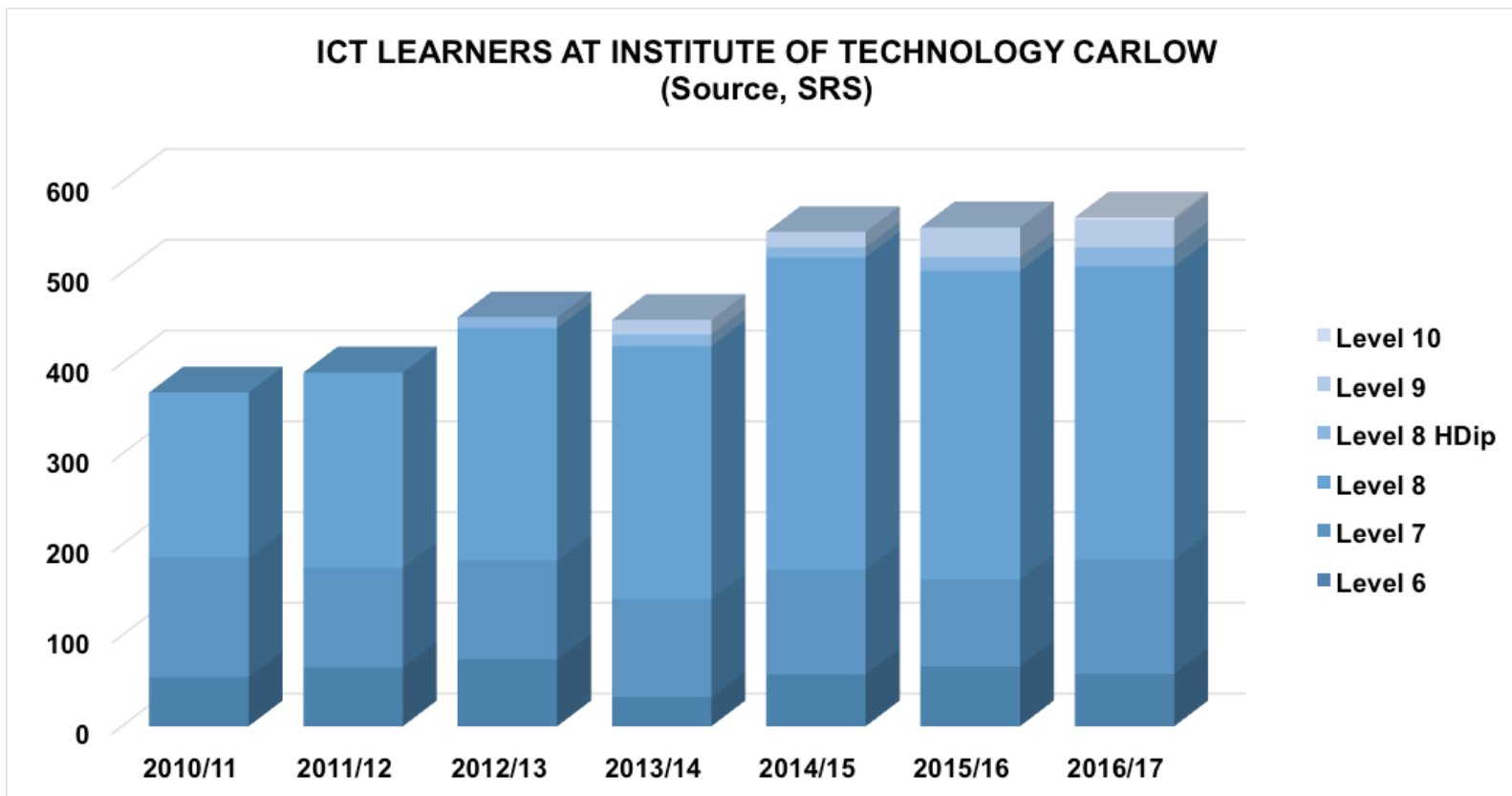


Figure 2.20 ICT Learners 2010/11 to 2016/17 at Institute of Technology Carlow (Source, SRS).

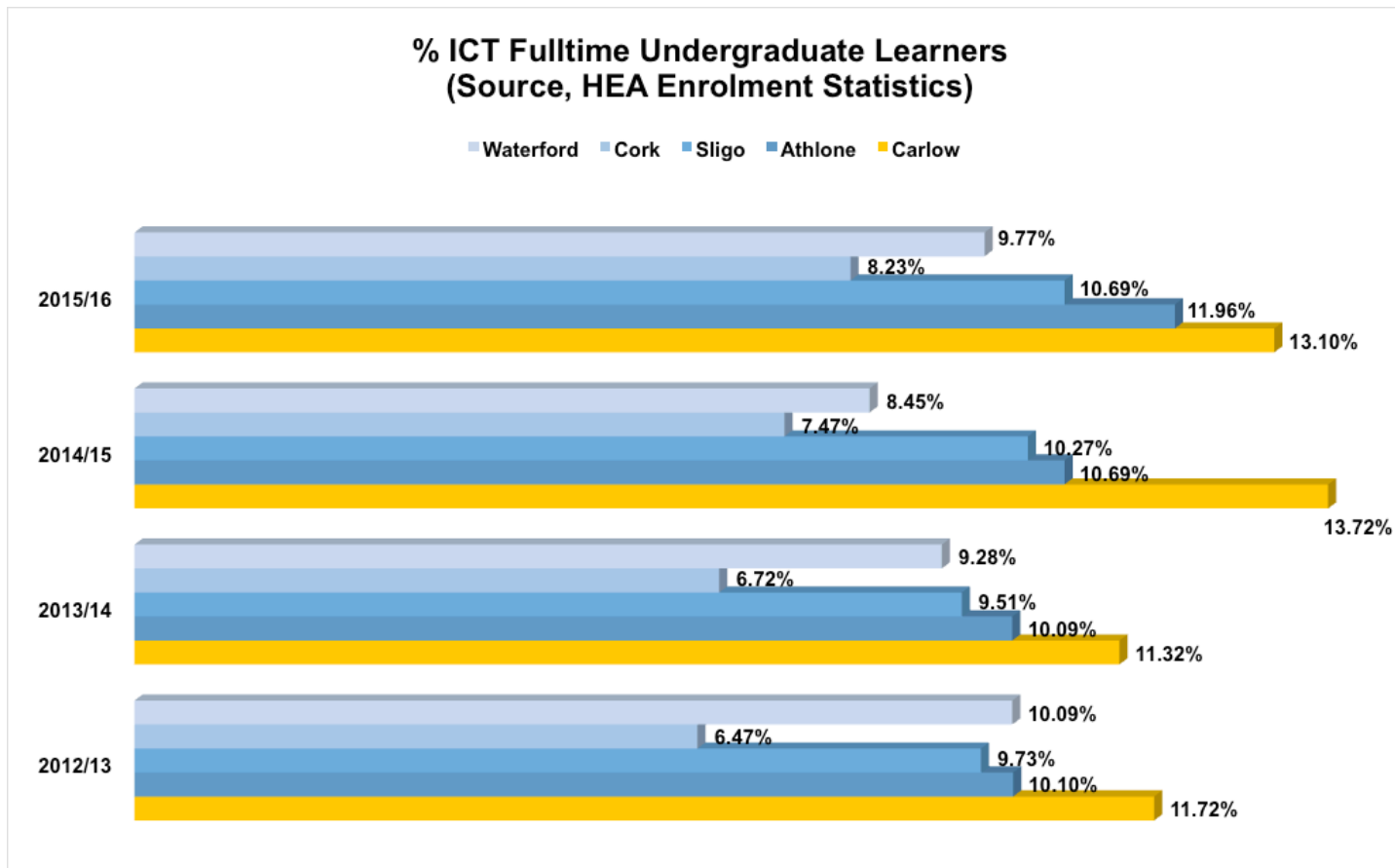


Figure 2.21 ICT full-time undergraduate learners 2012/13 to 2015/16 in five Institutes of Technology expressed as a percent of the total full-time undergraduate student population (Source, HEA Enrolment Statistics).

Table 2.2 HEA equal access data for the Technological Sector (Source, HEA RGAM Grant Allocation Workbook for IoTs 2015/16 Student Numbers for 2017 Allocation).

ACCESS NUMBERS										
Higher Education Institution	Mature Student Entrants 2014/15	Entrants Target SEGs + Travellers 2014/15	SWD 2014/15	Total 2014/15	Mature Student Entrants 2015/16	Entrants Target SEGs + Travellers 2015/16	FSD total 2015/16	Total 2015/16	FT Enrolments (WTE RGAM 2016)	% Change
Athlone IoT	227	334	360	921	177	323	374	874	3,251	-6%
Cork IoT	199	565	838	1,602	135	583	942	1,660	7,264	8%
Dublin IoT	330	881	1,800	3,011	340	936	1,728	3,004	12,501	-3%
Dun Laoghaire IoT	69	149	384	602	70	151	370	591	1,976	-1%
Dundalk IoT	197	406	220	823	193	393	292	878	3,571	4%
Galway-Mayo IoT	315	503	828	1,646	285	593	782	1,660	4,769	-4%
Blanchardstown IoT	170	293	268	731	150	316	210	676	2,447	-13%
Carlow IoT	235	428	388	1,051	242	399	444	1,085	4,002	3%
Sligo IoT	180	359	340	879	159	437	434	1,030	3,419	8%
Tallaght IoT	126	284	138	548	91	303	154	548	2,625	-2%
Tralee IoT	200	212	248	660	161	189	258	608	2,160	2%
Letterkenny IoT	193	321	262	776	170	311	308	789	2,668	6%
Limerick IoT	336	436	510	1,282	288	493	464	1,245	4,760	-4%
Waterford IoT	249	524	622	1,395	242	663	670	1,575	5,467	0%
All Institutes of Technology (Totals)	3,026	5,694	7,206	15,926	2,703	6,091	7,430	16,224	60,880	0%

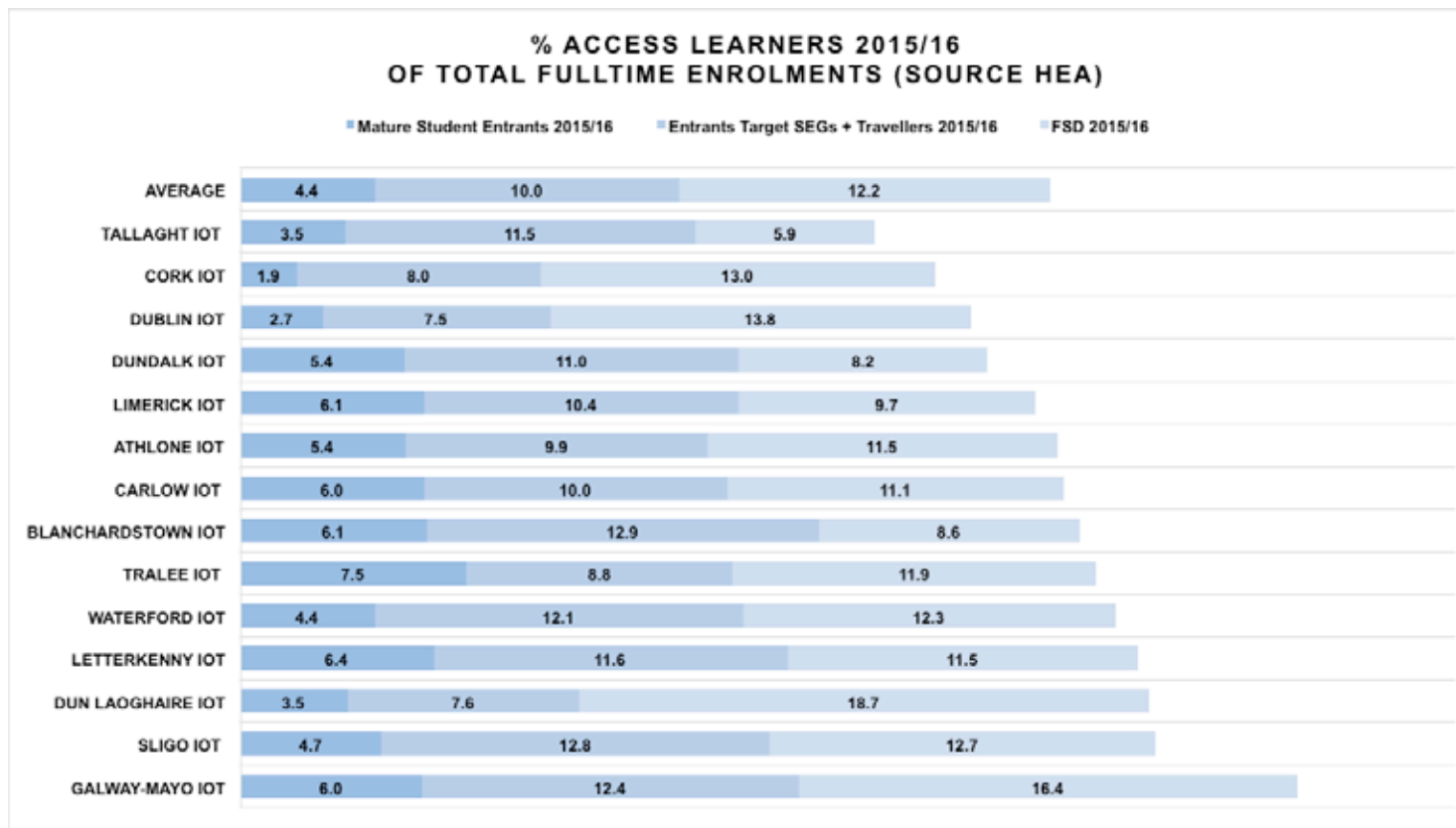


Figure 2.22 % Access Learners 2015/16 of total full-time enrolments (Source HEA) across the Technological Sector.

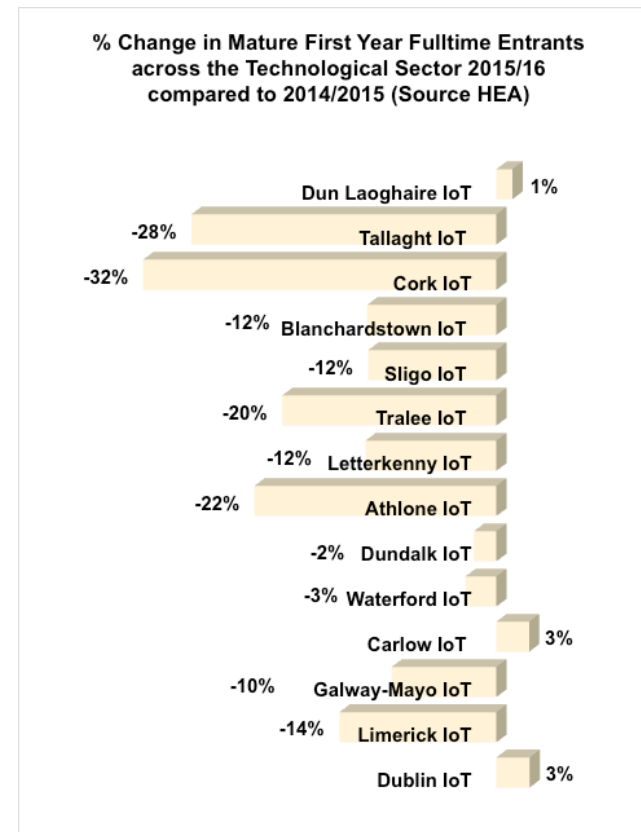
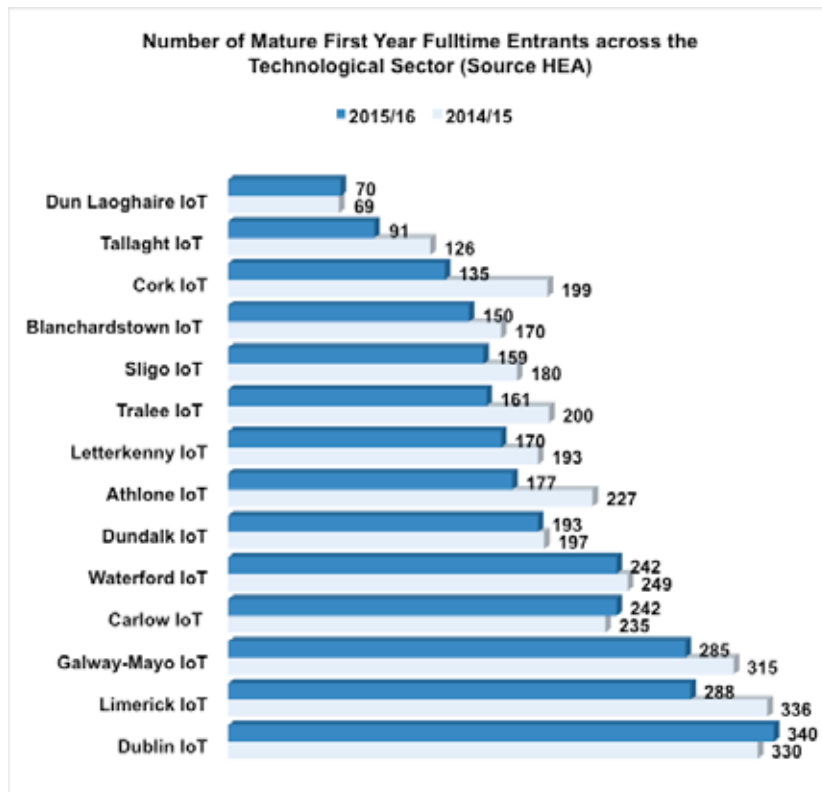


Figure 2.23 Mature First Year Full-time Entrants across the Technological Sector 2014/15 and 2015/16 (left chart) and the % change at HEI level over this time period (right chart). (Source HEA).

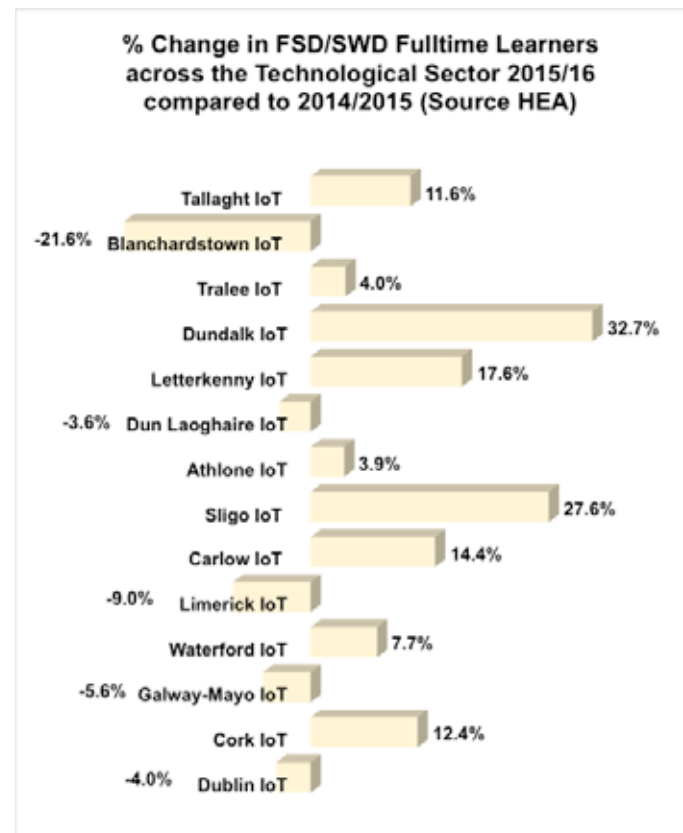
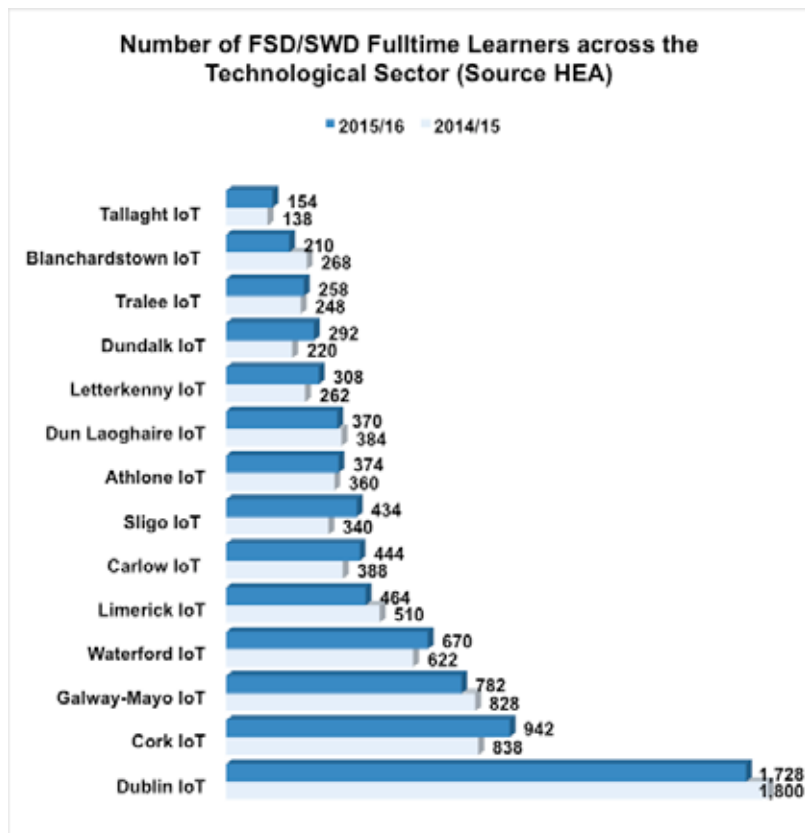


Figure 2.24 FSD/SWD Full-time Learners across the Technological Sector 2014/15 and 2015/16 (left chart) and the % change at HEI level over this time period (right chart). (Source HEA).

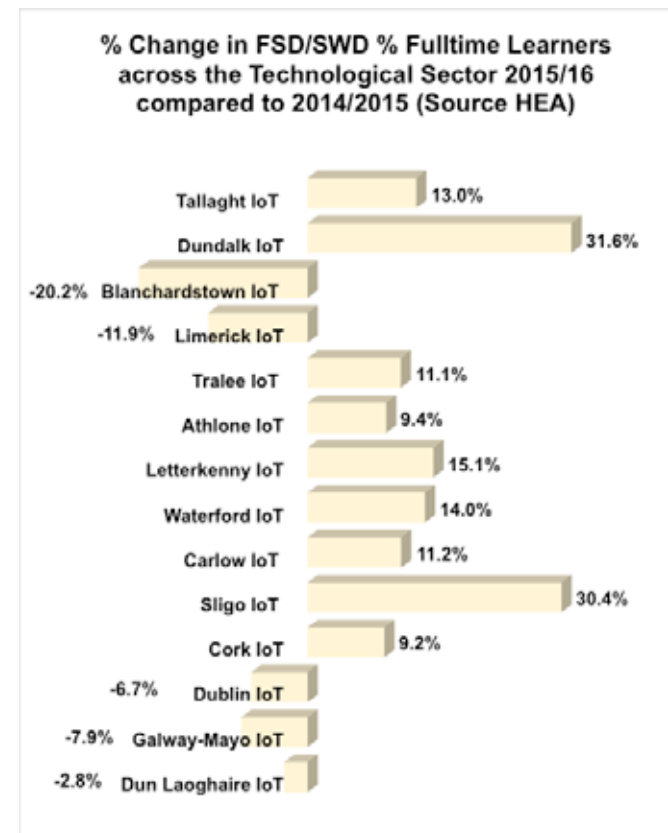
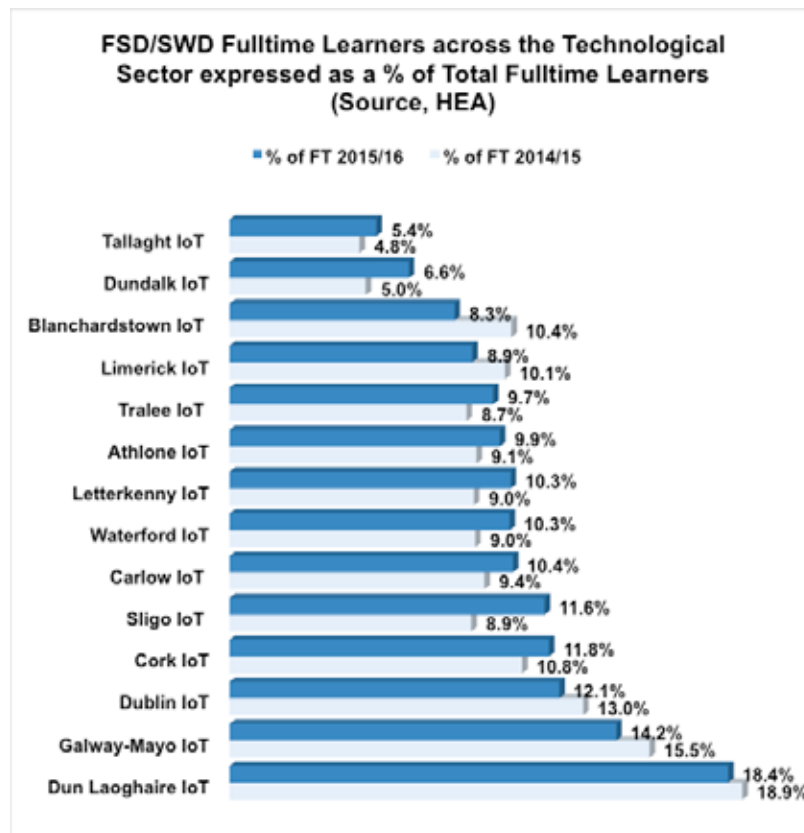


Figure 2.25 FSD/SWD Full-time Learners across the Technological Sector 2014/15 and 2015/16 expressed as a % of Total Full-time Learners (left chart) and the % change at HEI level over this time period (right chart). (Source HEA).

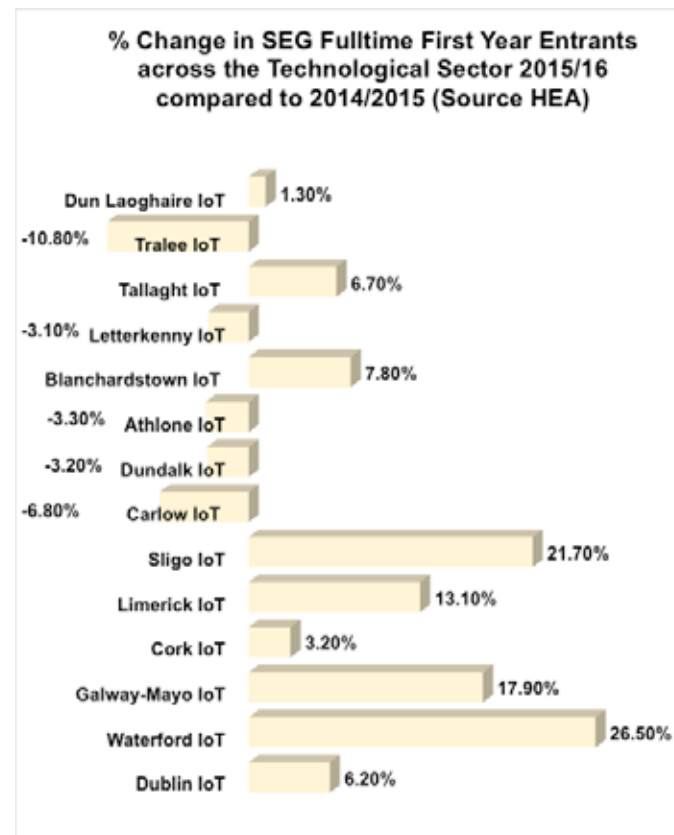
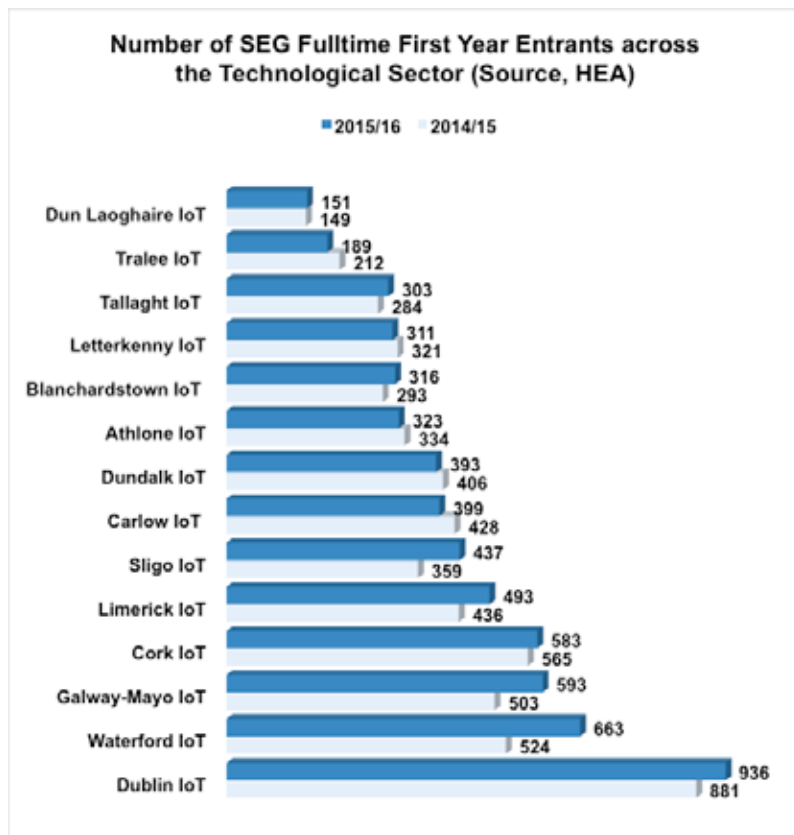


Figure 2.26 SEG First Year Full-time Entrants across the Technological Sector 2014/15 and 2015/16 (left chart) and the % change at HEI level over this time period (right chart). (Source HEA).

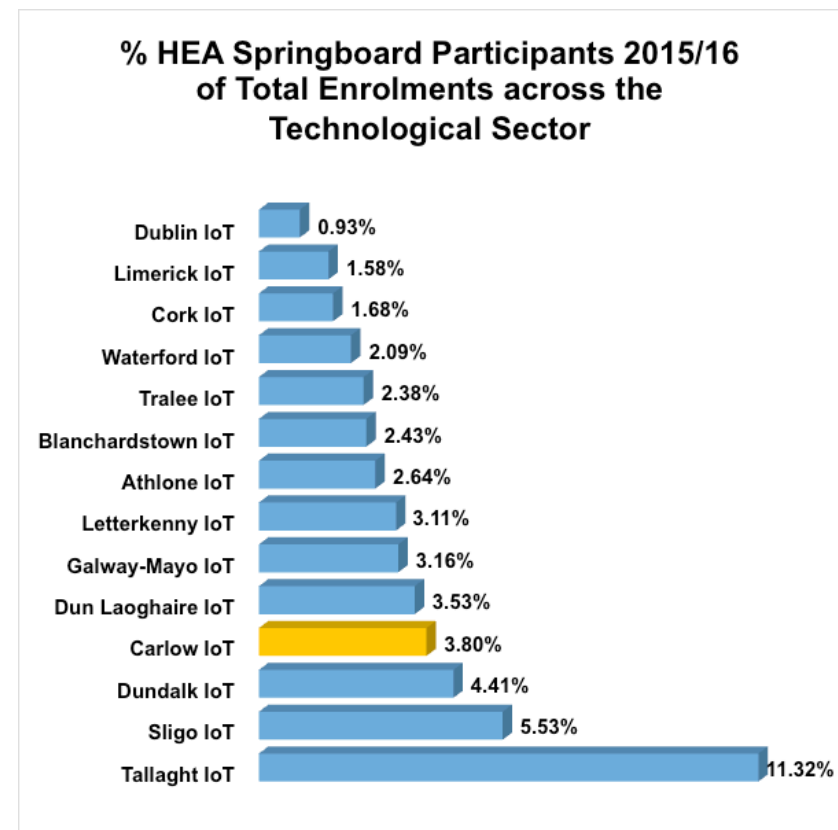
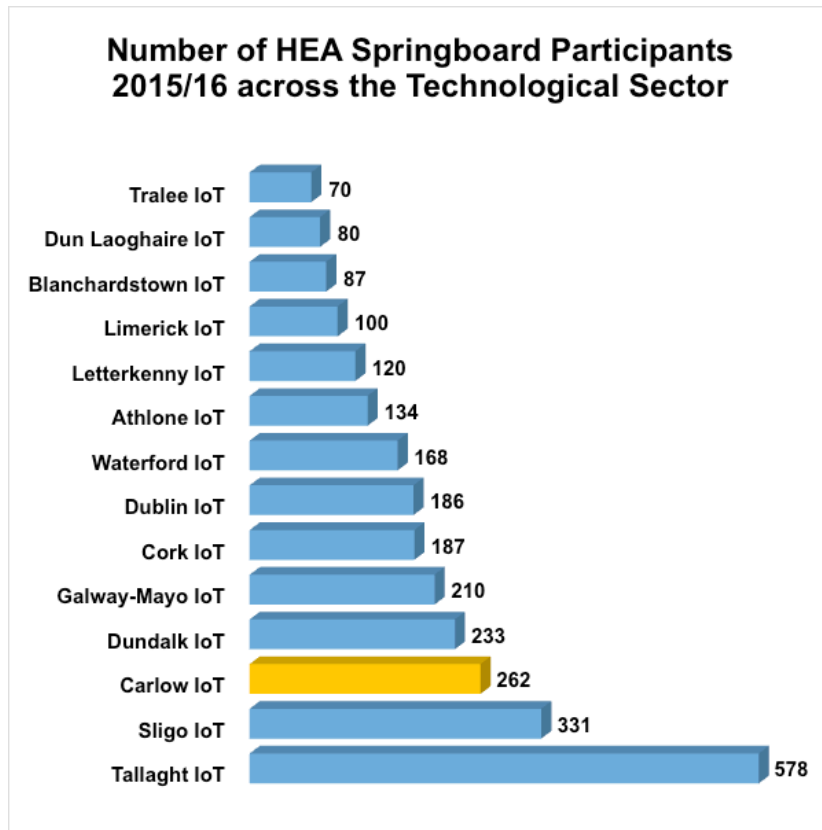


Figure 2.27 HEA Spingboard 2015/2016 and the Technological Sector. Total number (left chart) and % participants of total enrolments. (Source, HEA RGAM Grant Allocation Workbook for IoTs 2015/16 Student Numbers for 2017 Allocation).

Table 2.3 Comparative analysis of presence rates by level of award for Institute of Technology Carlow, the Institute of Technology Sector and the National Higher Education System.

PRESENCE RATES (%)						
	2010/11	2011/12	2012/13	2013/14	2014/15*	2015/16**
Institute of Technology Carlow						
Level 8	87	81	82	82	86	89
Level 7	77	74	75	75	79	80
Level 6	71	76	75	76	81	71
All Levels	79	78	79	80	83	84
All Institutes of Technology						
Level 8	83	83	83	83	84	Not Available
Level 7	72	71	72	71	73	Not Available
Level 6	69	70	74	70	74	Not Available
All Levels	76	76	77	77	79	Not Available
National Presence Rate						
Level 8	89	89	88	90	88	Not Available
Level 7	72	71	72	71	73	Not Available
Level 6	69	70	74	70	74	Not Available
All Levels	84	84	84	84	85	Not Available

*Source, HEA, A Study of Progression in Irish Higher education 2013/2014 to 2014/2015, March 2017

**Source, SRS



Bruce Campbell (b. 1927), *Winter Marking* (Oil on canvas)
On permanent loan from Contemporary Irish Arts Society.

Table 2.4 Number of CAO listed programmes, all levels, 2014-2017.

INSTITUTION	Level 8				Level 7				Level 6			
	2014	2015	2016	2017	2014	2015	2016	2017	2014	2015	2016	2017
Dublin IT	76	77	73	76	23	23	23	24	9	9	8	9
Athlone IT	18	17	19	22	16	19	20	21	18	17	15	14
IT Carlow***	30	28	25*	24**	18	18	18	19	10	9	9	9
IT Carlow WX	7	7	8	8	5	4	6	6	1	1	2	2
Cork IT	40	41	41	41	34	34	35	34	2	2	2	2
IADT	14	14	14	15	3	4	4	2				
IT Blanchardstown	14	16	16	17	14	14	14	15	3	3	3	3
IT Tallaght	16	16	16	18	13	14	14	15	7	8	8	6
Dundalk IT	23	27	28	23	19	17	17	17	3	4	4	3
Galway/Mayo IT	27	28	41	47	37	34	41	44	9	10	11	8
Letterkenny IT	19	17	19	16	27	23	22	23	11	11	11	10
Limerick IT	21	21	22	24	15	15	16	15	15	14	14	14
IT Sligo	16	20	22	25	29	28	28	29	5	9	9	10
IT Limerick Tipp Clonmel	3	3	4	4	3	3	2	2				
IT Limerick Tipp Thurles	7	6	6	6	5	4	4	4		1	2	2
IT Tralee	28	28	26	20	26	26	22	15	6	6	5	4
Waterford IT	41	38	42	38	20	20	19	19	8	8	8	8
UCC	66	62	62	58								
DCU	73	61	69	65								
RCSI	4	4	4	4								
Trinity	66	66	66	60	3	3	3	3				
UCD	53	50	49	42								
NUI Galway	56	56	57	54								
UL	72	71	71	42					1	1	1	1
Maynooth	49	43	33	34								
Maynooth (KK)	1	1	1	1								
Carlow College	3	3	3	3	2	2	2	2				

INSTITUTION	Level 8				Level 7				Level 6			
	2014	2015	2016	2017	2014	2015	2016	2017	2014	2015	2016	2017
Griffith College Cork	5	5	4	3	3	3	2	1	3	3		
All Hallows College Dublin	3											
American College Dublin	3	2	2	2								
College of Tech CCT		1	1	1	1	2	2	2	1	1	1	1
Church of Ireland CICE	1	1										
Marino Dublin	3	4	4	4								
Dorset College						2	2	2		3	3	3
Dublin Business School	20	21	20	20	9	9	9	9	6	6	6	6
Grafton College					2	2	2	2	1	1	1	1
Griffith Dublin	15	15	15	16	8	8	8	8	6	6	6	6
Independent Colleges	4	4										
IBAT College Dublin	1	1	1	1	1	1	1	1	1	1	1	1
ICD Business School Dublin	3	3	3	3								
Mater DEI Ins of Education	4											
National College of Art & Design	4	4	4	4								
National College of Ireland	8	8	8	8	1				2	2	3	3
Portobello									1	1	1	1
Respond						1	1			1		
St Patrick's College Dublin	3	4										
St Nicholas Montessori						1	1	1		1		
Mary Immaculate Limerick	5	5	6	10								
Griffith Limerick	3	3	3	2	4	4	4	3	4	4	4	2
Irish College of Hum & Science (LIM)	4	4	4	4	3	4	4	4	1	3	3	3
Irish College of Hum & Science (DUB)		1	1	1		3	3	3		2	2	2
Pontifical St Pats Maynooth	2	2	2	2								
Shannon Hotel	2	2	2	2								
St Angelas Sligo	11	11	11	9	1	1	1	1				
Galway Business School							1	1				
	947	922	928	879	345	346	351	347	134	148	143	134

Table 2.7 Number of CAO listed programmes, all levels, 2014-2017.
(Footnotes)

***Addition in 2016 - BSc (Hons) Cybercrime and IT Security.**

This programme was developed in response to the ongoing demand for computing / IT graduates highlighted in recently published ICT Action Plans and in response to IDA strategy and the Action Plans for Jobs that is promoting Ireland as a Cyber Security Hub. This has resulted in many prestigious global IT security companies having operations in Ireland. These IT security companies include, to name a few: Ciphertechs, which established its new EMEA headquarters and Security Operations Centre in Kilkenny in 2015; Intel Security, with its worldwide Centre of Excellence for Enterprise Security Solutions; FireEye, with its leading European Engineering and Security Operations Centre; MasterCard Ireland Labs, developing the next generation of secure payments; Tyco, undertaking IoT service solutions; McAfee, which expanded in 2009, 2011 and 2013; Symantec, which expanded Irish operations in 2011; Trend Micro, which has over 16 functions at the company's EMEA HQ in Ireland; Espion Group, which provides Managed Security Solutions and Information Governance; Total Defence and Mandiant, which established its Irish division in 2012. The new programme has a unique CAO code for 2016 but has been designed to be part of a common entry offering with other ICT offerings for 2018 entry as the outcome of the 2016 Programmatic Reviews and ongoing Transitions priorities are implemented in a phased manner.

****Addition in 2017 - BSc (Hons) Brewing and Distilling.**

The alcoholic drinks industry is currently undergoing a major renaissance with developments in both the brewing and distilling sectors. The industry includes everything from long established and world famous brands such as Guinness, Paddy, Baileys, Jameson and Bulmers to a number of medium sized producers such as Carlow Brewing company and Alltech, as well as an increasing number of smaller microbreweries of varying size such as Rye River Brewing

in Kildare, Dungarvan Brewing Company in Waterford, 12 acres in Carlow, and Costellos in Kilkenny and distilleries such as Walshe's Distillery in Carlow and Waterford Distillery.

The industry has been identified by the Irish government as a 'key growth sector with the potential to grow exports to over 2 billion over the next 15 years and create and support an additional 13,000 jobs, predominantly in the rural economy. Other reports support this expansion opportunity including Food Wise 2025, Premium Craft Drinks Strategy (An Bord Bia), The future of Irish Whiskey (An Bord Bia) and the South East Action Plan for Jobs (DJEI). The sector are constantly requesting more substantial training and qualification opportunities. According to the recently published Irish National Skills Strategy to 2025, 'Ireland is now in full recovery mode and within striking distance of full employment. As we approach full employment, making sure Irish workers have the skills that enterprise needs matters more than ever'. The objectives of the strategy include a focus on education and training to provide development opportunities that are relevant to the needs of both learners, society and the economy and this is particularly relevant to new BSc (Hons) in Brewing and Distilling as both the brewing and distilling industries in Ireland are currently undergoing unprecedented levels of growth but, despite this, there are currently no level 8 degree programmes available on the island of Ireland specifically targeting this sector. The strategy goes on to state that employers will participate in the development of skills to improve productivity and competitiveness and expects a national increase in life-long learning. The new BSc (Hons) in Brewing and Distilling addresses an obvious skills gap, has been developed with significant input from the sector and incorporates an extended industry based work placement element. In addition, modules from the programme will be offered as stand-alone CPD upskilling programmes for the industry. The Institute of Technology Carlow is ideally positioned both strategically,

academically and geographically to establish itself as a centre for teaching, learning, research and innovation in brewing and distilling and this development has been designed to contribute to this. The programme has been included in the CAO 2017 listing with a common entry to other science level 8 programmes.

*****Strategic Ongoing Retention of the BEng (Hons) in Civil Engineering on the CAO**

A two-year add-on Level 8 B.Eng (Hons) in Civil Engineering has been accredited by Engineers Ireland since 2008 at Institute of Technology Carlow. During the accreditation process, Engineers Ireland stated their preference to have all two- year Level 8 programmes incorporated into four-year ab initio Level 8 programmes. A four-year ab initio programme [CW478] was subsequently developed and commenced in 2013. The three-year B.Eng. in Civil Engineering runs concurrent to the ab- initio degree and graduates from the former may progress for entry into the latter. The level 8 civil engineering ab initio programme was introduced during a particularly challenging economic period for the delivery of engineering programmes aimed at the construction sector nationally. As with all construction related programmes offered by Institute of Technology Carlow and other HEIs nationally, the student intake numbers were impacted as a result of the downturn in the construction industry. This has led to substantial internal discussion concerning the future of the Level 8 programme. Following this review a decision has been made to continue to retain the offering for the 2017 CAO intake for the following reasons:

1. Data recently provided by Engineers Ireland highlights the rate of decline in graduates with level 8 awards in civil engineering in Ireland. For 2014, 2015, 2016 and 2017 the total number of graduates nationally were / will be 605, 153, 70 and 38, respectively. Of the 38 graduates anticipated nationally for 2017, Institute of Technology Carlow will account for 21% of these graduates. To meet the future needs of industry, the sharp decline in civil engineering graduate numbers will need to be addressed. Post the construction downturn, those institutions maintaining

level 8 ab initio programme offers into the future will be best positioned to respond quickly to the inevitable renewed interest level in the upturn. This is a view strongly supported by Engineers Ireland.

2. Notwithstanding the national downturn in the construction sector, the Built Environment Department provision at Institute of Technology Carlow enjoys a strong reputation within the industry sector. Given the brand identity and signs of an upturn in the sector, an increase in student numbers can be reasonably expected in the medium term.
3. The maintenance of this programme supports the longer term strategic ambitions of the Institute as it develops towards Technological University designation. The ab initio level 8 civil engineering programme placement within the CAO system creates the potential for attracting higher performing students academically (in a similar manner to the level 8 architectural technology and construction programme streams). Such a trend has also been noted by Department of Aerospace, Mechanical and Electronic Engineering following the introduction of the level 8 stage to the Aerospace Engineering and TV & Media Production programmes.
4. In assessing the future of the programme and the future needs of employers in the region, feedback was sought from Engineers Ireland and a number of employers in the region. There is a shared concern within the construction industry that there will be a significant shortage of qualified Civil Engineers in the coming years and there is strong industry support for the Level 8 offering at Institute of Technology Carlow.
5. Additional strategies have been put in place to increase student intake numbers to the level 8 Civil Engineering programmes working with Engineers Ireland.

Table 2.5 Commendations arising from the **two-stage** Quinquennial Review conducted over September 2014 -June 2016 across all Faculties, Centres and Campuses and Professional Support Services 2016. Further detail on the outcomes including the reports of the external expert panels can be accessed at <http://www.itcarlow.ie/resources/quality/quality-publications-outcomes.htm>

ENGINEERING
<i>The panel commend the institute policy on the two stage process of a strategic review in advance of a programmatic review and on the entire institute strategic review process.</i>
<i>The commitment and enthusiasm of the management and staff in the School of Engineering and their dedication to, and support for, their learners is laudable.</i>
<i>The strategic investment in infrastructure, personnel and policy developments to support research in the Institute is admirable.</i>
<i>The School's research plan focusing on the existing staff skill set and supported by recruitment strategy to support this is also commended.</i>
<i>The School of Engineering is increasing its activity on many fronts and presented a very ambitious strategic plan.</i>
<i>The commitment of the School towards achieving external validation and accreditation for the Schools programmes, new niche programme development, flexible access and progression opportunities is impressive.</i>
<i>The School is conscious of the importance of the employer voice in programme development, delivery and monitoring.</i>
<i>The panel were impressed by the professionalism and dedication of the staff to the delivery of the programme and the welfare of the students.</i>
<i>The Institute is to be commended on the high quality and articulateness of the students and their enthusiasm for the Institute and the accessibility of teaching staff and their supportiveness.</i>
<i>Programme is excellent and exemplary and a benchmark for how it should be done.</i>
<i>The panel were very impressed with the quality of finish and breadth of the final year projects, many of which were quite challenging and demonstrated a high degree of novelty.</i>
<i>All laboratories and facilities that support the delivery of the programme are of a high standard and the efficient operation and maintenance of these facilities is to be commended.</i>

BUSINESS AND HUMANITIES

The strategic review document presented a comprehensive, progressive and realistic strategy for the school and details key targets and performance indicators to 2020.

Learners were highly complementary of their lecturers in terms of access and culture of openness, of the institute facilities available, student supports and postgraduate opportunities and industry engagement.

Facilities for the delivery of programmes including teaching space, library, IT and other specialised venues are of a very high standard.

IT Carlow staff development and other support structures are impressive and accessible to all staff.

A suite of new 'industry facing' programmes developed since the 2011 review were highlighted and the ongoing development of progression routes, links to LLL and other campuses and collaborative provision are exceptional.

An increase in the demand for progression opportunities and in the diversity and needs of the learner profile has taken place, and the efforts made by the school in terms of delivery, programme development, the first year experience and transitioning to third level, targeted learner support and pastoral care is evident and laudable.

The excellent student-centred environment and support given to learners undertaking Business Programmes in the faculty.

The programme development activity particularly for those undertaking programmes on a part-time basis.

Progression through the programme and focus on continuous assessment encouraging independent learning through many programmes is impressive.

Mutually beneficial increase in the development of formal and voluntary links with schools and other groups in all sport disciplines since last PR is welcome.

The PRG was impressed with the provision and presentation of documentation. In particular, the level of detail provided with respect to the programmatic review was uniformly excellent and is to be commended.

The PRG found that the programmes were appropriate and well aligned to the professional bodies. In particular the PRG commends the level of co-ordination with professional bodies for exemptions for the students.

The PRG highly commends the high proportion of full time staff available to student, student / staff ratios, the facilities and resources available to students (in particular, the library opening hours and staffing).

The PRG commends the facilitation of support for staff undertaking PhD programmes.

Throughout the visit, the physical facilities and equipment, staff engagement and enthusiasm and documentation provided were particularly impressive.

Certificate in preparation for higher education: This programme 'has its finger on the pulse' in terms of what learners need and is very impressive. Bringing student cohorts on-campus and the focus on how the cultural background of learners impacts on learning is commendable.

Clear, transparent and rigorous communication pathways for learners is very well designed. Excellent feedback has been received from industry.

SCIENCE

The panel thank the staff of the School of Science for the quality of the documentation and the work that went in to both the analysis and the preparation of the review.

The panel also thank the staff, learners and management for their evident engagement with the process and the panel.

The Panel agreed that the School of Science at IT Carlow has grown and made considerable advances over the past 5 years.

The students in particular were key advocates and exemplars of what the School is doing.

The passion of the lecturing staff for the teaching, learning and research was evident and reinforced by the students.

The Panel praises the School of Science on their communication mechanisms between staff and learners and acknowledges the importance placed on the voice of the student.

The panel compliment the School on their international linkages and in encouraging students to undertake international placements.

The panel commend the high standard of teaching, learning, learner support, sports and research facilities in the Institute.

Student centred ethos was very evident.

Institute support for staff CPD is impressive.

Learner feedback from both QA and ISSE surveys as well as learner voice via programme board input etc. – highlight how this information is used in informing both the programmatic review process and annual programme review processes.

Ongoing institute supports for staff undertaking doctoral studies and other CPD including financial support, conference support and a menu of support options available to managers as well as schemes for staff to apply for time off to engage in specific grant applications is commendable.

Range of final year project styles from research through to applied industry challenges provides opportunity for diverse final year specialisation. Ongoing assessment, presentations and monitoring of final year projects is commendable

Panel note and commend the planned structured PhD/Masters by research programme but suggest consideration be given to block delivery of the structured element.

The panel commend the rollout out of the Ethics in Research and Integrity policy and procedures across all levels and encourage the ongoing efforts in this domain in line with national guidelines.

Lifelong Learning and Extended Campus

The panel ... note the strong culture of self-reflective and scholarly practice evident in the Life Long Learning (LLL) Centre and the Extended Campus.

The proactive learner centred approach was clearly evident and described glowingly by both ...staff and learners and this is to be commended.

The enthusiasm of the learners and their appreciation for the support that they receive from LLL and extended campus staff was exceptional.

The inclusion of real-world, current workplace experience by staff, many of whom are in employment outside the institute, as a powerful teaching tool, was evident and is extremely valuable. Staff spoke of the progressive atmosphere, the range of programmes and of IT Carlow's 'genuine understanding and appreciation of the adult learner'.

The panel commend and congratulate the LLL centre and the extended campus on their innovation, collaborative provision success, and growth rates and commend both the regional focus of provision and the flexibility and breadth of programmes currently being provided which are clearly benefiting learners and the communities served.

The impact and value of the LLL centre and extended campus on the lives of both learners and staff as well as the wider community, economy, society and region cannot be understated and represents an exponential return on the time and effort which has been and continues to be invested.

WEXFORD CAMPUS

The panel commend the collegiate nature of the campus and the positive interaction between learners and staff evident in this community of learning and their achievements over 20 years.

Staff were enthusiastic and supportive and sincerely engaged in the pursuit of academic excellence.

The panel further commend team on the quality of documentation and their engagement with the panel during the visit.

The panel congratulate the campus on the enthusiastic and positive learner engagement as evident in the feedback during the session with the learners Entrepreneurship was evident across programmes which are applied and relevant as was genuine engagement with local industry and arts and community organisations.

Links to FE providers are being developed and this is to be applauded.

Work placement and community based learning are particularly well established and highly regarded by all stakeholders.

We were particularly impressed with the final year shows – some outstanding work in both design and fine art. This is testament to the good teaching and well used resources of these programs. The overall quality of work is exceptional. We also following detailed discussions with the staff recognise a clear sense of cohesion and development within programs.

The panel would like to commend the twelve week work placement as very strong. It is clear that the students have benefited from this. The panel commends the induction programme. The strong approach to enquiry-based learning is also commended by the panel.

The clear student-centred approach was evident and is to be highly commended.

The panel commend the provision of lifelong learning opportunities across all levels and the flexible pathways provided to learners.

The panel compliment the innovative excellent MBA in Professional Arts Management programme and encourage the use of minor awards from this programme and its delivery via Blended/online learning.

There is a strong evidence base of the good practice e.g. case studies and projects; and ongoing work of staff and the quality underpinning this and the panel feel this should be communicated more widely.

RESEARCH POLICY REVIEW 2015

The panel's overall conclusion was that the Institute had made excellent progress toward achieving its ambitious targets for research

The panel commended the Institute on the following, which the panel highlighted as examples of some of the innovative and creative practice the Institute had adopted:

- *The central support, financial provision and professional advice, available to fund and support research activities*
- *The multiple means used to communicate and roll out policy developments*
- *The genuine and infectious enthusiasm of research staff in the Institute and the pride they take in being research active*
- *Success in increasing the number of research active staff*
- *The CORE Leader release scheme*
- *Evidence of the CORE research centres leading to the development of taught Masters Degree programmes*
- *The comprehensive research student induction programme and the ongoing support available to postgraduate students*
- *The strength and sense of collegiality amongst the postgraduate student community.*
- *The investment in research infrastructure, notably the Dargan Centre.*

LIBRARY INFORMATION SERVICES (LIS 2016)

The library information service at the Institute of Technology in Carlow has undertaken a detailed self-study process and prepared, based on the analysis of data gathered through staff, learner, researcher and other stakeholder engagement across the organisation including its campuses in Carlow, Wexford and Wicklow and Lifelong Learning centre, a detailed and well researched self-evaluation report.

The panel considers this to be an impressive document which celebrates the LIS achievements, and applauds the work which has been undertaken in the self-review process. The process to gather the metrics for the review was impressive and the panel welcome plans for an international benchmarking process for future reviews to further enhance the data as well as plans for focus groups and other qualitative tools

The panel commends the evident innovative, positive and proactive culture of LIS as well as its learner and staff centered focus, civic engagement activities, and efforts to improve communication of its services and expand its roles in teaching and learning, support for research and other stakeholders. Of particular note here is the innovative approach from LIS Carlow to support the needs of collaborative partners. A good example here is the NFETL transformation through collaboration project (Digital champions).

The panel were particularly impressed with the professionalism, enthusiasm and support evident amongst LIS staff. The panel also acknowledge the positive commentary from stakeholders particularly in relation to the service provided by LIS staff.

The open engagement with Institute management, all LIS staff and the LIS stakeholders during the visit was extremely positive and helpful. In particular, the panel commend the LIS staff for their positive and open discussion, and engagement with the process, their obvious proactive, positive and flexible work ethic, commitment to learners and peers. The panel were particularly appreciative of the comprehensive presentation by the Institute librarian and her positive and proactive approach to the self-evaluation process

In the period of economic decline covered by the review process, sustaining the financial support for the LIS is commendable.

COMPUTING SERVICES (CS 2016)

The panel commend the quality of the review process, the analysis of the data and consideration of the feedback received, the quality of the documentation provided, and, in particular, the overwhelmingly positive feedback from all stakeholders in relation to the service provided by CS.

The helpfulness, dedication and professionalism of CS staff and management is highly evident, was universally praised and is commended.

IT Carlow management, CS personnel and stakeholders groups engaged openly and positively with the panel.

The centralised organisational structure of CS is a significant advantage and should be maintained.

CS appears to be operating at capacity in terms of existing structures, resources, processes, systems, personnel and availability of specific CS expertise across all campuses.

A positive, open and innovative team culture was evident amongst CS personnel. The quality of ICT physical facilities and services available to all staff and learners, and the support from the Institute for the maintenance of these facilities and services is commended. The panel compliment and endorse the CS strategic plan and manager's perspective as presented in the documentation.



INSTITUTE of
TECHNOLOGY
CARLOW

Institiúid Teicneolaíochta Cheatharlach



Mark Redden (b. 1979), *Eden* (Oil on canvas, 2009)

From the Frank X. Buckley and Michael P. Burns Collection at the Institute of Technology Carlow.

APPENDIX 3

IRISH SURVEY OF STUDENT ENGAGEMENT (ISSE) 2014-2016 - INSTITUTE ANALYSIS OF ISSE 2016 AND 2015 AND BENCHMARKING WITH THE IRISH AND UK HIGHER EDUCATION SYSTEM

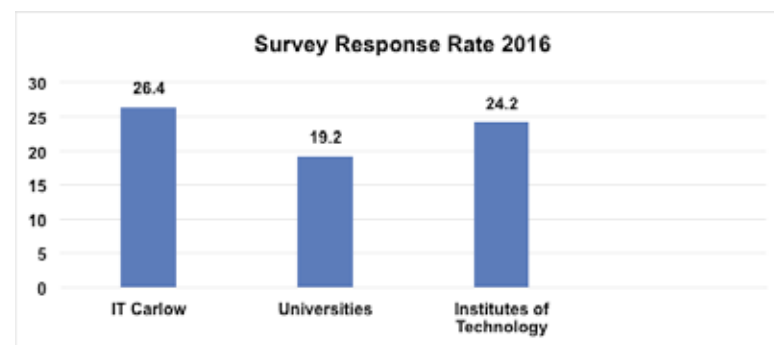
Irish Survey of Student Engagement (ISSE) Survey 2016

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The Response Rate

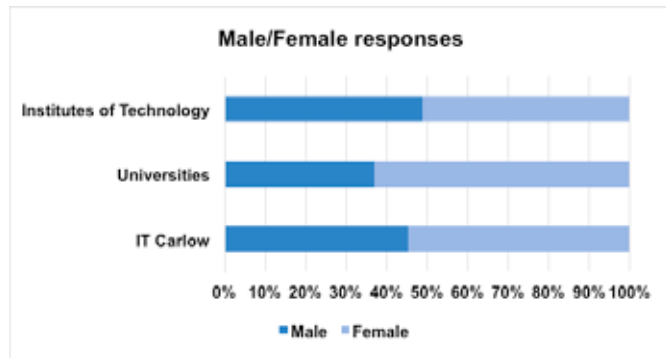
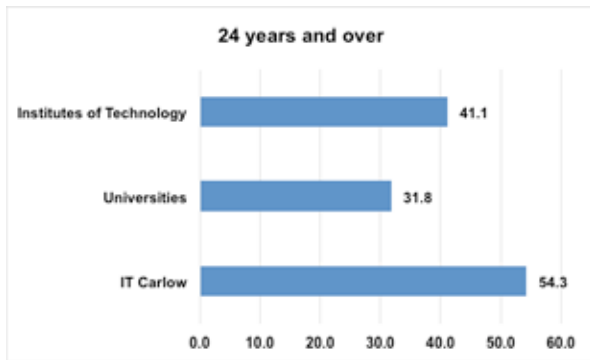
Over 26% of students from the Institute participated in the survey and while this was better than the average for the university and institute of technology sectors overall, it marks a significant drop in participation rates achieved by the Institute in 2015 when over 36% of students participated. It is likely that with some concerted promotion and marketing of this annual survey the Institute will be able to increase the response rate significantly in future years.



Irish Survey of Student Engagement (ISSE) Survey 2016

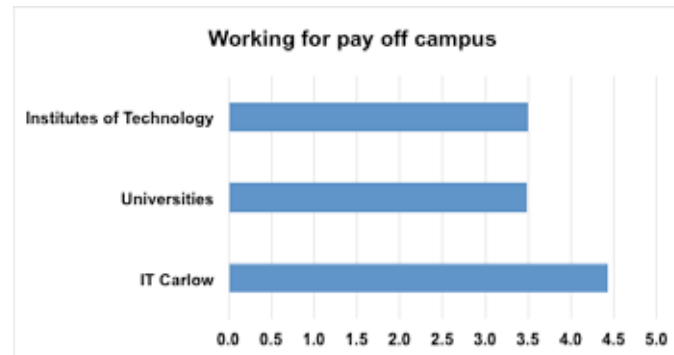
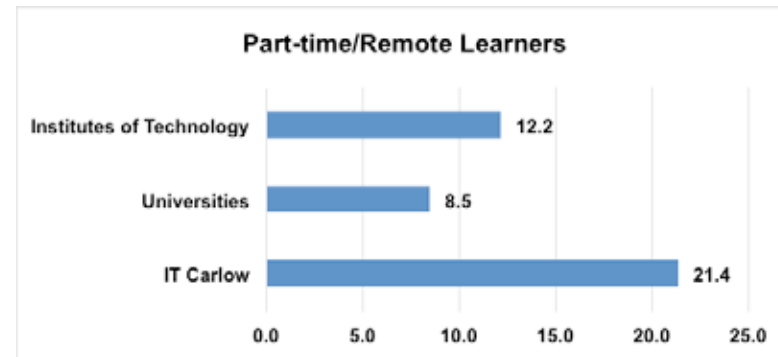
Respondent Characteristics

Over 54% of respondents were mature students- a significantly higher proportion than respondents from the universities (32%) or the institute of technology sector (41%).

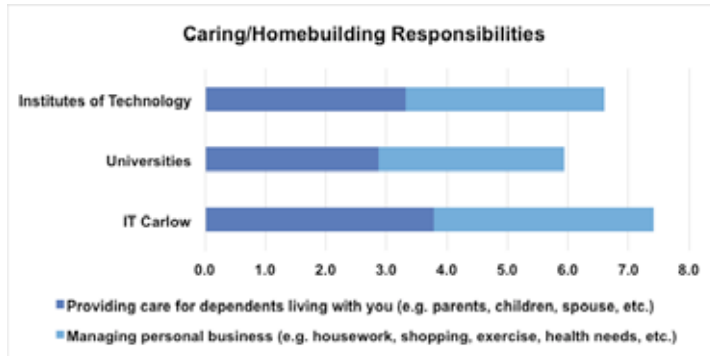


The Institute had a higher proportion of part-time / remote learners (21%) compared to universities (8%) and institutes of technology (12%).

The higher proportion of part time and remote learners reflects the Institute’s relatively high proportion of mature students. Consequently, Institute learners are more likely to work off campus and have home caring responsibilities.

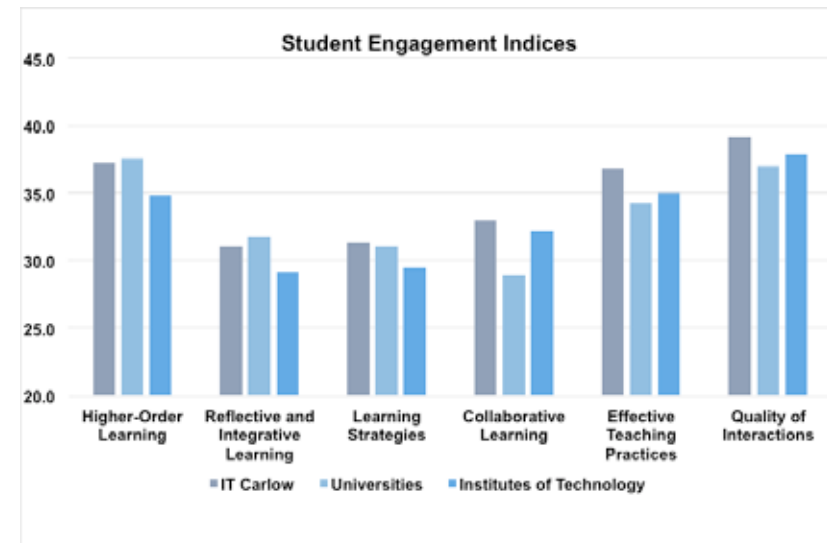


Irish Survey of Student Engagement (ISSE) Survey 2016



Overall Analysis of Student Engagement

The overall analysis of student engagement shows a relatively high satisfaction level among Institute learners with particular strengths showing towards the quality of staff/student interactions and the effectiveness of the Institute's teaching practices. It would appear that the Institute's emphasis on providing academic staff with opportunities to enhance and develop their teaching skills and methodologies is having a positive impact on the quality of the student learning experience.

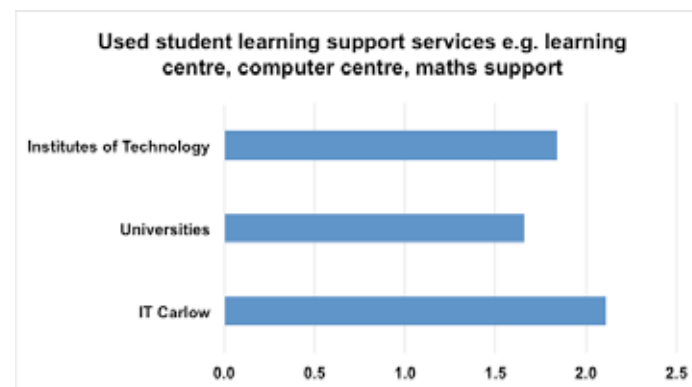
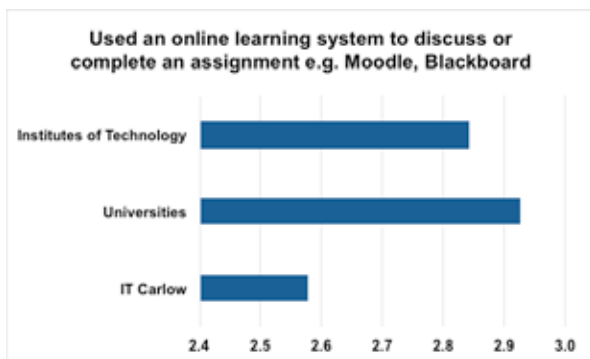
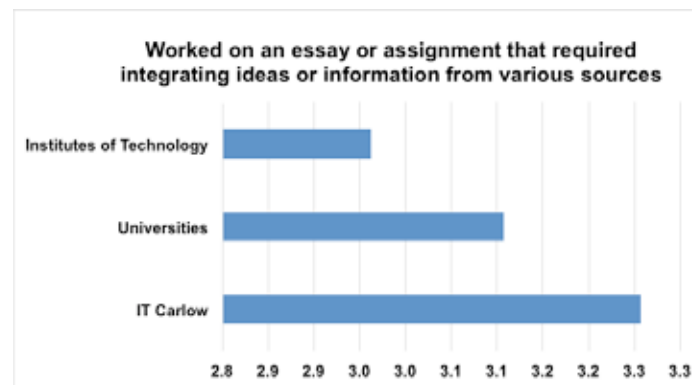
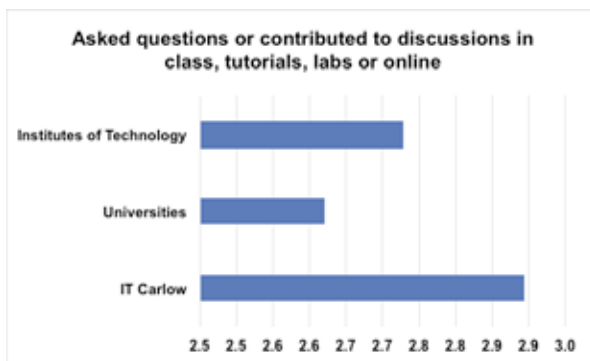


Irish Survey of Student Engagement (ISSE) Survey 2016

Analysis of Specific Questions

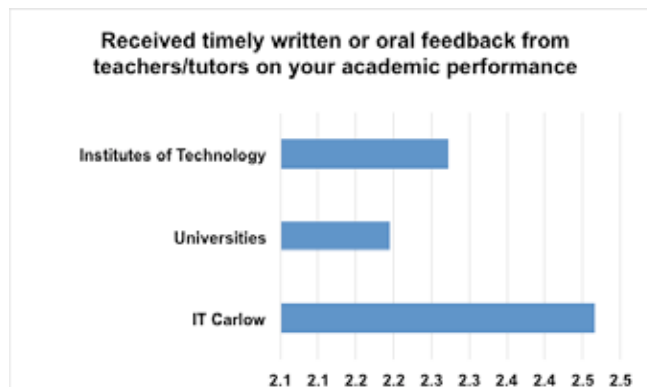
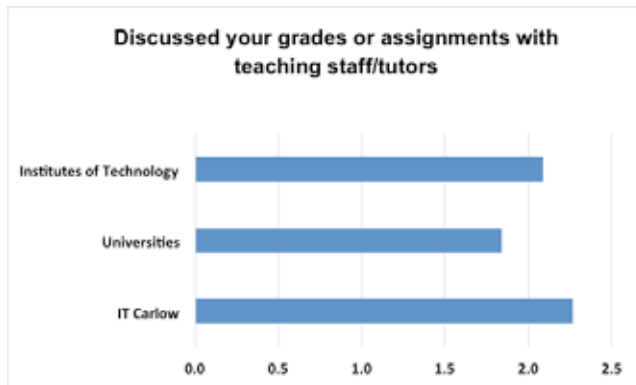
In looking at specific questions it appears the Institute is relatively good in supporting its learners in the classroom/ laboratory setting but less so at using the online learning system.

It also appears that Institute learners are more likely to be encouraged to integrate ideas from different sources and are more likely to get support from learning support services than is the case elsewhere.

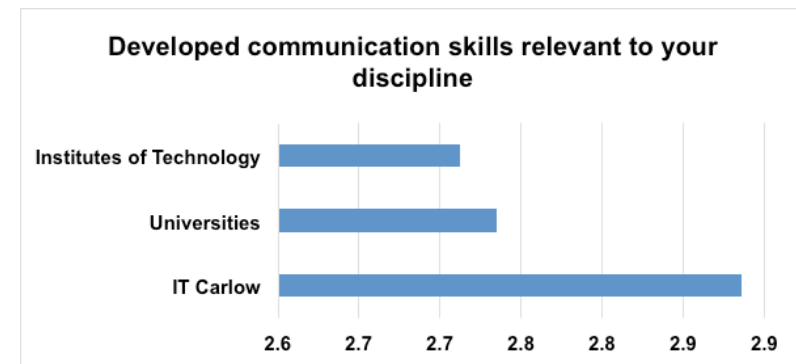


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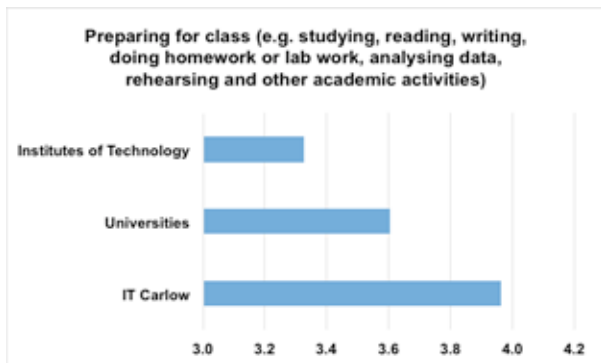
It appears the Institute of Technology Carlow learner is more likely to discuss their grades or assignments with teaching staff and to receive timely feedback on their academic progress than is the case in Irish universities and institutes (later in this document the international comparisons give slightly different perspective).



This survey points to the Institute lecturer setting high expectations for the learner and the learner has developed their communication skills, relevant to their subject area. It also appears that they feel they work harder in preparing for classes etc. compared to the universities and other institutes.



Irish Survey of Student Engagement (ISSE) Survey 2016

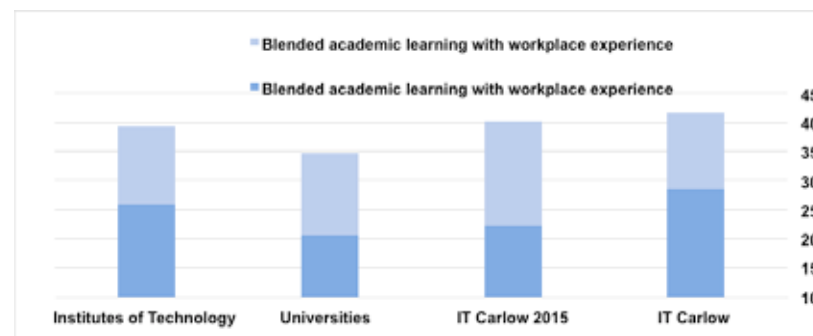


Finally, it appears that Institute learners are more likely to explore how they are likely to apply their learning in the workplace.

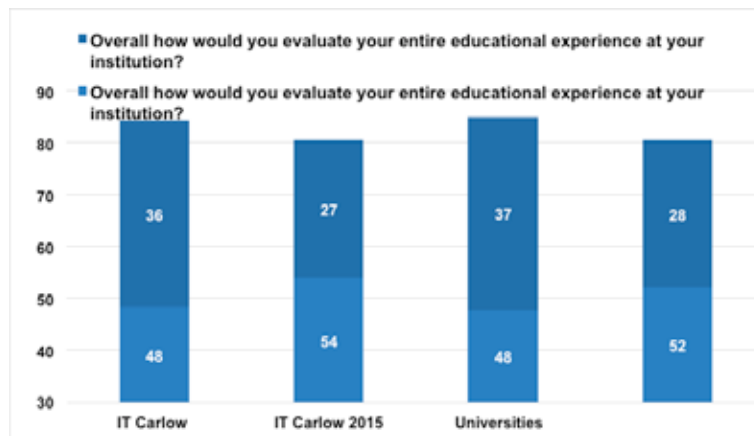
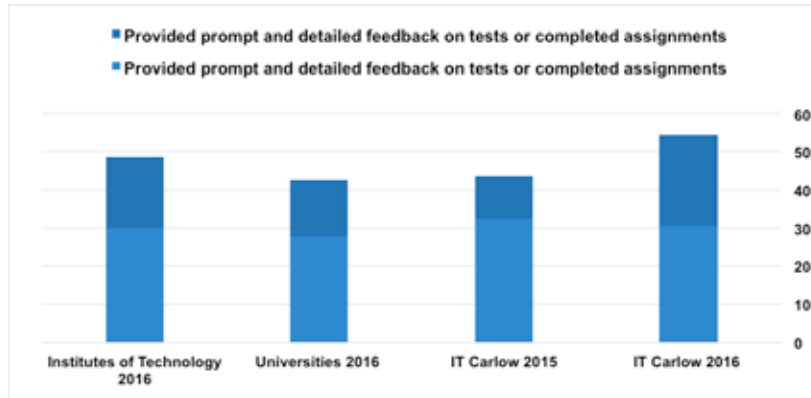


Comparisons with 2015 Responses

In looking at the responses to the survey conducted in 2015, compared with the 2016 responses, it is evident that the Institute continues to build the strength and depth of its engagement with students. The following charts show progress in a number of areas reflecting continued commitment to encouraging learners to combine ideas from different subject areas; the blending of academic with work experience and in providing prompt and detailed feedback. It is particularly gratifying to note that the survey found that 84% of Institute respondents evaluated their overall educational experience as being good or excellent, a rise of 3% from 2015 (on closer examination those who judged their experience to be excellent went from 27% in 2015 to 36% in 2016).



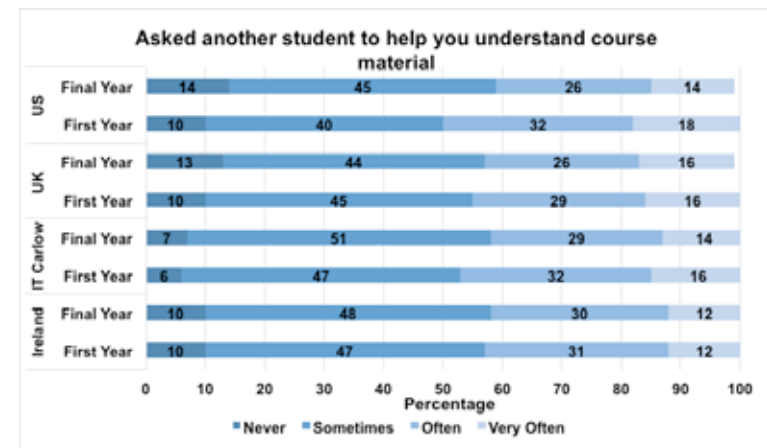
Irish Survey of Student Engagement (ISSE) Survey 2016



International Context

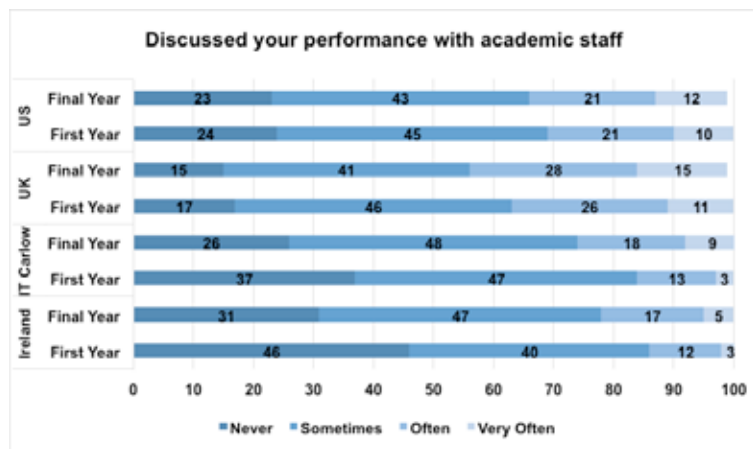
Taking the data provided in Chapter 6 of the ISSE survey of 2016 it is possible to measure the Institute performance on these metrics with the overall Irish, UK and US data.

With reference the responses to "Asked another student to help you understand course material" 43% of first year and 48% of final year learners in the Institute of Technology Carlow stated they often, or very often, sought this peer support. This compares favourably with the US where the respective figures were 40% for first year and 50% for final year, and the UK where the respective totals were 42% and 45%.



Irish Survey of Student Engagement (ISSE) Survey 2016

The second area captured for comparison was responses to "Discussed your performance with academic staff". 16% of first year and 27% of final year Institute of Technology Carlow respondents stated that they often, or very often had these discussions; this compares favourably with the Irish figures overall (15% first year, 22% final year). The international comparisons are less favourable however, showing the respective figures for the US (31% first year and 33% final year) and the UK (37% first year and 43% final year).



Conclusions and areas for further consideration

This survey provides a very useful overview and its continued value relies on a large number of students completing the survey. While in 2016 the Institute had more learners completing the survey than most universities and institutes of technology, it is disappointing that there was a drop on participation rates in 2016 to that in 2015. There clearly is merit in greater marketing and promotion of the survey in the future and the Institute should aim for a participation rate similar to exemplar institutions who manage to achieve a circa 50% response rate.

There is a considerable amount in this survey to show that the Institute as a positive, stimulating and challenging learning environment for its learners. The quality of the Institute's teaching and staff student interactions are generally strong when compared with Irish universities and institutes of technology. When compared to the US and UK institutions however it appears that these comparators place more emphasis on discussing individual performance than is the case in the Irish environment. While these comparators warrant closer inspection, it could well be that case that the international comparators point to a more systematic approach to giving individual feedback to learners and this is something worth considering further by the Institute.

Finally, while generally the Institute's responses compare favourably with the university and institute of technology sector, respondents to this survey were less likely to use online learning tools (Blackboard) and this is an area worth looking at in more detail. With closer inspection it seems likely that specific areas in the Institute are less likely to use, or encourage students to use, online learning tools, rather than these results reflecting an Institute wide issue.

Irish Survey of Student Engagement (ISSE) Survey 2015

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Introduction

The Irish Survey of Student Engagement (ISSE) 2015 offers an insight into the experiences of students in Irish higher education and more specifically their experiences in Institute of Technology Carlow. This is a student engagement survey as distinct from a satisfaction survey. Student engagement is defined as:

*“The investment of time, effort and other relevant resources by both students and their institutions intended to optimise the student experience and enhance the learning outcomes and development of students, and the performance and reputation of the institution”.
(V. Trowler and P. Trowler, Student engagement toolkit for leaders (Leadership Foundation for Higher Education and Higher Education Research and Evaluation, 2011).”*

The survey points to a fairly high level of consistency in responses across the HEI sector with differences between institutions, when they arise, being relatively small. Notwithstanding this, it is evident there are differing characteristics in the nature of the student engagement, some of which reflect popular perceptions of the differences between the Technological and University sectors, but also some difference between how Institute of Technology Carlow is perceived when compared with the Technological and University sectors overall.

Institute of Technology Carlow appears throughout, with some exceptions, to score consistently higher than the University sector and the Technological sector results. It is this consistency in response, rather than

Irish Survey of Student Engagement (ISSE) Survey 2015

focusing only on a few metrics, which provides the most comprehensive indication of the Institute of Technology Carlow’s standing in the opinion of our students.

While this 2015 report fails to draw on any international comparators, in this analysis some attempt has been made to identify comparators with UK HEIs, drawing on information from a UK Engagement Survey 2014, produced by The Higher Education Academy.

Response rates and Institute of Technology Carlow respondents characteristics

The report describes the Institute of Technology Carlow as having the 2nd highest percentage response rate of all universities and IoTs at 36.6% (1206 students) and Table 3.1 gives a breakdown by year/cohort of study.

Table 3.1 . Institute of Technology Carlow Respondents to ISSE 2015.

INSTITUTE OF TECHNOLOGY CARLOW 2015				
	First Year	Final Year	PG Taught	All Students
Population				
Survey Population	1,439	1,487	365	3,291
Respondents	513	587	106	1,206
Response Rate	35.6	39.5	29.0	36.6

Over 50% of Institute of Technology Carlow respondents were 24 years and older (Figure 3.1); in the case of the Technological and University sectors, the percentage of respondents over 24 years was 44.3% and 34.9% respectively. There were slightly more female respondents than male in Institute of Technology Carlow (Figure 3.2). Just over 4 % were non-Irish (Figure 3.3) and almost 20% of Institute of Technology Carlow respondents were part - time compared (Figure 3.4) to 12% for all IoTs and 11% for Universities. Figure 3.5 shows that Institute of Technology Carlow students are more likely to have some paid employment, to have caring responsibilities and to be managing personal business (e.g. household budgets etc.).

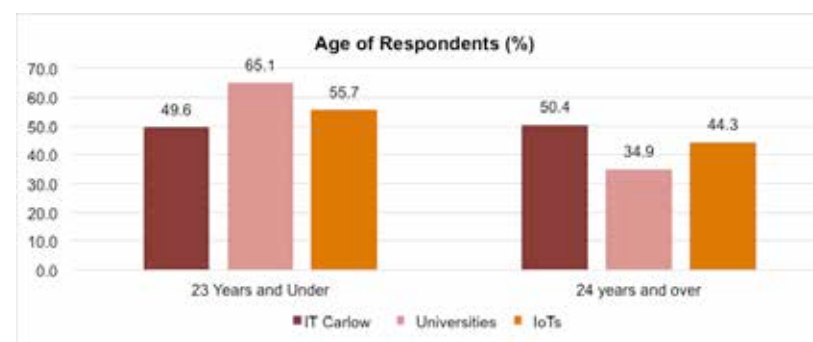


Figure 3.1 Age of Respondents to ISSE 2015.

Irish Survey of Student Engagement (ISSE) Survey 2015

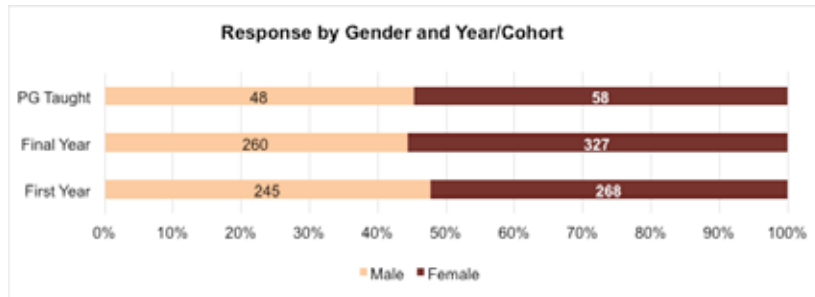


Figure 3.2 Institute of Technology Carlow response to ISSE 2015 by Gender and Year / Cohort.

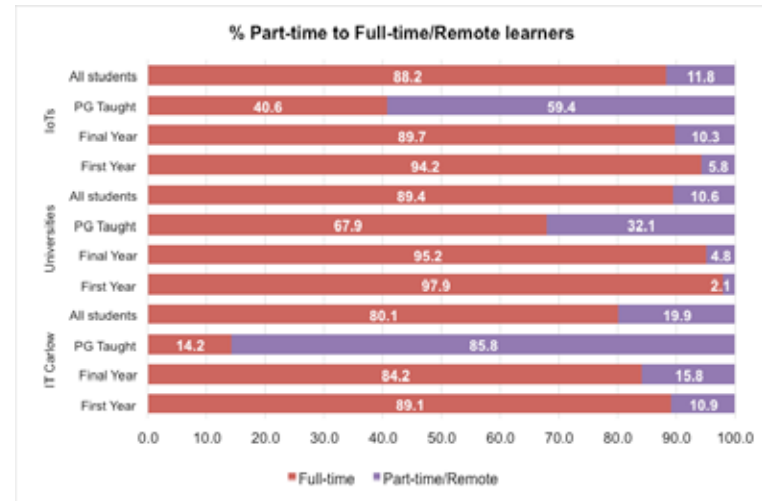


Figure 3.4 % Part-time to Full-time / Remote Learners.

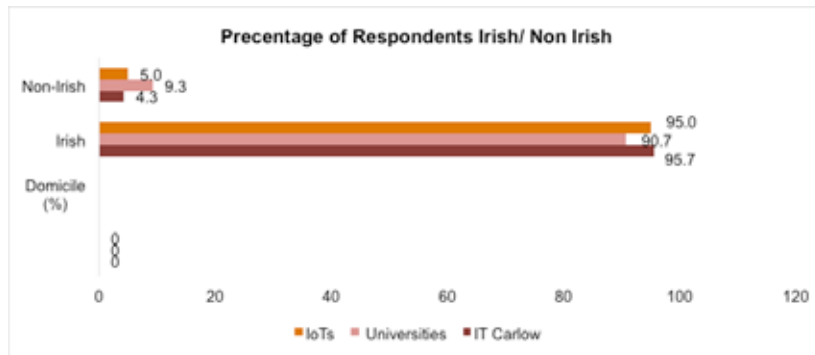


Figure 3.3 Institute of Technology Carlow percentage respondents Irish/ Non Irish.

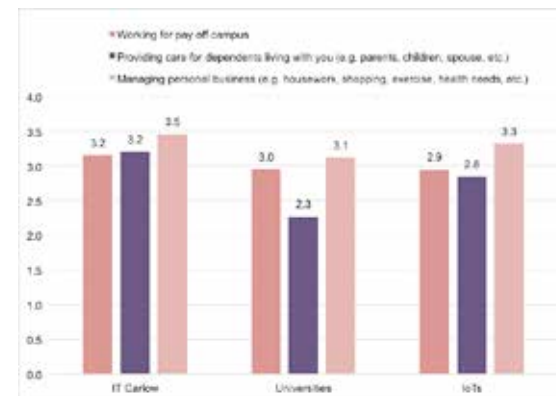


Figure 3.5 Responsibilities of Institute of Technology Carlow respondents.

Irish Survey of Student Engagement (ISSE) Survey 2015

Overall Analysis of Engagement and Outcomes Indices

The survey report presents an analysis of each question asked of students as well as an overall analysis of all the questions presented under the following two indices; "Engagement Indices" (Figure 3.6), and Outcome Indices (Figure 3.7).

Figure 3.6 shows the results from the "Engagement Indices" for each of the 6 categories listed, from Academic Challenge to Work Integrated Learning. (The scores between categories bear no relation to each other, but the scores in each category highlight the differences between Institute of Technology Carlow's score and that of the IoT and University sectors overall). The results show Institute of Technology Carlow scoring consistently higher than the IoT sector in all but one category, and higher than the University sector in all but 2 categories.

In Figure 3.7 Outcome Indices, Institute of Technology Carlow scores consistently higher than the IoT sector in all categories and higher than the University sector in all but two categories.

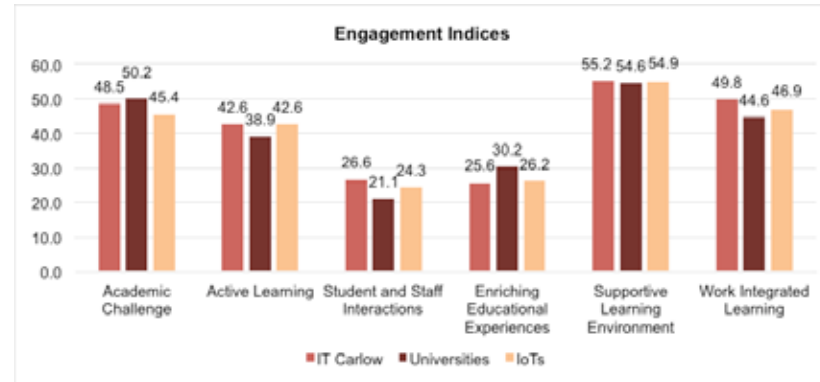


Figure 3.6 A comparison of Engagement Indices for Institute of Technology Carlow, Universities and the Technological sector.

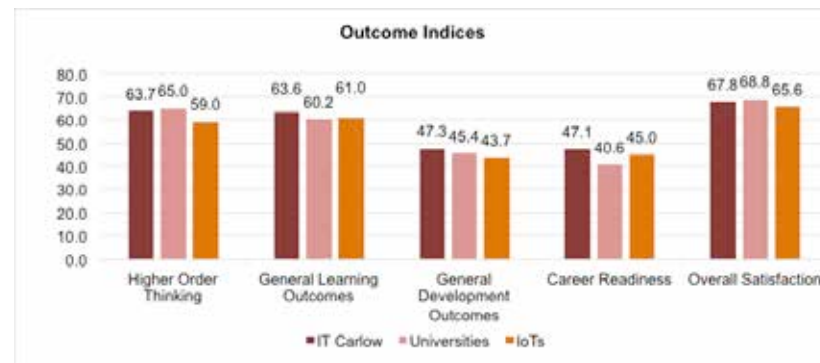


Figure 3.7 A comparison of Outcome Indices for Institute of Technology Carlow, Universities and the Technological sector.

Irish Survey of Student Engagement (ISSE) Survey 2015

Analysis of Specific Questions

In Figure 3.8 Institute of Technology Carlow scores higher in supporting students outside class, in its timely feedback to students and in how students feel they have been pushed to work harder than they thought they could by the expectations of their lecturers.

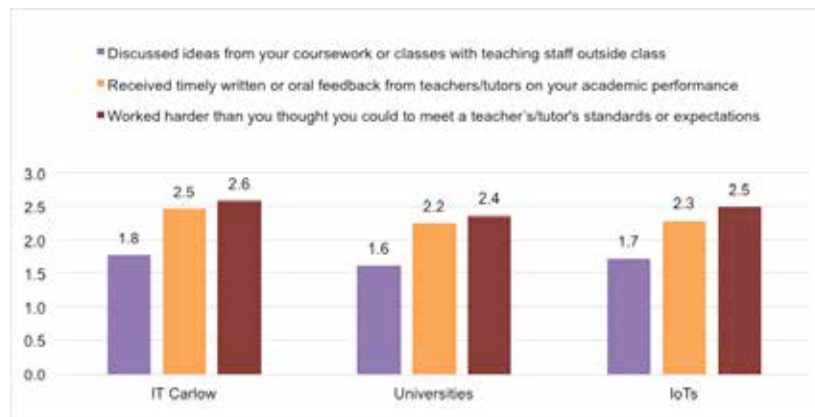


Figure 3.8 A comparison of scores for Institute of Technology Carlow, Universities and the Technological sector for support outside of class, timely feedback and lecturer expectations.

Figure 3.9 indicates that Institute of Technology Carlow students appear a little less inclined to use online learning systems than their contemporaries elsewhere and email less than university students. However, they are more likely to discuss their academic progress with academic staff.

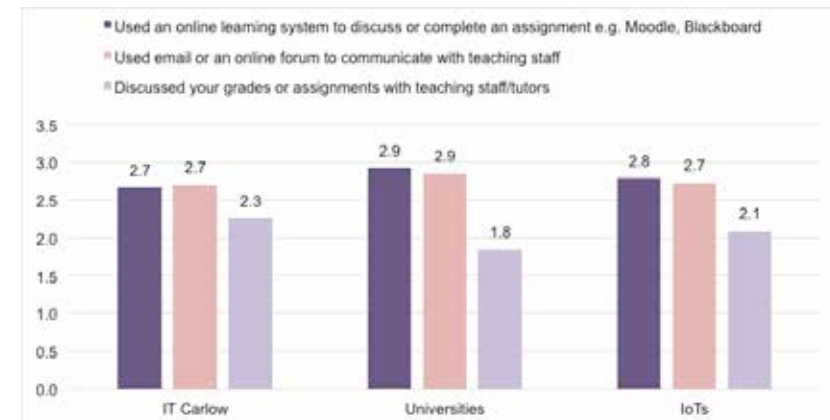


Figure 3.9 A comparison of scores for Institute of Technology Carlow, Universities and the Technological sector for use of digital technologies for communication with teaching staff.

Irish Survey of Student Engagement (ISSE) Survey 2015

Figure 3.10 shows that Institute of Technology Carlow students are more likely to use learning support services and to benefit from blended learning with workplace experience.

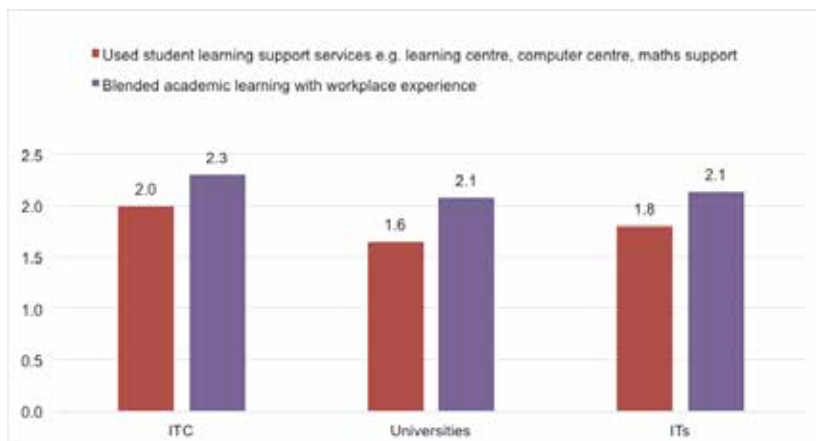


Figure 3.10 A comparison of scores for Institute of Technology Carlow, Universities and the Technological sector for use of learning supports and blended learning with workplace experience.

Figure 3.11 shows Institute of Technology Carlow students as being more likely to apply their learning to the workplace, to explore where to look for relevant jobs and to network to source information on job opportunities.

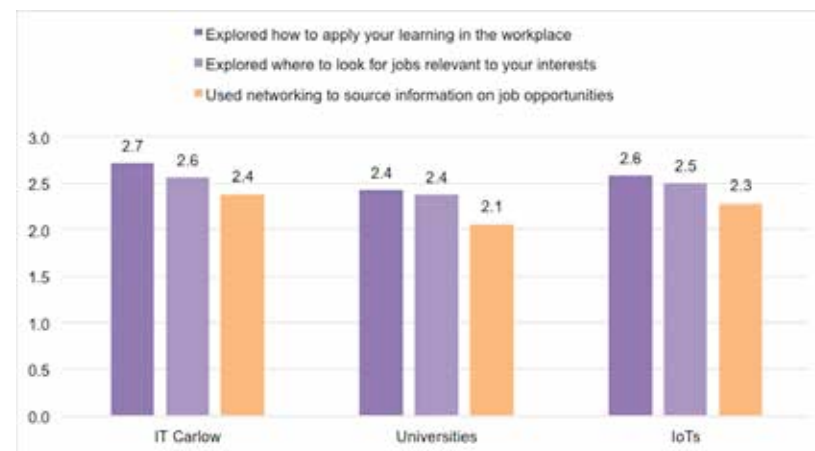


Figure 3.11 A comparison of scores for Institute of Technology Carlow, Universities and the Technological sector for the application of learning in the workplace, to explore where to look for jobs and to network in source information on employment opportunities.

Irish Survey of Student Engagement (ISSE) Survey 2015

Figure 3.12 shows the Institute of Technology Carlow in line with the Universities and other IoTs in the numbers of students who ask questions and contribute to discussions in class and in making online presentations.

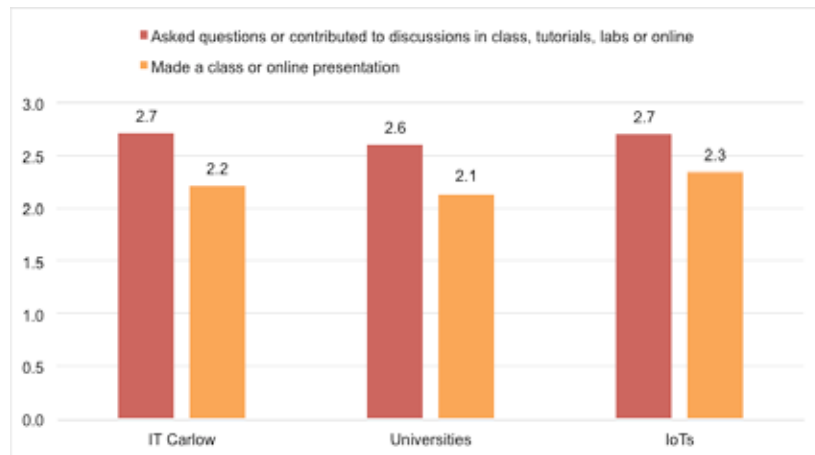


Figure 3.12 A comparison of scores for Institute of Technology Carlow, Universities and the Technological sector for class discussions and class/online presentations.

Figure 3.13 shows great similarity between Institute of Technology Carlow, the Universities and other IoTs in student perceptions in how hard they have worked and in the preparation of assignments. Institute of Technology Carlow also showed a similar reliance on the use of library services to Universities.

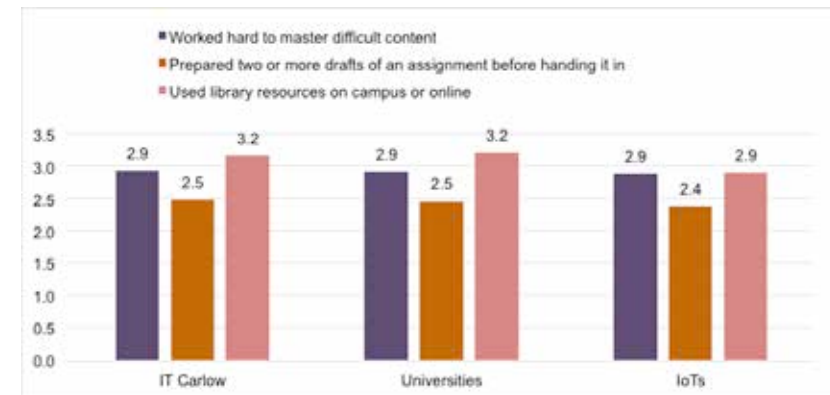


Figure 3.13 A comparison of scores for Institute of Technology Carlow, Universities and the Technological sector for how they have worked and their use of library services.

Irish Survey of Student Engagement (ISSE) Survey 2015

Figure 3.14 again shows considerable similarities on the questions relating to diverse perspectives, preparing for class and keeping up to date with studies.

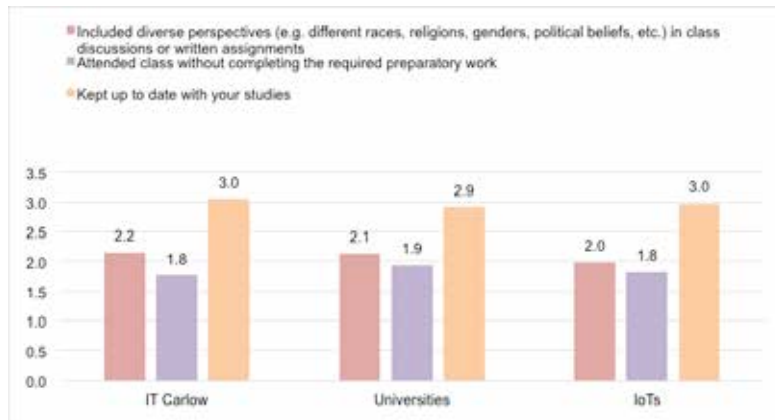


Figure 3.14 A comparison of scores for Institute of Technology Carlow, Universities and the Technological sector relating to diverse perspectives, class preparation and keeping current with studies.

Figure 3.15 shows students in Institute of Technology Carlow and IoTs as being more likely to work with other students in preparing assignments, inside and outside the class room.

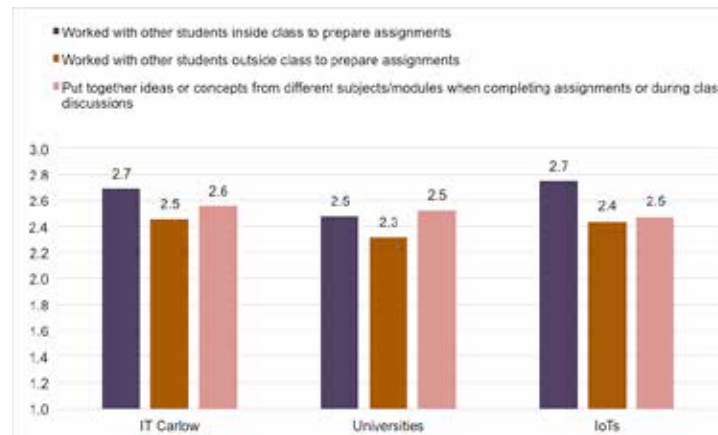


Figure 3.15 A comparison of scores for Institute of Technology Carlow, Universities and the Technological sector for interaction with other students in the preparation of assignments and combining learning outcomes across different modules in assignments.

Irish Survey of Student Engagement (ISSE) Survey 2015

Overall Satisfaction Questions

The survey asked 2 overall satisfaction type questions:-

1. Overall, how would you evaluate your entire educational experience at your institution?
2. If you could start all over again would you go to the same institution?

The answers are presented by First Year, Final Year and by Taught Postgraduate.

Figure 3.16 shows that 86% of Institute of Technology Carlow 1st Year students considered their entire educational experience to be good or excellent compared with 82% of University students 81% of IoT students.

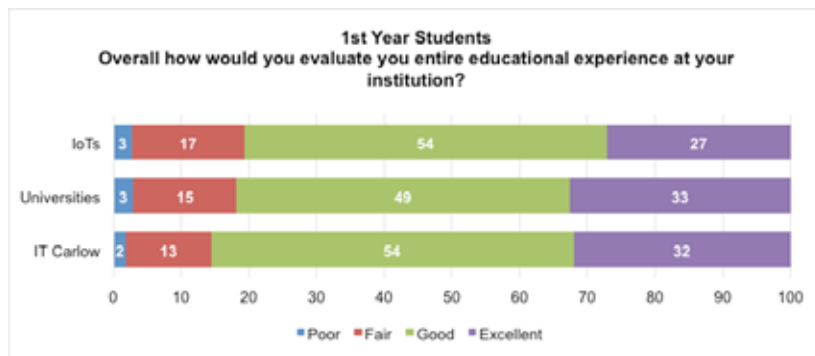


Figure 3.16 A comparison of scores for Institute of Technology Carlow, Universities and the Technological sector for 1st Year student satisfaction with their educational experience.

Figure 3.17 presents a similar picture to Figure 3.16 with 88% of Institute of Technology Carlow respondents stating they would probably or definitely go to the same institution if they were starting all over again. The answer to the same question from university respondents was 89% and 84% from IoT respondents.

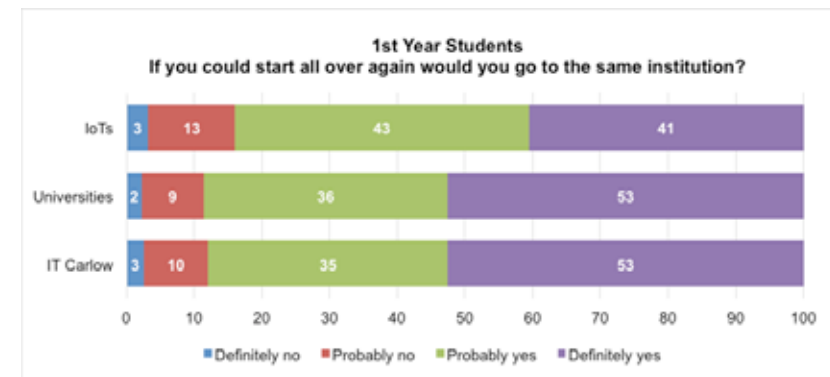


Figure 3.17 A comparison of scores for Institute of Technology Carlow, Universities and the Technological sector for satisfaction of 1st year students with their institution.

Irish Survey of Student Engagement (ISSE) Survey 2015

Figure 3.18 shows responses from final year students when asked to evaluate their entire educational experience. 78% of Institute of Technology Carlow students described it as either good or excellent compared to 77% for universities and 75% for IoTs.

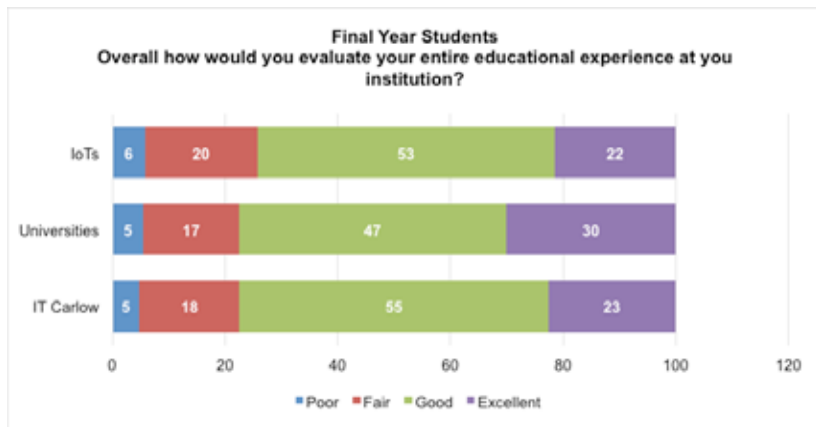


Figure 3.18 A comparison of scores for Institute of Technology Carlow, Universities and the Technological sector for Final Year Student satisfaction with their educational experience.

Figure 3.19 shows 78% of Institute of Technology Carlow Final Year respondents indicating they would probably, or definitely, go to the same institution if they could start all over again. This compares with a response or 81% for university respondents and 76% for IoT respondents.

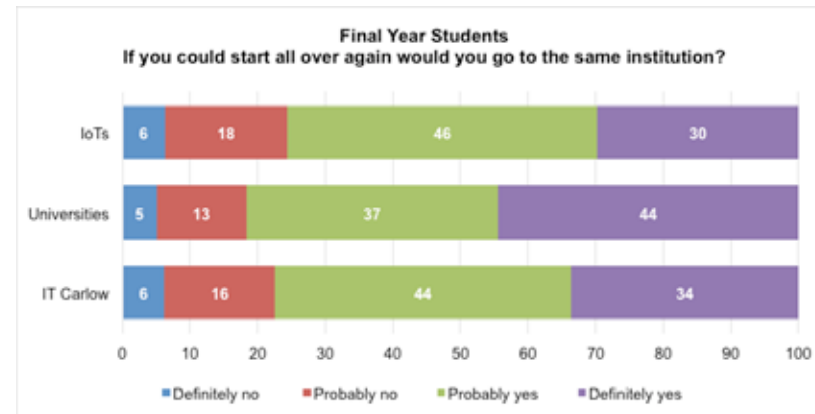


Figure 3.19 A comparison of scores for Institute of Technology Carlow, Universities and the Technological sector for satisfaction of final year students with their institution.

Irish Survey of Student Engagement (ISSE) Survey 2015

Figure 3.20 shows 76% of Institute of Technology Carlow respondents evaluating their entire educational experience as either good or excellent. The Universities score 79% and IoTs 77%.

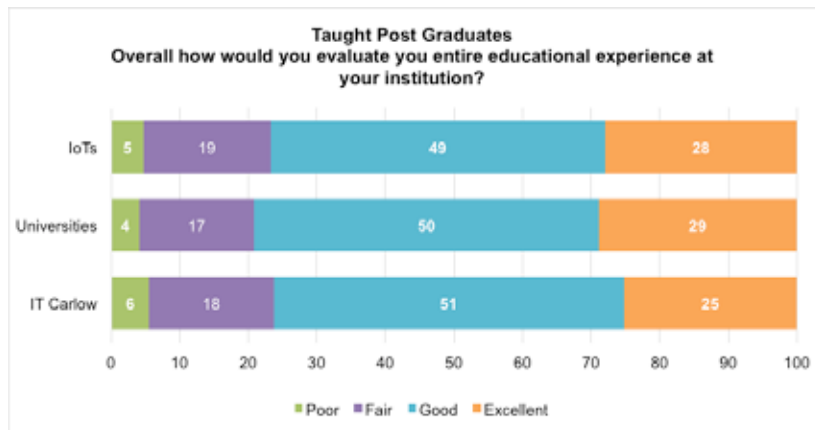


Figure 3.20 A comparison of scores for Institute of Technology Carlow, Universities and the Technological sector for taught postgraduate satisfaction with their educational experience.

In Figure 3.21, 79% of Institute of Technology Carlow post graduate respondents indicated they would probably or definitely go to the same institution if they were to start over. The corresponding figures were 85% for universities and 82% for IoTs.

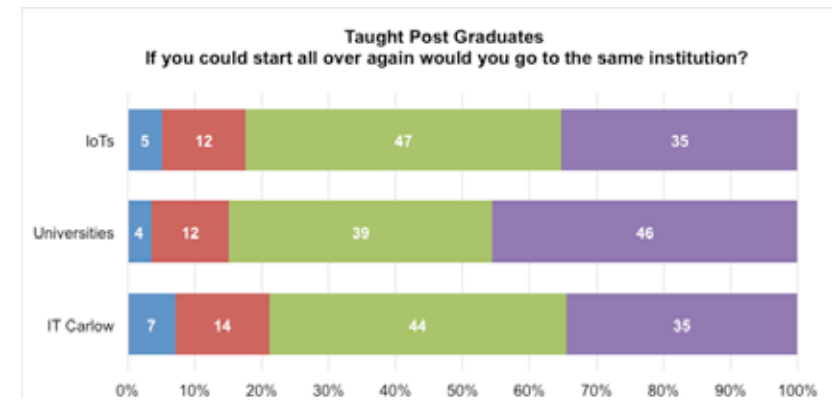


Figure 3.21 A comparison of scores for Institute of Technology Carlow, Universities and the Technological sector for satisfaction of taught postgraduates with their institution.

Irish Survey of Student Engagement (ISSE) Survey 2015

Student Satisfaction from 2014 to 2016

Earlier data compared the Institute’s performance against that of the University and the IoT sector overall. In this section the focus is on Institute of Technology Carlow alone, over a 3 year period, and how it has been viewed by the students on 2 different critical and overarching questions, namely:

1. Overall, how would you evaluate your entire educational experience at your institution?
2. If you could start all over again would you go to the same institution?

The answers to these two questions have been analysed separately to find out how first years, final years and post graduates answer.

Figure 3.22 shows in 2014, 81% of first year students evaluated their educational experience to be good or excellent. The corresponding figure for 2016 was 86%.

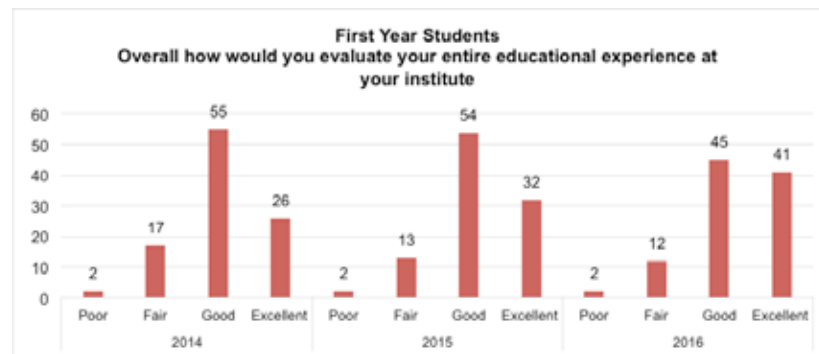


Figure 3.22 Institute of Technology Carlow first year student satisfaction 2014-2016.

Figure 3.23 shows in 2014 81% of Institute of Technology Carlow students said that if they could start over again they would go to the same institution. This figure increased to 88% in the 2016 survey.

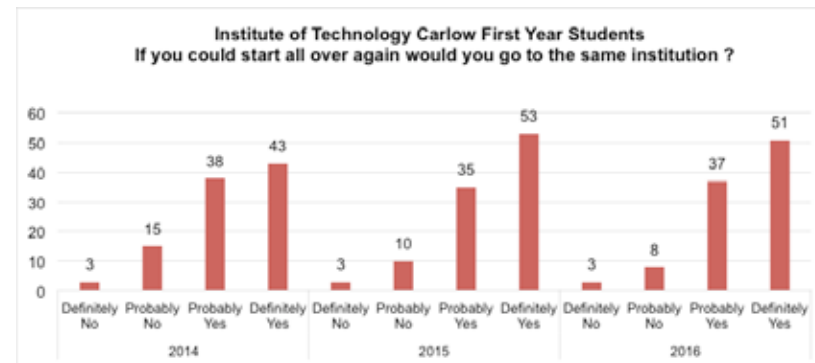


Figure 3.23 . Institute of Technology Carlow first year student satisfaction with the Institute 2014-2016.

Irish Survey of Student Engagement (ISSE) Survey 2015

Figure 3.24 shows in 2014, 76% of final year students evaluated their educational experience to be good or excellent. The corresponding figure for 2016 was 83%.

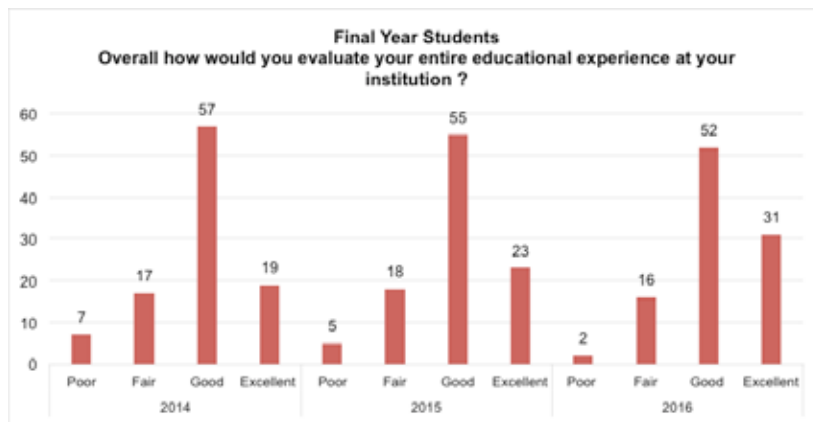


Figure 3.24 Institute of Technology Carlow final year student satisfaction 2014-2016.

Figure 3.25 shows in 2014 73% of Institute of Technology Carlow students said that if they could start over again they would go to the same institution. This figure increased to 83% in the 2016 survey.

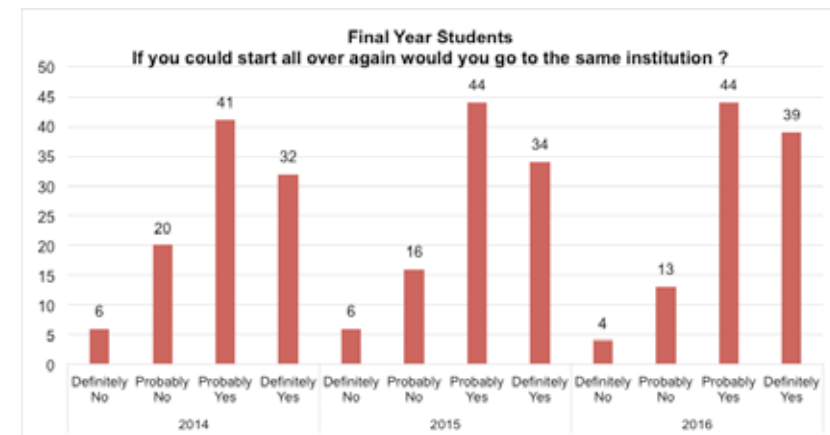


Figure 3.25 Institute of Technology Carlow final year student satisfaction with the Institute 2014-2016.

Irish Survey of Student Engagement (ISSE) Survey 2015

Figure 3.26 shows that from 2014 to 2016, 78% of final year students evaluated their educational experience to be good or excellent. The corresponding figure for 2016 was 86%.

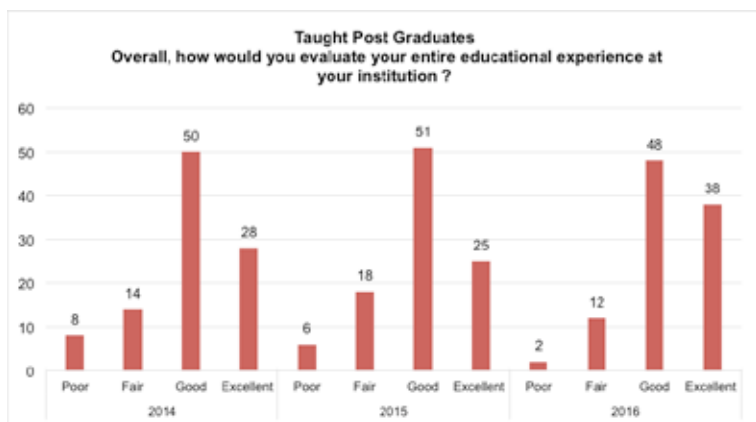


Figure 3.26 Institute of Technology Carlow post graduates satisfaction 2014-2016.

Figure 3.27 shows in 2014 83% of Institute of Technology Carlow students said that if they could start over again they would go to the same institution. This figure increased to 86% in the 2016 survey.

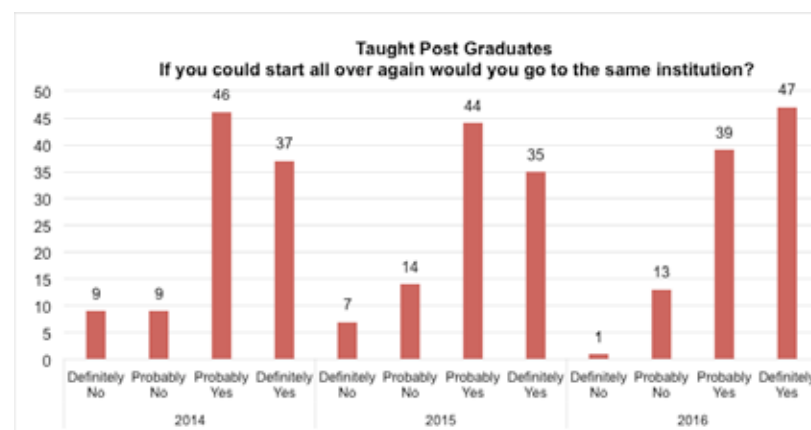


Figure 3.27 Institute of Technology Carlow taught post graduates satisfaction with the Institute 2014-2016.

Irish Survey of Student Engagement (ISSE) Survey 2015

International Comparisons

In looking beyond Ireland to find international comparators, the UK Engagement Survey 2014, (authored by Dr Alex Buckley, Higher Education Academy) offers some useful comparators. While there are many differences between the UK and Irish surveys there are some similar questions asked of students in both countries which allow for some comparisons to be made.

Figure 3.28 highlights the importance that Institute of Technology Carlow places on acquiring job related or work related knowledge and skills. 62% of Institute of Technology Carlow respondents felt that they had acquired quite a bit, or a lot of these skills compared to 54% for the Irish universities, 60% for IoTs and 57% for UK universities.

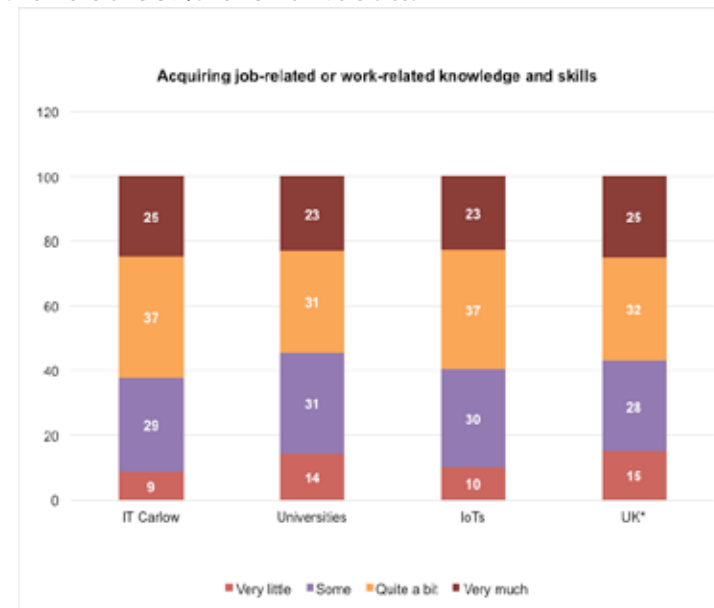


Figure 3.28 A comparison of the importance placed on acquiring job related or work related knowledge and skills by UK and Irish HEIs.

UK Engagement Survey 2014 Question "How much has your experience at this institution contributed to your knowledge, skills, and personal development in work related skills?"

Irish Survey of Student Engagement (ISSE) Survey 2015

Figure 3.29 shows 79% of respondents in Institute of Technology Carlow feel that they are required to think critically and analytically; this compares favourably with the Irish and UK universities figures which were 81% and 82% respectively. IoTs overall recorded 73%.

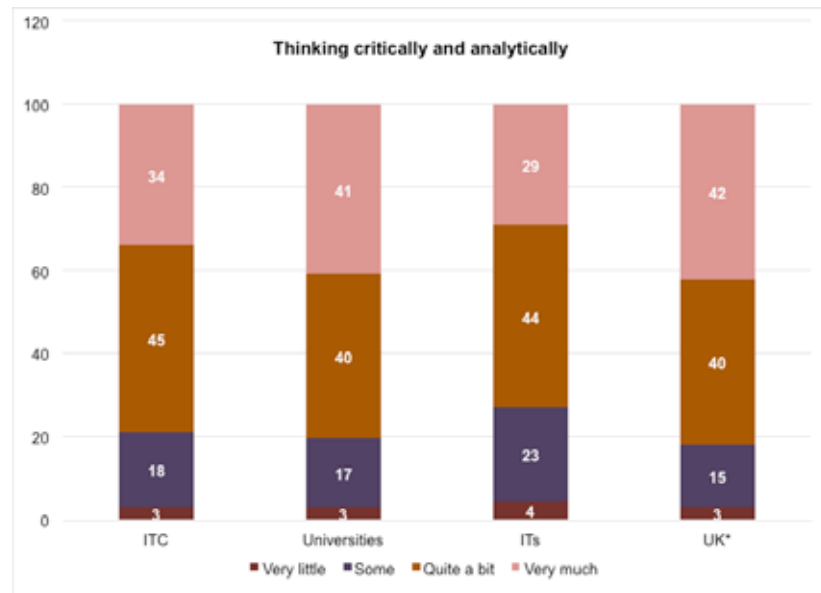


Figure 3.29 A comparison of the importance placed on thinking critically and analytically by UK and Irish HEIs.

*UK Engagement Survey 2014 .

Figure 3.30 suggests that the emphasis placed on values and ethics by Institute of Technology Carlow is having an impact on students with 53% of Institute of Technology Carlow respondents seeing their experiences in the Institute having "quite a bit, or very much" influence on them developing a personal code of values and ethics. The figures for Irish universities (49%) and IoTs (47%) are noticeably lower. The UK universities appear to fare better at 59%.

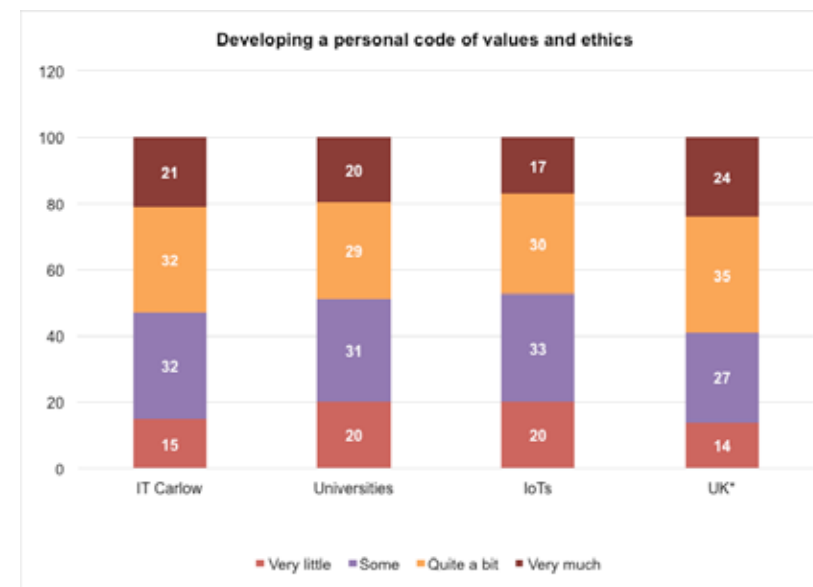


Figure 3.30 A comparison of the emphasis placed on values and ethics by UK and Irish HEIs.

*UK Engagement Survey 2014 (Chart 3). The question asked "How much has your experience at this institution contributed to your knowledge, skills, and personal development ...of personal values?"

Irish Survey of Student Engagement (ISSE) Survey 2015

Conclusion

While the Irish Student Engagement Survey results show a fairly high degree of similarity across the University and IoT sectors, there are many positive aspects of the student experience noted in Institute of Technology Carlow which re-affirms the progress made and the direction taken through the implementation of the Institute's strategic plan.

In reflecting on what the main messages the Institute may take from this survey, it is worth noting that:

"Student engagement cannot be successfully pursued at the level of the individual teacher, school or faculty but must be pursued holistically in a 'whole-of-university' approach and with a common understanding of what it is the institution seeks to achieve" (Baron, P. and Corbin, L., Student engagement: rhetoric and reality. Higher Education Research and Development vol. 31, no. 66 (2012), pp. 759 – 772: 769)

In identifying key messages the following indicators are worth noting:

- The Overall indices show a consistently positive response from students as to how they view their engagement with the Institute of Technology, Carlow. This is, in the great majority of responses, more positive than those reflected in the results published for the University and IoT sectors overall.
- Student satisfaction in Institute of Technology Carlow is most evident by the career inspired nature of much of the learning and its focus on learning in the workplace. This reflects much of what the Institute's strategy sets out to achieve and is a core characteristic of what a Technological University will look like.

- Institute of Technology Carlow students benefit from relatively good access to teaching staff and to timely responses, for example, in terms of marking assessments. There is a positive view held as to the quality of the learning support services and of the overall learning environment.
- Students appear to feel that they are expected to work hard and that they are stretched academically.
- A closer analysis of the data, at discipline/department level, is likely to give further insight into the "overall satisfaction" set of answers in particular.
- In looking specifically at how first year, final year and postgraduates judged the quality of their entire educational experience, across the three annual engagement surveys (2014 -2016) there is a very definite trend showing an increasingly positive response year on year. For example, in 2014 78% of postgraduate students judged their experience to be good or excellent; this figure increased to 86% in 2016. Likewise, when the same groups were asked if "you could start over again would you go to the same institution" the responses showed very positive and an improving assessment. For example, in 2014 81% of first year students said they would probably or definitely repeat the experience; this figure increased to 88% in 2016.



Marc Chagall (1887-1985), *Jour de Printemps* (Lithograph, 1972)
From the Frank X. Buckley and Michael P. Burns Collection at the Institute of Technology Carlow.

APPENDIX 4

HEA FEEDBACK TO INSTITUTE OF TECHNOLOGY CARLOW ON THE STRATEGIC DIALOGUE CYCLE 3 COMPACT

Note that the Institute of Technology response to the assessment findings is presented in Table 3 (pp 28-31, Self-Evaluation Report Strategic Dialogue Cycle 4) submission to the Higher Education Authority 16th May 2017.

ASSESSMENT FINDINGS

In assessing performance, we have relied upon the self-evaluation report submitted by your institute, the "Reflections on Performance" document prepared by the HEA and the discussion at our recent strategic dialogue meeting, a minute of which has now been prepared. The aforementioned documentation is now attached.

The self-evaluation report, and subsequent discussion at the bilateral meeting, have shown that progress can be demonstrated across all domains.

The institute is engaged in a major change project with WIT with the objective of achieving designation as a technological university. The HEA notes the evident commitment of ITC to this objective, having regard to the need for careful planning, given the complexities involved. The institute also continues to respond to increasing student demand in its catchment area. The institute has made less progress than anticipated in the development of the regional cluster, although its work in the local regional skills forum is noted. The institute is also making progress in its use of diverse sources of data and information to enhance strategic planning, such as quality assurance, internal audit and others. The institute has also made progress in international benchmarking; it should continue to develop this with a focus on developing this benchmark beyond quantitative measurement, to include more qualitative assessment of success against particular policy objectives.

Overall, ITC has demonstrated very good progress against mission-coherent objectives through an analytical and probing self-evaluation report and other data sources. The institute is commended for its use of benchmarking.

The HEA would expect that the institution would continue to expand its use of benchmarking to set priorities and undertake self-evaluation.

This places ITC in Funding Performance Category 1, and it is therefore proposed to release performance funding in full in respect of the 2017 budget allocation. ITC should have regard to the specific institutional feedback provided in this document and in the “Reflections on Performance”. In advance of, and in preparation for, the next round of compact evaluations the HEA will also provide more generic feedback to all institutions as part of the formal and final communication of cycle 3 outcomes.

Minutes of Strategic Dialogue Cycle 3 bilateral meeting, 7 September 2016

In attendance

Members of the Senior Management Team and HEA Executive, along with two external advisers (Mr George P. Pernsteiner and Mr John Randall), met with the institutional representatives as set out below. The meeting was chaired by HEA Interim Chief Executive, Dr Anne Looney. A process auditor was also present at the meeting.

ITC representatives

- Dr Patricia Mulcahy, President
- Mr David Denieffe, Vice President for Academic Affairs
- Mr Cormac O’Toole, Vice President for Corporate Affairs
- Mr Declan Doyle, Vice President for Development & Research
- Ms Maebh Maher, Head of Faculty of Business & Humanities

The HEA welcomed IT Carlow (ITC) to the meeting and gave an overview of the strategic dialogue process and the context in which it operates. ITC was commended on its strong progress and for its self-evaluation report that provides evidence of reflection on performance and identification of issues arising. The HEA is aware that all higher education institutions are operating in a challenging financial environment, while continuing to respond to increasing student demand. The system has demonstrated that it continues to provide high-quality higher education and to respond to national priorities. The HEA made the following observations on the institute’s performance:

- The institute continues to make progress against the majority of the targets set out in its compact
- The institute is closely engaged with and committed to the ongoing process for merging with WIT, with the aspiration of achieving TU status for the South East; the institute recognises the need to undertake this in a carefully planned fashion, having regard to the challenges inherent in such a complex task.
- The institute uses processes such as quality assurance and external review effectively to assist in its own strategic planning and development.
- The institute has sought to benchmark its performance against that of a range of other institutions; while this is welcome, the focus at present is only on quantitative benchmarks; the institute should seek opportunities to complement these with more qualitative and issue-specific approaches.
- While there is evidence of some progress in respect of clustering, overall the progress is more limited than was expected originally.

The institute welcomed the opportunity to engage with the HEA on the compact and its broader strategic vision. It considers that it is delivering strong performance and is well-placed to develop further. It projects that the institute will continue to grow in response to student demand,

to reach a level of c. 9,000 students in the coming years. The institute would welcome enhancement of its capacity to manage this growth, by, for example, the introduction of a borrowing framework. The institute also considers that there is an opportunity to significantly enhance educational and research provision in the region through the realisation of its plans for creating a Technological University in conjunction with WIT, and is very committed to this project.

Risk management

The institute noted that the compact was underpinned by extensive layers of risk management and assessment. The institute uses processes such as quality assurance, financial reviews, and internal and external audits to inform both strategic planning and the associated necessary risk management. This helps the institute to manage its challenges, such as the work involved in the planned merger with WIT and development towards TU status.

Regional cluster

The institute noted that there has been some good progress in respect of the cluster, and cited engagement with FE providers as an example. There is a particular focus on trying to address skills needs, and the institute has been an active participant in the local skills forum.

The wider cluster has been less successful, partly because of the geographic spread of the Southern cluster region. The institute considers that there is an opportunity to build on the work of the regional skills forum to progress the issue.

Transitions

The institute has made progress to reduce its intake points from 30 to 24, and has introduced common entry for science and business, which has been well received by students. The institute is using the programmatic review process to consider further changes. It also pointed out its role as a multi-campus institution and the complication that this creates in moving to common entry – some of the other campuses provided specific denominated entry in response to particular student demands or needs.

Research and development

The institute clarified that the PhD numbers identified in the compact do not match the official HEA figures. Whereas the compact figures reflect all students who have started a research course, the figures submitted to the HEA include only students who have undertaken certain initial work as part of their research programme. The institute is seeking to continue to grow these numbers in line with the compact objectives.

In terms of the objective for graduate school delivery, the institute has made ongoing progress over 2015, and still aims to establish a school jointly with WIT by the end of 2016.

Internationalisation and benchmarking

The institute has benchmarked its performance against five IoTs and four UK institutions, to consider such issues as the relative numbers of undergraduates and postgraduates.

HEA noted that benchmarking could be extended to a range of more specific performance measures (such as access, retention, and student

experience). The HEA also noted the predominance of domestic academic external examiners (90 per cent of external academics are drawn from Ireland), and suggested that the institute consider actively internationalising in this regard. There is also an opportunity to target those international institutions from whom peers might be drawn, and to use this as an alternative form of benchmarking of quality.

In terms of internationalisation, the institute noted that it is taking a measured approach around targeted markets, and while it wishes to increase numbers, these will remain a relatively small proportion of the overall student body (around 10 per cent). The institute has identified six markets as a priority, and aims to have 400 to 420 international students out of an overall population of 4,000. The institute provided a range of supplementary information to address issues arising in the HEA evaluation.

Strategic Dialogue Cycle 3: reflections on performance

OVERVIEW

Institute of Technology Carlow (ITC) has provided a clear self-evaluation report that provides an update on all interim 2015 targets, as requested. The self-evaluation report is completed in full and colour coded. The Institute has achieved most of its interim targets and provides context on areas where performance is below target. Particular strengths revealed by the self-evaluation include:

- ITC included a 142-page appendix that provides more comprehensive details of the Institute's progress and information on future plans.
- On participation, equal access and lifelong learning, ITC has maintained its numbers for mature, target SEGs and those progressing from further education. It has increased its number of flexible learners from 2,085 in 2014/15 to 2,564 in 2015/16.
- Under the heading of excellent teaching and learning, ITC has met its 2016 target for the proportion of academic staff with a PhD. An additional 17 per cent of staff are undertaking doctoral studies. This target should be revisited in light of progress. There has been a growth in the number of students at Level 6, from 664 in 2014/15 to 985 in 2015/16.
- The 'internationalisation at home' concept is valuable.

The self-evaluation raises several issues for further discussion:

- Not all achievements listed are supported by sufficient evidence.
- On regional clusters, ITC has categorised all the objectives as met, whereas other institutions have cited issues within the cluster.
- Under high-quality research, there is a discrepancy in the data: ITC reports 80 postgraduate students in 2015/16, whereas HEA data shows only 58 research masters and 7 PhD students.

- The objective of developing a multi-campus graduate school with partners as part of the TU process is reported as having been achieved, and the report refers only to an initiative to implement shared and joint structured skills training modules to be rolled out by the institutions in 2016/17.
- Under enhanced internationalisation, some clarification is needed on who is being counted as participating in mobility programmes.
- There is little discussion of risk, challenges or failings that ITC can address. Difficulties are linked to State funding rather than strategic choices and the environment in which many modern HEIs have to operate. The institute specifically responded to this point to describe the nature of strategic planning and its attention to risk. While this is helpful, the core concern of the HEA remains that the institute must accept and manage/adapt to external risks over which they have little control.
- Commentary is provided on the facilitation process and on the challenges it posed, but none of these issues are investigated from the perspective of ITC's self-evaluation or reflection. The institute noted it was awaiting the final facilitation report.

Self-evaluation report – domain level review

1. Regional clusters

There are three objectives under this heading, and significant progress is demonstrated against all three, which are coded green. Among HEIs in this cluster, ITC was the only one to code all three objectives green. The other HEIs referred to issues within the cluster, such as geographical spread and the number of autonomous HEIs. To note:

- Joint projects that engage all cluster members contribute to the overall aim of deepening partnerships and collaborations. The IT Tralee-led project 'Digital Supports for Transitioning International Students into the Irish Higher Education sector' is a good example.

- The Regional Skill Fora (RSF) appear to have given some impetus to the cluster, and ITC has been very active and to the fore in taking a leadership role in this.
- Shared academic planning has been progressed via the RSF across two regional areas. The other HEIs in the cluster noted that there are difficulties in achieving the student pathway objectives for the cluster, and the approach of developing focused local progression schemes with shared learning across the cluster is considered to be more pragmatic. However, ITC references its work with the HEA and QQI in collating awards at FE and HE level in the south east. It notes that all the cluster partners continue to deepen their relationships with FE providers and gives examples of its own alliances with FE providers.
- A research mapping exercise reporting more collaboration is being undertaken and results are pending. It will be very interesting to see whether a research strategy for the cluster emerges from the exercise. The report gives some early indications of collaborative projects.
- ITC reports significant joint activities at cluster level in enhanced technology transfer, entrepreneurship and innovation, as well as positive regional activity, joint bids and joint successes.

2. Participation, equal access and lifelong learning

The two objectives under this heading are both coded green. Interim targets for both objectives appear to have been met, and reference is made the HEA's National Access Plan 2015–2018. To note:

- ITC has maintained its access numbers for mature students, target SEGs and those progressing from further education. Although there was a slight decrease in the number of SEG new entrants in 2015/16, from 417 in 2014/15 to 397 in 2015/16, the Institute has increased its number of flexible learners from 2,085 in 2014/15 to 2,564 in 2015/16 – an increase of 23 per cent.

- In 2015, a new high-performance entry scheme was introduced. The aim of this scheme is to enable high-achievers to achieve their dual ambition of a high-quality education and performance in their chosen field. It currently applies in three areas – sport, active citizenship, and innovation/entrepreneurship.
- ITC has agreements with 18 FE providers, 7 of which were signed in 2015/16. In 2015, a MoU was established with the Laois–Offaly ETB.
- Lifelong learners (LLL) now account for 36 per cent of ITC’s total student population. The Institute states that, with LLLs accounting for 27.6 per cent of its WTEs in 2014/15 and 33% in 2015/16, it has the highest level of lifelong learning in the IoT sector.
- ITC states that it has outperformed both the university and the IoT sectors in terms of filling spaces on Springboard courses across NFQ Levels 6 to 9. In February 2015, ITC secured 344 Springboard places across 15 programmes from Level 6 to 9, and 25 places for ICT programmes. In total, 404 places were taken up: 166 at Level 6, 36 at Level 7, 125 at Level 8, and 77 at Level 9. According to ITC, this represents a 177 per cent increase on the previous year’s uptake. However, HEA data indicates that only 373 places were taken up, not 404, and UCD is the highest performer in terms of places filled.
- Of the 2014 Springboard cohort (144 places), 84 completed successfully and 26 part-completed, with some modules deferred until 2015/16.
- In 2015, ITC participated in the European Globalisation Adjustment Fund programme in support of redundant workers in the EU. It had learners from Dell, SR Technics, Construction Programme and Talk Talk on the programme. It currently has learners from Andersen Ireland, Lufthansa Technik Airmotive Ireland, and PWA Ireland.

3. Excellent teaching and learning, and quality of student experience

All three objectives under this heading have been coded green. Interim targets appear to have been met in all three. To note:

- 31 per cent of academic staff are now qualified to doctoral level, against an interim target for 2015 of 24% and a 2016 target of 28 per cent. 98 per cent of academic staff hold Level 9 or higher level qualifications, and 17 per cent are currently pursuing doctoral studies.
- ITC had the second-highest completion rate for the 2015 ISSE at 36.6%.
- In 2015, all faculties completed Stage 1 Quinquennial (Strategic) Reviews, covering the period September 2014 to June 2015. (The external peer reviewers’ reports are available on the ITC website, and links were provided in the report.) In 2016, they all completed Stage 2 Quinquennial (Programmatic) Reviews, covering the period September 2015 to June 2016: these will be published later in the year. In addition, ITC completed a 2015 Annual Institutional Quality Review (AIQR), and a 2015 review of policies and procedures for research and for research ethics. In 2015, ITC received delegated authority from QQI for all activities up to Level 9.
- In line with the transitions agenda, ITC has reduced its CAO offerings from 37 in 2014 to 34 in 2016 (including six Level 8 courses at the Wexford campus).
- Numbers at Level 6 have increased from 664 in 2014/2015 to 985 in 2015/16. At Level 7, there has been a slight decrease, from 1,300 in 2014/15 to 1,238 in 2015/16 (HEA SRS data). ITC reports a growth in numbers at Levels 6/7 in 2015/16.
- ITC has developed four new Level 9 programmes, including offerings for Springboard (Medical Devices Regulatory Affairs) and for its Defence Forces collaborative partners.

4. High quality, internationally competitive research and innovation

There are three objectives under this heading – all have been coded green. It is not entirely clear if interim targets have been fully met. In addition, one of the objectives – To increase the number of postgraduate research students to 100 registered students by the beginning of the academic year 2016/17 – Note: this objective is directed towards meeting the criteria of TU designation and is subject to additional investment for completion – is not in the published compact agreed with the HEA. This objective was also in the 2014 self-evaluation report submitted by ITC. To note:

- In 2015, eight core leaders have been appointed across ITC's five priority COREs (enviroCORE, designCORE, gameCORE, healthCORE, and engCORE).
- A Design+Technology Gateway was established in the Dargan Centre in 2015, funded by Enterprise Ireland.
- One of the objectives was to develop a multi-campus graduate school in collaboration with WIT as a key component of a South East TU. The interim target for 2015 was the implementation of academic and QA arrangements for the graduate school and the roll-out of the graduate school in one or two prioritised cross-campus research areas. The progress outlined does not meet the target, and this objective should perhaps be amended to reflect the current status of the TU process. The objective could perhaps be for the HEIs in the cluster to implement shared and joint structured skills training modules, to be rolled out in 2016/17. ITC notes that the general objective is to collaborate with WIT on multi-campus graduate provision in the context of the TU project.

- ITC states that it has met the objective of having 80 registered postgraduate students at the beginning of academic year 2015/16. HEA SRS data shows that there are 58 research masters (Level 9) and 7 PhD students (Level 10) – a total of 65 registered postgraduate numbers. This discrepancy should be clarified with ITC. The institute responded stating:
 - ITC ranks second only to DIT in terms of the percent of its total learner population engaged in postgraduate studies (research and taught). This figure is 9.8% or 11.7% depending upon whether 'non-weighted or 'weighted' HEA student numbers are used for the calculations.
 - ITC ranks first in the sector in terms of the percent of its full-time learner population engaged in postgraduate studies at 8.9%.
 - ITC ranks fourth in the sector in terms of the percent of its 'total headcount' learner population engaged in postgraduate studies at 8.7%

5. Engagement with enterprise and the community, and embedded knowledge exchange

All three objectives under this heading have been coded green. To note:

- An interim target for 2015 was the operation of a regional engagement forum. This forum has been subsumed into the national network of regional skills fora (RSF) established by the DES. ITC currently chairs the SE RSF, which is operated in association with all the regional education and training providers. The 2016 target to evaluate the regional engagement forum could thus be amended to refer instead to the RSF. ITC clarified it cannot evaluate the RSF as it is a DES initiative. However, it still needs to review the objective in respect of the Regional Engagement Forum evaluation given that the forum appears to have been subsumed by the RSF.

- ITC has agreed a number of EI Technology Transfer Office metrics. It hasn't fully met some of its 2015 targets, but it has exceeded others:

Metric	2015 Target	Achieved
Spin Outs	1	0
Licences/Options/Assignments	3	1
Priority Patent Applications	2	0
PCT Patent Applications	1	0
Research Agreements with industry (<25k)	50	45
Research Agreements with industry (>25k)	2	3
Inventions Disclosures	4	7
Start-ups, spin-ins	15	91

- It would have been useful if information about the start-ups had been included, given that there was significant increase from 2014, when there were 16 start-ups/spin-ins reported.
- In relation to the President's Volunteer Awards, it was stated that the target of 10 per cent increase in the number of students participating had been achieved. Again, it would have been useful to have a baseline figure for the number of students participating in order to see the increase in the absolute number of students. ITC clarified:
 - 2012/2013 the institute made 11 awards.
 - 2013/2014 the institute made 26 awards.
 - 2014/2015 the institute made 28 awards.
 - 2015/2016 the institute made 39 awards.
- All faculties completed Quinquennial Reviews and it was recommended that programmatic teams would have to explicitly discuss how social/civic awareness and engagement was embedded within each programme. As a result, a process was designed by the Teaching and Learning Centre to facilitate this and all faculties have completed this work.

6. Enhanced internationalisation

All four objectives under this heading have been coded green. To note:

- ITC notes that benchmarking its international activities is a priority. It has compared its international performance against other IoTs and against similar-sized institutions in the UK – Bath Spa University, University of Bolton, and University of Chichester. In the UK HEIs, ITC notes that non-EU enrolments in 2014/15 accounted for 13.7 per cent of total enrolments – 6.7 per cent undergraduate and 7 per cent postgraduate. ITC states that it would exceed the UK institutions' undergraduate figure.
- HEA SRS data shows that international enrolments (both EU and non-EU) account for 6 per cent of all enrolments in 2015/16 and this has been static since 2013/14. ITC states that international enrolments in ITC is higher, at 8.7 per cent of all enrolments. It describes itself as a leader in international recruitment among the IoTs. In terms of full-time non-EU recruitment as a percentage of the total IoT international student population (2014/15), IT Carlow ranks behind DIT (35%); DKIT (15%); AIT (9%). WIT has the same share of non-EU students, 8%, as IT Carlow.
- HEA SRS data for 2015/16 shows that international enrolments in ITC (both EU and non-EU) is 270 (22 EU and 248 non-EU). In the report, ITC indicated that there are 395 registered international learners. This figure should be clarified.
- One of the targets was to increase the number of alliances and collaborations listed in the Institute Collaboration Register, with a 2015 target of 50 per cent increase. There was no baseline figure provided, so it is difficult to judge if this has been achieved. Since 2013, ITC has increased its international alliances by 16 and its national alliances by 4.
- In relation to Erasmus, the 2015 target was achieved: 1.33% (0.75%) of students and 5.6% (5%) of staff participated in overseas mobility programmes. The 1.33% can be broken down into 0.6% EU and 0.73% non-EU). HEA SRS data shows that there was an increase in the number of incoming Erasmus students, from 121 in 2014/15 to 140 in 2015/16.

The number of outgoing Erasmus students decreased from 4 in 2014/15 to 0 in 2015/16.

7. Institutional consolidation

The one objective under this heading was coded green. To note:

- The objective relates to the TU process. Following the pause in the process in 2015, ITC and WIT have re-engaged and have completed the preliminary engagement phase, as recommended in the Kelly report. Both institutes have developed and agreed a plan with the intention of making an application for TU designation within three years.

Additional notes

ITC reported a surplus position of €3,925,000 for its 2014/15 draft accounts and is projecting a budget surplus of Euro Sans 1,805,000 for 2016.

Additional objectives (also noted in the 2014 report) have been included in the following sections:

High quality, internationally competitive research and innovation

ITC has included a new objective, but did not provide a rationale for its inclusion. This will be discussed with the Institute at the bilateral meeting.

Institution objective: To increase the number of postgraduate research students to 100 registered students by the beginning of the academic year 2016/17. Note: this objective is directed towards meeting the criteria of TU designation and is subject to additional investment for completion.

The HEA does not at present provide additional investment for the purpose of meeting TU criteria. However, other reports commissioned by

the Department for Education & Skills have recommended such initial investment.

Performance indicator: Postgraduate registered students.

Baseline: Registered students at beginning of academic year 2012/13.

Interim 2014 target: 55 registered students at beginning of academic year 2014/15.

Interim 2015 target: 80 registered students at beginning of academic year 2015/16.

Final 2016 target: 100 registered students at beginning of academic year 2016/17.

Enhanced internationalisation

ITC has included two new objectives, but did not provide a rationale for their inclusion. These objectives were in the original compact as performance indicators under the objective: To develop internationalised curricula and internationally-focused programmes, learning outcomes, and assessment of students in line with international goals.

Institution objective: Increase the number of alliances and collaborations with international HEIs by 10 per cent over the lifetime of the plan. (This was previously a performance indicator in 5.6.2.)

Performance indicator: Number of alliances and collaborations listed in the Institute Collaboration Register.

Baseline: Develop clearly defined criteria based on strategic priorities in pursuing and forming new international partnerships and strategic alliances.

Interim 2014 outcome: Criteria for new partnerships/collaborations are contained within the policies and procedures relating to collaborative and transnational provision and joint awards approved following international peer review in 2014. In 2014, three new partners were added, but overall there was a net decrease of two partners.

Interim 2015 outcome: 50 per cent of target achieved.

Final 2016 target: target achieved.

Institution objective: To enhance student exposure to global perspectives by promoting study and work placement in industry (for industrial projects) abroad, through staff and student exchange programmes, and by encouraging students to undertake mobility programmes with international partners (not only academic but also industrial partners). (This was previously a performance indicator in 5.6.2.)

Performance indicator: Percentage of students and staff involved in overseas exchange and mobility programmes.

Baseline: 0.5% of students and 3% of academic staff participated in overseas mobility programmes.

Interim 2014 target: Target achieved for 2014. The achievement of future targets is dependent on Erasmus funding received through the HEA.

Interim 2015 target: 0.75% of students and 5% of academic staff to have participated in overseas mobility programmes.

Final 2016 target: 1% of students and 7% of staff to have participated in overseas mobility programmes.

APPENDIX 5

REGIONAL CLUSTER AND THE REGIONAL SKILLS FORA

REGIONAL CLUSTER AND THE REGIONAL SKILLS FORA

The purpose of this Appendix is to provide some additional information on the update provided in Section 1 of this submission on the Regional Cluster.

Section 1 has already summarised some of the challenges for the South Regional Cluster. One of the conclusions presented in Section 1 is that the South Cluster did not operate as originally intended by the participants. Notwithstanding this, Institute of Technology Carlow asserts that new Government policy and initiatives effectively subsumed the original objectives of the South Cluster over the timespan of Compact 2014-2016. The Institute further concludes that its experience of working with the new Government initiatives is that they are positioned to deliver a more immediate and identifiable impact for the region.

The original objectives of the **South Regional Cluster** over the timespan of Compact 2014-2016 were as follows:

- Increase the capacity and responsiveness of the Irish higher education system, particularly in the South Region;
- Deepen partnerships and collaborations among the cluster higher education Institutions;
- Provide improved progression pathways between higher education institutions;
- Enhance co-operation across the cluster higher education institutions in support of regional economic, social and cultural development;
- Build on existing successes in the areas of course development, collaborative research, entrepreneurship and innovation.

The relevant new Government initiatives are the:

- Department of Education and Skills-led **Regional Skills Forum (RSF)** programme and the implementation of the Regional Education and Training Provider Groups (RETPG), the Project Advisory Group (PAG) and the National Skills Council;
- Department of Jobs, Enterprise and Innovation-led Regional **Action Plan for Jobs (APJ)** and the establishment of Regional APJ Implementation Committees by the Department of Jobs, Enterprise and Innovation.

Table 5.1 provides information on the membership and objectives of these two initiatives using the South East APJ and South East RSF as representative examples. It is important to note that depending on geographic location, individual HEIs can be centrally involved in more than one regional RSF/APJ. For example, in the case of Institute of Technology Carlow, it is contributing to three regions directly including the South East, Mid-East and Midlands APJ's and South East, Mid-East and Midlands RSFs.

It is also important to note that the various regional RSF's have developed close relationships with each other through reciprocal arrangements whereby members from each forum attend meetings of the neighbouring regional fora. This is particularly relevant to the South Region Cluster where there is cross-representation on the South West RSF and South East RSF (the South Regional Cluster area). Within this context, the objectives and actions of regional RSF's and APJ's are also fully aligned. This is also reinforced by cross representation on RSFs and APJs within regions.

By way of an example, Table 5.2 provides information on the action plan for the South East RSF from January to June 2017, while Table 5.3 provides an example of how representative actions taken by the South East RSF align with South East APJ actions and the original objectives of the South Regional Cluster.

There are many other activities, collaborations and initiatives undertaken bilaterally and trilaterally by the member HEI's of the South Regional Cluster. This includes significant activity in the Enterprise Ireland-led clusters which are focussed on technology transfer strengthening initiatives. In these clusters, Institute of Technology Carlow is amongst the HEIs located in the South East, Mid-East and Midlands cluster.

The HEA commenced a consultation process on the Regional Clusters and issued a discussion document in November 2015 entitled *Discussion Document Regional Clusters: Maximising Collective Impact Strategy 2015-2020*. It is timely that this area be revisited in light of ongoing national and regional developments and all members of the South Regional Cluster would welcome the opportunity to review the configuration and goals of the southern regions.

Table 5.1 Membership and objectives of the South East Regional Skills Forum and South East Action Plan for Jobs

South East Regional Skills Forum	South East Action Plan for Jobs
<p>Membership: This includes senior representatives across regional higher education, further education, training providers, industry, industry representative bodies, government departments and development agencies. Edmond Connolly is the Regional Skills Forum Manager. The membership was as follows in May 2016: Institute of Technology Carlow – Dr Patricia Mulcahy President and chairperson of RSF; Institute of Technology Carlow - David Denieffe: Secretary to the Steering Group; Waterford Institute of Technology - Professor Willie Donnelly – President; Limerick Institute of Technology - Donnacha McNamara, Head of Faculty of Business and Humanities; Kilkenny/Carlow ETB - Cynthia Deane CE; Tipperary ETB – Fionuala McGeever CE; Waterford/Wexford ETB, Kevin Lewis CE; Enterprise Ireland, Brian Fives; IDA, Anne-Marie Tierney-Le Roux, Regional Manager South East; South East Action Plan for Jobs, Sean McKeown, Director; Industry, Waterford - Laurent Borla, Actipharma, Waterford Chamber of Commerce President; Industry, Carlow - Colette Lane VP HR UNUM; Industry, Kilkenny – Lar Conroy, General Manager CipherTechs EU; IBEC South East– John Farrell, Regional Director; Skillnets - Waterford Chamber Skillnet, Sara Mullally; Skillnets - Carlow Kilkenny Skillnet, Aishling Ward; Carlow County Council - Kieran Comerford LEO Carlow; Wexford County Council - Tom Banville LEO Wexford; Kilkenny County Council – Fiona Deegan LEO Kilkenny; Waterford County Council – Richie Walsh; Tipperary County Council – Ita Horan; South East Chambers – John Hurley, CEO Kilkenny; Construction Industry Federation – Enda Cullen; Department of Social Protection – Liam Daly; Teagasc – Paul Hennessy; South West Regional Skills Forum.</p>	<p>Membership: The South East Action Plan for Jobs (APJ) covers the 5 counties of Carlow, Kilkenny, Tipperary, Waterford and Wexford. The Action Plan was launched in September, 2015 and the then Minister for Jobs, Enterprise and Innovation, Minister Bruton appointed Frank O'Regan to Chair the Implementation Committee. Frank is an entrepreneur and former Vice President of Global Operations for Bausch and Lomb, one of the largest multi-national employers based in the region.</p> <p>The South East APJ Implementation Committee comprises of representatives from all of the main stakeholder organisations in the region, including:</p> <ul style="list-style-type: none"> • the 5 local authorities and the Southern Regional Assembly; • the enterprise support agencies (i.e. IDA; EI and LEOs); • other state agencies (e.g. Failte Ireland; Design and Craft Council of Ireland; Education and Training Boards; etc.) • third level educational institutes (i.e. IT Carlow; WIT; and LIT); • Business and Industry Networks (e.g. IBEC; Chambers of Commerce; Skillnets); and • Local Industry Champions including Patsy Carney, Eirgen Pharma; Pat McLoughlin, Abbott Vascular; Terry Clune, Taxback; Pauline Oakes, CR Bard; Seamus Kilgannon, Schivo; Liam Griffin, Griffin Hotel Group; Colin Gordon, CEO Glanbia Consumer Products; and Rachel Doyle, Arboretum Home and Garden Heaven.

South East Regional Skills Forum	South East Action Plan for Jobs
<p>The Forum has four core objectives and has an agreed related plan of action as follows.</p> <p>Objective 1. Provide more robust labour market information and analysis of employer needs to inform programme development.</p> <p>Action 1.1 Identify, collate and promote identified current and future training and skills needs of employers.</p> <p>1.1.1 Summarise and present to educators, data from SLMRU (available on www.regionalskills.ie) and the Expert Group on Future Skills Needs and others identifying skills needs.</p> <p>1.1.2 Sectoral Skills Audits – Conduct skills needs audits where necessary. Utilise existing and ongoing research and information relevant to current and future skills needs where available. In conjunction with SEAPJ and in line with their six identified economic sectors, collaborate in a skills audit of each sector.</p> <p>1.1.3 Work with LEOs, EI, IDA and other representative bodies in identifying and meeting their client’s skills needs and communicate to education and training providers.</p> <p>1.1.4 Communicate feedback from the SEAPJ in relation to skills needs and present to HE and FET providers.</p> <p>1.1.5 Engage with recruitment consultants in the region and monitor online recruitment services to build a picture of emerging labour market demands</p> <p>Targeted Outcome: The current and future skills need of enterprise in the south east, in so far as is possible, is clearly understood by all key stakeholders.</p>	<p>The South East APJ has two main objectives by 2020:</p> <ul style="list-style-type: none"> • Facilitate the creation of an additional 25,000 jobs in the region; and • Bring the unemployment rate in the region to within 1% of the national average. <p>The Plan sets out a wide range of actions to help achieve these objectives, including actions aimed at:</p> <ul style="list-style-type: none"> • increasing the number of start-up businesses by at least 30% (e.g. through better mentoring and incubation space for start-ups, and enhanced supports through the Local Enterprise Offices); • increasing investments by overseas companies by up to 40%, which would mean at least 44 new investments in the coming years, delivered through measures including new advance technology buildings, and improvements in branding of the region as a great place to live and work; • increasing the number of jobs in exporting companies, in particular in manufacturing, agri-food, business services and biopharma/medtech; • increasing food exports through a range of measures, including the development of an artisan food hub, creation of an agricultural manufacturing cluster and setting-up a dedicated agri research centre; • establishing a financial services hub, as well as a joint IDA/ Enterprise Ireland strategy for Business Process Outsourcing; • establishing an industry-led forum and centre of excellence in the region for the Biopharma/medtech sector; and • accelerating the tourism targets, in particular attracting over 300,000 extra tourists and to create at least 5,000 associated jobs.

South East Regional Skills Forum	South East Action Plan for Jobs
<p>Action 1.2</p> <p>Promote career opportunities, access and progression and life-long learning to learners.</p> <p>1.2.1 Provide resources on career opportunities where there are skills deficits to second level through Guidance Councillor networks and other. (Links with Action 105 of SEAPJ)</p> <p>1.2.2 Highlight the opportunities and need for more learners to pursue science, technology, engineering and maths (STEM) subjects (Links with Action 61 and 168 of SEAPJ)</p> <p>Targeted Outcome:</p> <p>Career opportunities that are available in the south east are widely promoted to learners and their families.</p> <p>Objective 2. Help employers connect with the range of services and supports available across the education and training system.</p> <p>Action 2.1</p> <p>Establish strong links with employers.</p> <p>2.1.1 Engage directly with industry and through their representative bodies and other networks to determine skills needs and implement appropriate responses.</p> <p>2.1.2 Establish strong formal links with employers through the South East Action Plan for Jobs</p> <p>Targeted Outcome:</p> <p>Employers in targeted sectors believe that their skills needs are being satisfactorily addressed.</p>	<p>The Committee has agreed a comprehensive implementation structure to assist in the effective delivery of the South East APJ. This includes the establishment of:</p> <ul style="list-style-type: none"> • An executive project team: the 5 local authorities have provided funding towards the recruitment of a project team to oversee the implementation of the Plan, namely a Director, Sean McKeown, who has been in situ since the end of March 2016; and a Project Executive currently being recruited. • Sectoral Sub-Groups: comprising 6 sectors of strategic advantage identified in the region (i.e. Agri-Food; Tourism; Pharma/Med-Tech; Global Business Services and ICT; Engineering; and Design and Creative Industries) and 4 Capability Enablers (i.e. Critical Infrastructure; Enterprise and Entrepreneurship Supports; Education and Skills Provision; and Regional Branding). Each of the Sub-Groups will be led by a local champion (e.g. successful entrepreneurs from the region). • An Advisory Group (i.e. the Chair, 5 Local Authority CEOs and 10 Sub-Group champions) to: review progress reports and issues arising in relation to the implementation of actions; make recommendations to the Implementation Committee; and to provide strategic advice to the Director. • An Action Monitoring Committee (AMC) of key Agency Stakeholders to: undertake detailed monitoring / review of progress in implementing the actions in advance of the Implementation Committee meetings; report to the Implementation Committee on any issues arising; and to help assess the impact of the South East APJ, including recommending indicators and targets for actions contained in the Plan as appropriate.

South East Regional Skills Forum	South East Action Plan for Jobs
<p>Action 2.2 Develop effective means of promoting and communicating the range of services and supports available from HE and FET to employers.</p> <p>2.2.1 Utilise web, particularly www.regionalskills.ie, e-newsletter and other media as well as providing content through existing channels to employers.</p> <p>2.2.2 Develop resources including case studies in conjunction with HE and FET providers to highlight the opportunities for access and progression through education and training leading to employment that are relevant to the south east. This is currently the focus of the MEND Strand 3 'AIRO' Project and is expected to be rolled out nationally in 2017.</p> <p>2.2.3 Highlight and promote existing information resources e.g. www.careersportal.ie, www.fetchcourses.ie; www.qualifax.ie; www.apprentices.ie and provider websites.</p> <p>2.2.4 Investigate how employers could best access information from education and training providers and recommend improvements.</p> <p>Targeted Outcome: Targeted employers are aware they can access the necessary services and supports from HE and FET providers.</p>	<p>A number of sectoral workshops and stakeholder meetings have been held to progress actions and to further develop the South East APJ process, including:</p> <ul style="list-style-type: none"> • Pharma and Life Sciences; Engineering; and Global Business Services and ICT Workshops held in Waterford; • Small and Artisan Food; Getting More Innovative Start-ups; and Creative Industries Workshops held in Carlow; • Regional Branding; and Tourism Workshops held in Clonmel; • Regional Meetings of key Stakeholder agencies to consider: progressing actions relating to the Engineering sector; progressing actions relating to the Design and Creative Industries sector; developing a regional network of greenways and blueways in the south east; and organising a regional showcase of the key employment sectors in the region. <p>The Workshops and Stakeholder Meetings have been attended by the main development agencies, entrepreneurs and business people. Reports including recommendations have been compiled for each of the Workshops and Meetings. The many ideas and suggestions put forward are being incorporated into the actions to be delivered in the Plan.</p>
<p>Action 2.3 Help industry to engage in greater workforce development of employees.</p> <p>2.3.1 Support and encourage employers to increase the level of support for training and up-skilling of employees. (Links with Action 170 of SEAPJ)</p> <p>2.3.2 Promote the adoption of 'Continuous Professional Development' (CPD) across six identified industry sectors.</p> <p>2.3.3 Promote initiatives that support workforce development including Skillnets, Springboard and others.</p> <p>Targeted Outcome: The level of knowledge about workforce development amongst targeted sectors and employers has increased (how to measure?)</p>	

South East Regional Skills Forum	South East Action Plan for Jobs
<p>Action 2.4 Explore opportunities with employers for additional 'work based learning' (under graduate work placement, traineeships and apprenticeships)</p> <p>2.4.1 Collate the latest developments from the Apprenticeship Council and for Traineeships and present to employers. Determine current levels of apprenticeships and traineeships.</p> <p>2.4.2 Identify areas for new apprenticeships and traineeships. (Links with Action 164 of SEAPJ).</p> <p>2.4.3 Agree a number of regional events to promote apprenticeships and traineeships and under graduate work placement. (Links with Action 61 of SEAPJ).</p> <p>Targeted Outcome: The number of apprenticeships and traineeships in the south east has increased (need to set targets with stakeholders)</p>	<p>Working Closely with Regional Skills Forum</p> <p>The South East APJ has developed close working relationships with the South East Regional Skills Forum. Edmond Connolly was appointed Manager of the Forum in April, 2016 and he and Sean McKeown, Director of the South East APJ are working on a number of joint initiatives aimed at helping to meet the skills needs of industry in the region. These include:</p> <ul style="list-style-type: none"> • a Pharma MedTech Skills Survey being undertaken by Dr June Frisby of the major employers in these sectors in the region; and • a Pilot Engineering Career Traineeship in conjunction with the ETBs in the region.

South East Regional Skills Forum	South East Action Plan for Jobs
<p>Objective 3. Greater collaboration and utilisation of resources across the education and training system and enhancement of routes for learners into employment and / or further education.</p> <p>Action 3.1 Support collaboration across education and training and enhancement of routes for learners.</p> <p>3.1.1 Support and facilitate education and training providers to collaborate to meet the training and skills needs of employers where appropriate.</p> <p>3.1.2 Support education and training providers to better promote 'Pathways to Employment' to learners including better awareness of tools and resources for learners.</p> <p>Targeted Outcome: Higher Education and Further Education and Training Providers better utilise resources through collaboration.</p> <p>Objective 4. A structure for employers to become more involved in promoting employment roles and opportunities for career progression in their sectors.</p> <p>Action 4.1 Showcase employment opportunities in the region.</p> <p>4.1.1 In collaboration with SEAPJ identify and develop a high profile initiative(s) which will showcase career opportunities across the south east. (Links with Action 12 of SEAPJ).</p> <p>4.1.2 Support initiatives which showcase employment opportunities in the region. (Links with Action 94 of SEAPJ).</p> <p>Targeted Outcome: Career opportunities in industry across the region are widely promoted.</p>	

South East Regional Skills Forum	South East Action Plan for Jobs
<p>Action 4.2</p> <p>Career initiatives.</p> <p>4.2.1 Highlight, support and encourage industry engagement with schools, FET and HE. (Links with Action 105 of SEAPJ)</p> <p>4.2.2 Develop and promote video clips of individuals educated in the south east pursuing careers in industry in the south east. Utilise social media to showcase careers/ videos.</p> <p>4.2.3 Engage with ETPG careers officers and support them with information about in-demand career opportunities across identified sectors.</p> <p>Targeted Outcome:</p> <p>Career advice is supported by accurate information on employment opportunities and skills needs.</p>	

Table 5.2 South East Regional Skills Forum Action Plan January – June 2017

Objective	Actions	Sub Actions	Jan	Feb	Mar	Apr	May	Jun	Outcome		
More robust labour market information and analysis of employer needs to inform programme development	1.1	Identify, collate and promote identified current and future training and skills needs of employers	1.1.1	Summarise and present to educators, data from SLMRU (available on www.regionalskills.ie) and the Expert Group on Future Skills Needs and others identifying skills needs.	Prepare update on labour market in SE	Collate & promote as additional information is gathered & obtained	Collate & promote as additional information is gathered & obtained	Collate & promote as additional information is gathered & obtained	Collate & promote as additional information is gathered & obtained	The current and future skills needs of enterprise in the south east, in so far as is possible, is clearly understood by all key stakeholders	
			1.1.2	Sectoral Skills Audits - Conduct skills needs audits where necessary. Utilise existing and ongoing research and information relevant to current and future skills needs where available. In conjunction with SEAPJ and in line with their six identified economic sectors, collaborate in a skills audit of each sector.	Conduct Biopharma/ Medtech Workshop to identify responses to skills shortages		Conduct Construction Workshop to identify responses to skills shortages		Conduct Global Business Services Workshop to identify responses to skills shortages		
			1.1.3	Work with LEOs, EI, IDA and other representative bodies in identifying and meeting their clients skills needs and communicate to education & training providers	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing		Ongoing
			1.1.4	Communicate feedback from the SEAPJ in relation to skills needs and present to HE & FET providers.	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing		Ongoing
			1.1.5	Engage with recruitment consultants in the region & monitor online recruitment services to build a picture of emerging labour market demands		S/W recruitment consultants to determine best means of measuring regional vacancies on an ongoing basis	Promote via comms plan	Promote via comms plan	Promote via comms plan		Promote via comms plan
	1.2	Promote career opportunities, access and progression and life-long learning to learners	1.2.1	Provide resources on career opportunities where there are skills deficits to second level through Guidance Councillor networks and other.	Issue CDs with videos on Career opportunities in SE to second level school guidance counsellors	Include ongoing relevant items in eNewsletter & website	Include ongoing relevant items in eNewsletter & website	Include ongoing relevant items in eNewsletter & website	Include ongoing relevant items in eNewsletter & website	Career opportunities that are available in the south east are widely promoted to learners and their families	
			1.2.2	Highlight the opportunities and need for more learners to pursue science, technology, engineering and maths (STEM) subjects	Consider career promotion event in SE in conjunction with SEAPJ	Encourage employer representative organisations to organise regional initiatives	Link in with Engineers Week in IoTs				

Objective	Actions	Sub Actions	Jan	Feb	Mar	Apr	May	Jun	Outcome			
Help employers connect with the range of services and supports available across the education and training system	2.1	Establish strong links with employers	2.1.1	Engage directly with industry and through their representative bodies and other networks to determine skills needs and implement appropriate responses	Build contacts on CRM to add 400 target companies	Continue to grow employer circulation base	Continue to grow employer circulation base	Continue to grow employer circulation base	Continue to grow employer circulation base	Employers in targeted sectors believe that their skills needs are being satisfactorily addressed		
			2.1.2	Establish strong formal links with employers through the South East Action Plan for Jobs	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing		Ongoing	
	2.2	Develop effective means of promoting and communicating the range of services & supports available from HE & FET to employers	2.2.1	Utilise web particularly www.regionalskills.ie, e-newsletter and other media as well as providing content through existing channels to employers	Regular updates & communications in line with comms plan	Regular updates & communications in line with comms plan	Regular updates & communications in line with comms plan	Regular updates & communications in line with comms plan	Regular updates & communications in line with comms plan	Regular updates & communications in line with comms plan	Targeted employers are aware they can access the necessary services and supports from HE & FET providers	
			2.2.2	Develop resources including case studies in conjunction with HE & FET providers to highlight the opportunities for access and progression through education and training leading to employment that are	Case studies to be promoted as examples of best practice to industry via eNewsletter, web and elsewhere							
			2.2.3	relevant to the south east. This is currently the focus of the MEND Strand 3 'AIRO' Project and is expected to be rolled out nationally in 2017.	Via comms plan	Via comms plan	Via comms plan	Via comms plan	Via comms plan	Via comms plan		
			2.2.4	Highlight and promote existing information resources e.g. www.careersportal.ie, www.fetchcourses.ie; www.qualifax.ie; www.apprentices.ie		Seek employer feedback	Review & make recommendations					
	2.3	Help industry to engage in greater workforce development of employees	2.3.1	Investigate how employers could best access information from education & training providers and recommend improvements.	Promote per comms plan	Promote per comms plan	Promote per comms plan	Promote per comms plan	Promote per comms plan	Promote per comms plan	The level of knowledge about workforce development amongst targeted sectors and employers has increased (how to measure?)	
			2.3.2	Support and encourage employers to increase the level of support for training and up-skilling of employees.		Revised existing level of CPD in each sector	Discuss means of growing level of CPD in each sector					
			2.3.3	Promote the adoption of 'Continuous Professional Development' (CPD) across six identified industry sectors.	Include per comms plan	Include per comms plan	Include per comms plan	Include per comms plan	Include per comms plan	Include per comms plan		
	2.4	Explore opportunities with employers for additional 'work based learning' (traineeships & apprenticeships)	2.4.1	Promote initiatives that support workforce development including Skillnets, Springboard and others.	Monitor progress & communicate per comms plan	Monitor progress & communicate per comms plan	Monitor progress & communicate per comms plan	Monitor progress & communicate per comms plan	Monitor progress & communicate per comms plan	Monitor progress & communicate per comms plan	The number of apprenticeships and traineeships in the south east has increased (need to set targets with stakeholders)	
			2.4.2	Collate the latest developments from the Apprenticeship Council and for Traineeships and present to employers. Determine current levels of apprenticeships and traineeships in the south east.	Encourage the provision of new apprenticeships in SE with ITC and WIT	Encourage the provision of new apprenticeships in SE with ITC and WIT	Encourage the provision of new apprenticeships in SE with ITC and WIT					
			2.4.3	Identify areas for new apprenticeships & traineeships								

Objective	Actions	Sub Actions	Jan	Feb	Mar	Apr	May	Jun	Outcome		
Greater collaboration and utilisation of resources across the education and training system and enhancement of routes into employment &/or further education for learners	3.1	Support collaboration across education and training and enhancement of progression routes for learners	3.1.1	Support and facilitate education and training providers to collaborate to meet the training and skills needs of employers where appropriate		Identify & promote subject areas where ETBs can develop programmes that have a clear pathway to HE	Ongoing	Ongoing	Ongoing	Higher Education and Further Education & Training Providers better utilise resources through collaboration	
			3.1.2	Support education & training providers to better promote 'Pathways to Employment' to learners including better awareness of tools and resources for learners.		Research developing tool to present career information based upon Careers Portal data	Highlight pathways to employment to learners and guidance counsellors	Highlight pathways to employment to learners and guidance counsellors	Highlight pathways to employment to learners and guidance counsellors		Highlight pathways to employment to learners and guidance counsellors
A structure for employers to become more involved in promoting employment roles and opportunities for career progression in their sectors	4.1	Showcase employment opportunities in the region	4.1.1	In collaboration with SEAPJ identify and develop a high profile initiative(s) which will showcase career opportunities across the south east.	In conjunction with SEAPJ engage with enterprise in region to develop strategy to show case SE	Continued	Continued	Continued	Continued	Career opportunities in industry across the region are widely promoted	
			4.1.2	Support initiatives which showcase employment opportunities in the region	Promote careers videos to second and third level guidance counsellors	Continued	Support career initiatives of ITC, WIT & LIT	Work with employer representative bodies to improve & develop initiatives			
	4.2	Career initiatives	4.2.1	Highlight, support and encourage industry engagement with schools, FET & HE	Promote case studies of good practice of ER/HE/FET engagement	Promote case studies of good practice of ER/HE/FET engagement	Promote case studies of good practice of ER/HE/FET engagement			Career advice is supported by accurate information on employment opportunities and skills needs	
			4.2.2	Develop & promote video clips of individuals educated in the SE pursuing careers in industry in the SE. Utilise social media to showcase career opportunities.	Promote per comms plan	Promote per comms plan	Promote per comms plan	Promote per comms plan	Promote per comms plan		Promote per comms plan
			4.2.3	Engage with ETPG careers officers & support them with information about in-demand career opportunities across identified sectors.		Ongoing based upon feedback from employer workshops	Ongoing based upon feedback from employer workshops	Ongoing based upon feedback from employer workshops	Ongoing based upon feedback from employer workshops		Ongoing based upon feedback from employer workshops

Table 5.3 Mapping of South Regional Cluster objectives with representative South East APJ and South East RSF actions and objectives in 2016.

South Regional Cluster objective(s)	South East Action Plan (APJ) for Jobs	Regional Skills Fora (RSF) objective(s)	Sample of Action taken by South East RSF
<ul style="list-style-type: none"> • Increase the capacity and responsiveness of the Irish higher education system, particularly in the South Region; • Deepen partnerships and collaborations among the cluster higher education Institutions; • Provide improved progression pathways between higher education institutions; • Enhance co-operation across the cluster higher education institutions in support of regional economic, social and cultural development; • Build on existing successes in the areas of course development, collaborative research, entrepreneurship and innovation. 	<p>Action 162 Establish a Regional Skills Forum in the South East to undertake a structured programme of activities to promote closer liaison between employers and the education system and prioritise strengthening the outreach activities of education providers in the region, including strengthened industry liaison functions generally and develop structured programmes of awareness; raising of the capabilities and assets available to enterprises in the region; and develop common projects so as to best deliver on the skills requirements of the region.</p>	<p>National (DES) objectives for regional fora</p> <ul style="list-style-type: none"> • Foster better engagement between DES providers (ETBs, Institutes of Technology, Universities, Skillnets) employers and other regional stakeholders in building the skills of their regions; • Provide a framework to enhance and support individual education and training providers and groups of providers in establishing and maintaining connections and relationships with employers; • Focus on building more robust labour market intelligence and analysis of employer needs. 	<p>South East Regional Skills Forum established in 2015. RSF manager took up appointment in May 2016.</p> <p>The SERSF provides a formal platform for employers to engage with Institute of Technology Carlow and the other educational providers in the region and give input and guidance into course content and delivery. In particular, the links with the Faculty's including the Faculty of Life Long Learning and industry are being enhanced.</p>
<ul style="list-style-type: none"> • Enhance co-operation across the cluster higher education institutions in support of regional economic, social and cultural development; • Build on existing successes in the areas of course development, collaborative research, entrepreneurship and innovation. 	<p>Action 58: Increase, as appropriate, capacity for training of apprentices for construction as the sector recovers, together with addressing the continued need for upskilling of craft persons and training for the unemployed. Actions e.g., 28, 39 and 50: Each named action refers to developing the skills base in the region for different industry sectors, in partnership with FET and HEIs, to provide programmes to support and develop these sector (s).</p>	<p>Objective 1: Provide more robust labour market information and analysis of employer needs to inform programme development.</p> <p>Objective 3: Greater collaboration and utilisation of resources across the education and training system and enhancement of routes for learners into employment and / or further education.</p>	<p>Summarised and presented to educators, data from SLMRU (available on www.regionalskills.ie), the Expert Group on Future Skills Needs and others identifying skills needs.</p> <p>The South East RSF has identified, in association with the South East APJ implementation committee, six economic sectors which are of strategic importance to the region and where there are identified skills shortages, namely:</p> <ul style="list-style-type: none"> - Pharmaceutical and medical devices - Engineering sector - Agri / food sector - Construction sector - Global business services sector - Hospitality and tourism sector <p>Stakeholder meetings have been held with each of these between November 16 and May 17 with a view to identifying programme gaps across all levels of the NFQ involving FET and HET providers.</p>

South Regional Cluster objective(s)	South East Action Plan (APJ) for Jobs	Regional Skills Fora (RSF) objective(s)	Sample of Action taken by South East RSF
<ul style="list-style-type: none"> • Provide improved progression pathways between higher education institutions; • Deepen partnerships and collaborations among the cluster higher education Institutions. 		<p>Objective 3: Greater collaboration and utilisation of resources across the education and training system and enhancement of routes for learners into employment and / or further education.</p>	<p>Stakeholder meetings have been held with each of these between November 16 and May 17 with a view to identifying programme gaps across all levels of the NFQ involving FET and HET providers and with improving progression pathways between providers. Institute of Technology Carlow in the past year has signed 34 formal agreements with FET providers.</p>
<ul style="list-style-type: none"> • Increase the capacity and responsiveness of the Irish higher education system particularly in the South Region; • Enhance co-operation across the cluster higher education institutions in support of regional economic, social and cultural development. 	<p>Action 61: Develop a showcase of the region's manufacturing base, with a dual focus on attracting young people to careers in manufacturing. The skills demand is for a mix of apprenticeships and third/fourth level qualifications. Manufacturing companies to promote more STEM participation in primary and secondary schools.</p>	<p>Objective 2: Help employers connect with the range of services and supports available across the education and training system.</p> <p>Objective 4: A structure for employers to become more involved in promoting employment roles and opportunities for career progression in their sectors.</p>	<p>Careers of the future event held in Kilkenny 5/12/16</p> <p>South East Regional Skills Forum 'Careers of the Future' event held in Kilkenny on the 5th December 2017. The showcase provided a large audience with insights into career prospects across a variety of industry sectors that have significant job opportunities in the region. A panel discussion, chaired by Miriam O'Callaghan, heard from employers representing the key industry sectors identified through the South East Action Plan for Jobs: pharmaceuticals and biotechnology; agriculture and food, engineering and construction, hospitality, ICT and global business services. The discussion followed the launch of a video by the South East RSF highlighting the careers of eleven individuals who have developed their educational and professional skills in the south east.</p> <p>Pharma and Medtech research presented to the SERSF in February 2017.</p>

APPENDIX 6

RESEARCH AND INNOVATION – CITATION/RESEARCH METRICS, DEVELOPMENTS SINCE SDC3 AND REPRESENTATIVE RDI INITIATIVES AND MILESTONES

CITATION/RESEARCH IMPACT METRICS

There are many metrics that can be used in order to assess the impact and quality of research outputs and, in particular, publications in peer-reviewed journals. One approach is to use many of the tools available from scientific publishers to assess citation rate, impact etc. These all present caveats and may be limited by certain publishers' data. For the purpose of this report, we used the SciVal system¹ from Elsevier to explore the impact and quality of our publications. It is recommended that more than one metric is used to explore impact with three metrics being considered appropriate. A metric, of particular interest to Institutions at our level of Research development is the Field-Weighted Citation Impact (FWCI) which is the ratio of the total citations actually received by the denominator's output, and the total citations that would be expected based on the average of the subject field.

A Field-Weighted Citation Impact of:

- Exactly 1 means that the output performs just as expected for the global average
- More than 1 means that the output is more cited than expected according to the global average; for example, 1.25 means 25% more cited than expected
- Less than 1 means that the output is cited less than expected according to the global average.

¹ SciVal is based on output and usage data from Scopus, the world's largest abstract and citation database for peer-reviewed publications. The Scopus database covers over 30 million publications from 1996 until the present: 21,000 serials from 5,000 publishers. These include: 20,000 peer-reviewed journals, 390 trade publications, 370 book series, 5.5 million conference papers. Additionally, SciVal uses usage data from ScienceDirect the world's largest scientific full text database with more than 2,500 journals and 26,000 books.

Over the time period of this evaluation (2011-2016) the IoTs (as a group) have a FWCI of 1.19 indicating their publications are 19% more cited than would be expected. The FWCI for Institute of Technology Carlow over this time period is 1.59 (this has increased from 1.19 in the 2016 report). FCWI values and other metrics are shown below in Table 6.1 for all the IoTs and selected National and International universities. Other useful metrics that are presented in Table 6.1 include:

Publications in the top world journals

The set of an entity's publications that have been published in the world's top journals. Here it can be seen how many of Institute of Technology Carlow's publications are in the top 10% journals worldwide, as measured by SJR. SJR (SCImago Journal Rank) - This measures the prestige of citations received by a journal. The subject field, quality and reputation of the citing journal have a direct effect on the value of a citation.

Collaboration

The extent of international, national and institutional co-authorship

The benchmarking exercise presented in Figure 6.1 compares a number of Institutes and Universities with Institute of Technology Carlow for three metrics, FWCI, Field Weighted Views Impact (FWVI), and publications in the top 10% of Journals. Interestingly Institute of Technology Carlow scores highly with respect to FWCI and FWVI.

Field-Weighted Views Impact

The ratio of views relative to the expected world average for the subject field, publication type and publication year.

Additional Notes

Metrics change depending on the time period that is being evaluated. Table 6.2 and Figure 6.2 shows the same metrics but over a narrower time scale (2013->2016).

Table 6.1 SciVal Metrics for 2011-2016 period

Institute	Field-Weighted Citation Impact	Pubs in top journal percentiles (SJR)	International collaboration	Outputs in top 10% most cited worldwide
Institute of Technology Carlow	1.59	19.3	37.8	10.1
All IoTs	1.19	20.9	45.4	11.6
WIT	1.24	17	46.4	10.7
GMIT	1.33	37.4	62.6	21.7
DKIT	0.97	20.7	47.7	7.7
AIT	1.06	6.4	32.5	7.6
LYIT	0.71	6.1	44.8	1.5
IT Tralee	0.41	3.3	27.6	0
Limerick IT	0.58	9.5	28.6	6.3
UL	1.31	22.6	46.8	12.9
Maynooth	1.37	32.9	51	14.1
DCU	1.28	25.7	51.1	12.9
TCD	1.68	40.4	50	20.3
Ulster University	1.33	26.6	46.8	13.6
University Strathclyde	1.32	32.5	44.5	13.9
MIT	2.5	59.3	44.6	29.5

Table 6.2 SciVal Metrics for 2013-2016 period

Institute	Field-Weighted Citation Impact	Pubs in top journal percentiles (SJR)	International collaboration	Outputs in top 10% most cited worldwide
Institute of Technology Carlow	1.74	20.5	34.2	11.1
All IoTs	1.26	19.9	47.8	12.2
WIT	1.32	14.7	48.1	12.4
GMIT	1.4	34	65	21.8
DKIT	0.96	17.9	48.2	7
AIT	1.06	6.3	38.2	6.5
LYIT	0.62	4.8	57.5	0
IT Tralee	0.23	4.5	27.7	0
Limerick IT	0.61	9.6	27.5	9.1
UL	1.35	22.6	47.7	13.7
Maynooth	1.38	31	51.7	13.2
DCU	1.31	24	53.2	12.9
TCD	1.67	40.2	52	19.9
Ulster University	1.24	27.9	49.1	13.9
University Strathclyde	1.37	31.4	47.7	14.4
MIT	2.47	59.6	46.5	29

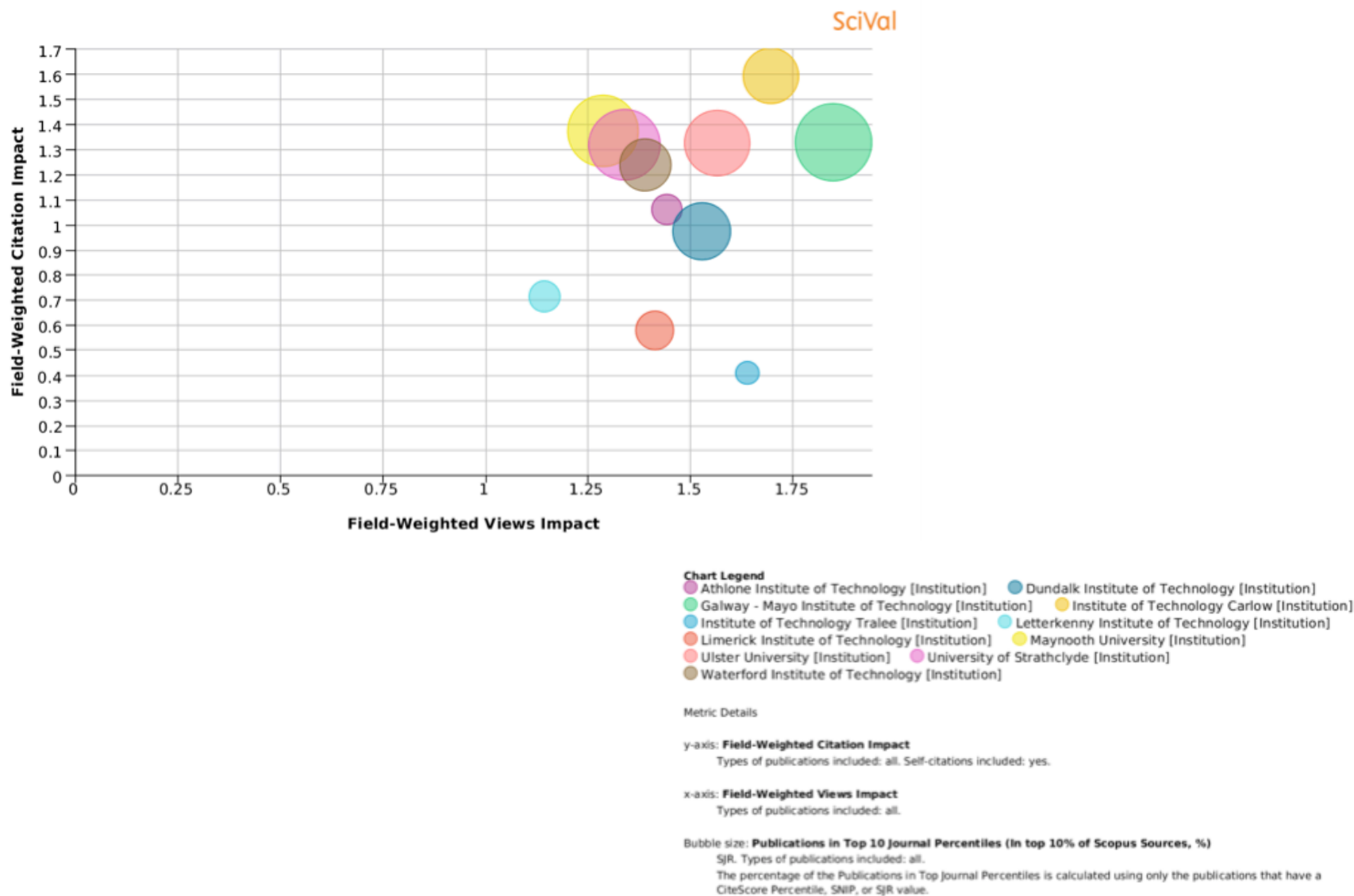


Figure 6.1 Chart showing three key comparator metrics for Institute of Technology Carlow and selected IoTs and Universities for 2011-2016 period.

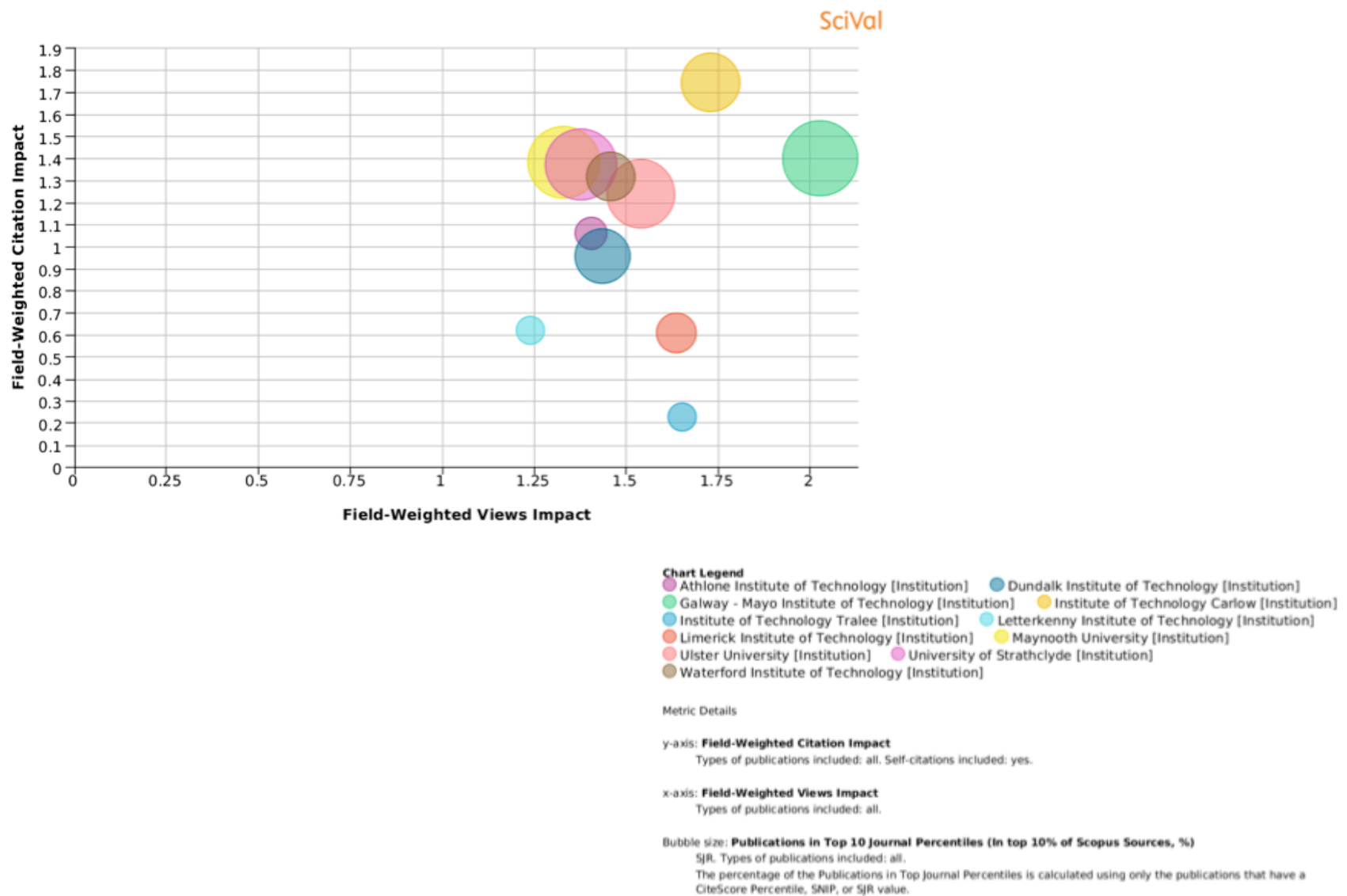


Figure 6.2 Chart showing three key comparator metrics for Institute of Technology Carlow and selected IoTs and Universities for 2013-2016 period.

Developments in RDI at Institute of Technology Carlow since Strategic Dialogue Cycle 3

Context

As summarised in Section 4, Institute of Technology Carlow's research development is underpinned by ongoing strategic investment in institutional infrastructure and personnel and policy developments that have been designed to accelerate progress towards meeting ambitious targets for research and knowledge exchange. These are shaped by established institutional strengths, closely aligned to National and European priorities and Institute of Technology Carlow's own values and integrated vision for 'knowledge in action'. They embrace the wider teaching and regional engagement mission are embedded across all disciplines and award levels and are ultimately focused on the generation of innovation, creation of opportunity and the building of value in the regional economy. The Institute has a clear recognised international standing in strategic research areas, offering continued focus on areas that have potential for the regional economy and identified for prioritisation at National or European level.

The strategy for research takes an integrated approach. It is a key driver in informing and shaping graduates and is embraced by a wide portfolio of teaching programmes that emphasise self-directed learning and development of the research skills for all learners. It is a core principle of 'knowledge in action' that our research is not an esoteric or reserved activity, peculiar to a small separate group, but rather an open and embracing activity that contributes to a wider teaching and regional

engagement agenda. The Institute of Technology Carlow Strategic Plan for Research and Innovation 2016-2020 seeks to:

- Build upon existing areas of strength;
- Further enhance research capacity;
- Develop new and emerging nodes of expertise;
- Align research activity to key strategic themes;
- Map research activity to areas identified by National and EU Prioritisation.

Through implementation of this plan, the institute aims to build research environments with critical mass, high ambition and strong international networks whilst accelerating progress towards reaching key metrics for Technological University designation. The Institute has completed and published a mid-term review of its Strategic Plan 2014-2018 and identified the following specific Research and Innovation priorities for 2017-2018:

- To build on the Centre of Research and Enterprise (CORE) Director's programme and to strengthen the Design+ Gateway to support our enterprise partnerships with SMEs and MNCs
- To achieve level 10 Delegation Awarding Authority for Health Sciences and Humanities
- To develop pathways for achievement of Delegation of Awarding Authority at Level 10 in Design and Humanities
- To formulate a structure for a cross-cluster graduate school to enhance the quality of postgraduate research education through the introduction of structured training and education in accordance with the national doctoral framework.
- To increase registered research student numbers and staff active research participation in line with Technological University criteria.

Achievements since Strategic Dialogue Cycle 3

In 2015 the Institute formally established 5 "CORE" targeted research areas: designCORE, healthCORE, enviroCORE, gameCORE and engCORE. Each of these have designated CORE Directors. Within the COREs research is focused around key themes where the Institute has developed significant expertise that is recognised internationally and is reflected in the high impact achieved by research outputs. Within and between the five CORE domains cross-disciplinary activity ensures that a collaborative research culture can thrive.

Research support, travel and conference schemes have been enhanced and research student supports expanded during this period.

The Institute Quality Assurance and Enhancement Policies and Procedures in Research Policy, Development and Enhancement procedures, Ethics in Research Policy, Collaborative Provision and Joint Awards have all been peer reviewed by international expert panels. On foot of this, the Institute achieved Delegation of Awarding Authority to level 9 for all activities.

The Institute has developed and grown its supervisory capacity to 32% by 2016. The number of registered postgraduate research students has increased by 140% in the past five years. Currently there are 85 registered research postgraduate students (2016-17). Enquiry-based learning has been embedded across all programmes and clear pathways from NFQ Level 6 through 10 are being developed across each Faculty.

Academic staff with doctoral qualifications has increased from 18% to 32% in the same period. There has also been a very significant increase in the

number of academic staff undertaking Level 10 postgraduate studies, rising from 2.6% in 2012 to 17.6% in December 2016.

Over the past four years the Institute has developed a broad portfolio of twenty innovative taught masters programmes across a range of discipline areas that encompasses Medical Device Regulatory Affairs; Interaction Design; Built Environment Management; Weapons Ordnance Munitions and Explosive Engineering; Military Engineering Management; Communications Technology Management; Sports Performance Analysis; Digital Marketing; Financial Services; Insurance and Risk; Tourism Marketing; Applied Social Care; Applied Research and Innovation; Data Science and Supply Chain Management. In addition, a number of industry collaborative research studentships have been put in place in the Science and Computing discipline areas.

The Institute has put in place a programme for Adjunct and Visiting Fellows and a number of both academic and industry based appointments have been made across a number of Faculties and Programmes.

Collaboration with new partners has facilitated the growth in the numbers of enterprises supported through knowledge creation and knowledge transfer. 2016 saw the continued strengthening of Knowledge Transfer (KT) activity at Institute of Technology Carlow under Knowledge Transfer Ireland's (KTI) Technology Transfer Strengthening Initiative 2 (TTSI2). Institute of Technology Carlow is part of the Maynooth University led 'A' rated consortia. There was noticeable operational impact through establishing a stronger KT pipeline with structured case management yielding an increased percentage of larger value projects (Innovation

Partnerships and Commercialisation funds) and repeat business projects. Greater institutional awareness of KT objectives has led to more industry engagement and funding applications from academics including proposals submitted to the Ireland-Wales Programme 2014-2020 (BUCANIER approved, €2.9M), Erasmus+, North West Europe Interreg Programme and the Irish Research Council Employment Based Postgraduate Programme. Institute of Technology Carlow continues to be one of the top providers of Innovation Vouchers.

The launching of the Design+ Technology Gateway in January 2016 provides a further platform for industry interaction and knowledge transfer. Design+ acts as a portal for industry to access the applied research facilities at the institute to deliver near to market solutions in applied design, ICT, engineering and bio-science. Design+ is part of a nationwide network of 15 Technology Gateways – an Enterprise Ireland initiative in partnership with the Institutes of Technologies.



Institute of Technology Carlow with Maynooth University and Athlone Institute of Technology has jointly secured funding for a Managed Consultancy Pilot Programme, which is a new KTI initiative. The strategic objective of the pilot is to extend the range of ways in which industry (and other organisations) can benefit from access to the broad knowledge and expertise in our institutes and to have this managed in a way that ensures ease of access, ease of transaction and simplicity and consistency in the process.



Under TTSI3, which commenced in January 2107, Institute of Technology Carlow will focus on value-add via the creation of more high potential spin-outs with a greater proportion of spinouts turning into High Performance Start-ups (HPSU); a greater proportion of new opportunities converting to licences; more commercially attractive IP and deeper IP portfolios; increased visibility for industry of commercial opportunities in 3rd level institutes; swift and simplified transactions between institutes and industry; and finally, increased revenue from industry to the research base and has recently been awarded an Enterprise Ireland Innovation Partnership, following on from receiving an Enterprise Ireland Commercialisation Award in 2016.

The National Doctoral Framework has identified a range of core attributes that research students “acquire” as outcomes of their research programme. To develop these core skills and to help fashion and refine a distinctive and valuable set of attributes a core programme of modules has been developed to assist researchers in realising their potential in these areas.

The Institute’s Research Ethics policy, procedures and associated documentation provide a governance and management structure that fosters and safeguards a robust research culture and governance framework for all research led activity. These policies have been informed, inter alia, by the 2014 National Policy Statement on Ensuring Research Integrity in Ireland.

Figure 6.3 Representative RDI Key Initiatives and Milestones 2012 – 2016.

<p>2017</p>		<p>€2.9 million BUCANIER Programme - EU-funded scheme to support small businesses in Ireland and Wales. The BUCANIER (Building Clusters and Networks in Innovation, Enterprise and Research) project sees the Institute join forces with Bord Iascaigh Mhara (BIM), Wexford County Council, Swansea University and Pembrokeshire and Carmarthenshire County Councils in Wales to help boost trade and provide specialist support to help businesses design and develop new products and services. The project will work in key growth sectors of the Welsh and Irish economies, including food and drink, life sciences and renewable energy.</p>
<p>2017</p>	<p>Institute hosts All Ireland Postgraduate Conference in Sport Science, Physical Activity and Physical Education.</p>	

<p>2017</p>		<p>Institute hosts EUROAVIA international conference for European aerospace students</p> <p>EUROAVIA is the European Association of Aerospace Students.</p>
<p>2016</p>	<p>healthCORE postgraduate researchers Wins International Sports Science Award: Youth on the MOVE (YOTM) prize, an initiative of the International Sports and Culture Association.</p>	
<p>2016</p>	<p>Boston Scientific gifts high-tech equipment to Institute of Technology Carlow for teaching and research excellence; specifically, BeamWorks laser equipment and Leica microscopes, worth in excess of €100,000.</p>	

2016	<p>Institute of Technology Carlow Doctoral student wins ESAI Postgraduate Researcher of the Year 2016.</p>	
2016		<p>Institute hosts MIDAS conference on the Aerospace Industry. MIDAS is an industry-led cluster of industry, educational, research and government agencies, working together to assist in the development of the micro and nano-electronics based systems sector in Ireland. It is a member of Silicon Europe, the alliance of Europe's leading micro and nano-electronics clusters.</p>
2016	<p>New Institutional Research Strategy 2016-2020.</p>	
2016	<p>Validation and implementation of National Doctoral Framework formal structured training programme for supervisors.</p>	
2016	<p>Validation and implementation of National Doctoral Framework Structured modules for PhD Programmes.</p>	

2016



Institute of Technology Carlow Doctoral Postgraduate Researcher Wins World's Largest Agriscience Competition - *Alltech Young Scientist Graduate Award 2016*.


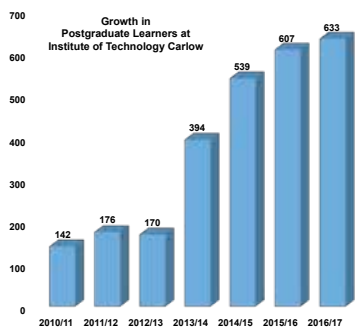
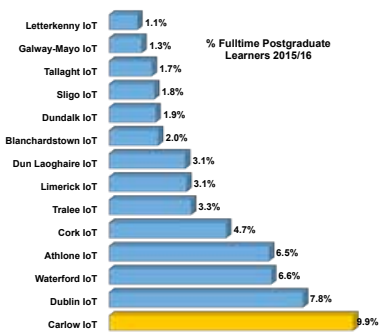


2016



International Society for Performance Analysis of Sport (ISPAS) International Workshop organised by and hosted at Institute of Technology Carlow.



<p>2016</p>	<p>Quinquennial Stage 2 Review across all Faculties, Centres and Campuses including review of research programmes.</p>	
<p>2016</p>	 <div data-bbox="562 1091 869 1193" style="background-color: #c00000; color: white; padding: 5px; margin-top: 10px;"> <p>GOAL 2 Knowledge Creation, Application and Exchange</p> </div>	<p>Mid-term review of Institutional Strategic Plan including RDI Goals.</p>

2016	New Enterprise Support Programmes focussed on clusters and networks / new product and process development in key sectors.	 <p>Regional and Programmatic Development – Enterprise and Innovation in Action</p> <p>INSPIRE INTERREG Project Initiating pathways for Innovators, Researchers and Entrepreneurs</p> <p>CATALYST Project New process and product development- Life Sciences and Food & Drink Sectors</p> <p>BUCANIER Project Building Clusters & Networks in Innovation, Enterprise and Research – Food & Drink, Life Sciences and Renewable Energy</p>																																														
2012-2016	 <p>Growth in Postgraduate Learners at Institute of Technology Carlow</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Number of Learners</th> </tr> </thead> <tbody> <tr><td>2010/11</td><td>142</td></tr> <tr><td>2011/12</td><td>176</td></tr> <tr><td>2012/13</td><td>170</td></tr> <tr><td>2013/14</td><td>394</td></tr> <tr><td>2014/15</td><td>539</td></tr> <tr><td>2015/16</td><td>607</td></tr> <tr><td>2016/17</td><td>633</td></tr> </tbody> </table>  <p>% Fulltime Postgraduate Learners 2015/16</p> <table border="1"> <thead> <tr> <th>Location</th> <th>Percentage</th> </tr> </thead> <tbody> <tr><td>Letterkenny IoT</td><td>1.1%</td></tr> <tr><td>Galway-Mayo IoT</td><td>1.3%</td></tr> <tr><td>Tallaght IoT</td><td>1.7%</td></tr> <tr><td>Sligo IoT</td><td>1.8%</td></tr> <tr><td>Dundalk IoT</td><td>1.9%</td></tr> <tr><td>Blanchardstown IoT</td><td>2.0%</td></tr> <tr><td>Dun Laoghaire IoT</td><td>3.1%</td></tr> <tr><td>Limerick IoT</td><td>3.1%</td></tr> <tr><td>Tralee IoT</td><td>3.3%</td></tr> <tr><td>Cork IoT</td><td>4.7%</td></tr> <tr><td>Athlone IoT</td><td>6.5%</td></tr> <tr><td>Waterford IoT</td><td>6.6%</td></tr> <tr><td>Dublin IoT</td><td>7.8%</td></tr> <tr><td>Carlow IoT</td><td>9.9%</td></tr> </tbody> </table>	Year	Number of Learners	2010/11	142	2011/12	176	2012/13	170	2013/14	394	2014/15	539	2015/16	607	2016/17	633	Location	Percentage	Letterkenny IoT	1.1%	Galway-Mayo IoT	1.3%	Tallaght IoT	1.7%	Sligo IoT	1.8%	Dundalk IoT	1.9%	Blanchardstown IoT	2.0%	Dun Laoghaire IoT	3.1%	Limerick IoT	3.1%	Tralee IoT	3.3%	Cork IoT	4.7%	Athlone IoT	6.5%	Waterford IoT	6.6%	Dublin IoT	7.8%	Carlow IoT	9.9%	Increase in postgraduate learners numbers across 2010/11 to 2016/17.
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2016	External review and approval of Policy, Procedures and QA for provision of Joint, Collaborative and Transnational Research Programmes to Level 9 in all areas																																															
2016	Provision of additional scientific and technical research lab space for EngCORE.																																															

<p>2015</p>	<p>Microgen Biotech Spin-Out Company by Institute of Technology doctoral graduate.</p>	
<p>2014-2016</p>	<p>Validation of 20 new level 9 programmes in targeted priority areas (Entrepreneurship and Innovation, Medical Devices, Pharmaceuticals, Data Science, Fintech, Weapons Systems and Military Engineering)</p>	
<p>2015</p>		<p>DesignCORE initiation and hosting of the Faultlines 'Bridging Knowledge Spaces' inaugural Irish Design Research Conference as part of ID2015 which had a substantial global reach of hits and activity to the online conference portal.</p>

<p>2015</p>	<p>Design + Technology Gateway Established at Institute of Technology Carlow funded by Enterprise Ireland.</p>	
<p>2015</p>		<p>The Irish Signals and Systems Conference (ISSC 2015) organised and hosted by Institute of Technology Carlow involving world renowned keynote speakers from industry and academia including Intel Ireland, Xilinx Inc. and Liverpool John Moores University.</p>

2015	Institute of Technology Carlow Collaborative Provision Conference in Dublin Castle.	
2014-2015		Appointment of eight CORE (Centres of Research and Enterprise) Leaders across Bioenvironmental Technologies, Product Design, Interactive Application and Networks, Engineering and Health following the approval of strategic plans in all areas.
2015	Quinquennial Stage 1 Review across all Faculties, Centres and Campuses including review of research programmes.	
2015	Targeting Research Funding – New Policy Roll-Out on Time Release for Academic Staff.	

2015	<table border="1"> <thead> <tr> <th>Institution</th> <th>Field – Weighted Citation Impact *</th> </tr> </thead> <tbody> <tr> <td>Massachusetts Institute of Technology</td> <td>2.45</td> </tr> <tr> <td>California Institute of Technology</td> <td>2.42</td> </tr> <tr> <td>Institute of Technology Carlow</td> <td>1.82</td> </tr> <tr> <td>Trinity College Dublin</td> <td>1.71</td> </tr> <tr> <td>University College Cork</td> <td>1.42</td> </tr> <tr> <td>University of Ulster</td> <td>1.38</td> </tr> <tr> <td>NUI Maynooth</td> <td>1.30</td> </tr> <tr> <td>University of Strathclyde</td> <td>1.26</td> </tr> <tr> <td>Dublin City University</td> <td>1.23</td> </tr> <tr> <td>Institutes of Technology Ireland (combined)</td> <td>1.10</td> </tr> </tbody> </table> <p>*A Field-Weighted Citation Impact of exactly 1 means that the output performs just as expected for the global average; more than 1 means that the output is more cited than expected according to the global average; less than 1 means that the output is cited less than expected according to the global average.</p>	Institution	Field – Weighted Citation Impact *	Massachusetts Institute of Technology	2.45	California Institute of Technology	2.42	Institute of Technology Carlow	1.82	Trinity College Dublin	1.71	University College Cork	1.42	University of Ulster	1.38	NUI Maynooth	1.30	University of Strathclyde	1.26	Dublin City University	1.23	Institutes of Technology Ireland (combined)	1.10	<p>Postgraduate Research Policy Review completed and externally reviewed – quality assurance and enhancement.</p>
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2015	<p>PhD Scholarships in conjunction with key collaborative partners agreed including Defence Forces and UNUM.</p> 																							

2014		<p>Opening of the newly constructed Dargan Centre for Research and Innovation for the co-location of specialised multidisciplinary research facilities and personnel.</p>
2014	<p>An institute-wide curriculum development strategy to ensure an integrated approach to research activity at all levels of the national framework of qualifications. Strategic reviews conducted across all Faculties and Campuses in 2015 and roll-out via programmatic reviews in 2015/2016.</p>	
2014	<p>Development of new practice-led structured research programmes at Masters and Professional Doctorate level, the first of which will be launched in Jan 2016.</p>	
2014	<p>Development of an adjunct faculty policy for key collaborative partners.</p>	
2014	<p>Institute of Technology Carlow Strategic Plan 2014-2018 developed and launched.</p>	
2013	<p>Establishment of a centralised Postgraduate Studies Support Department and Head of Postgraduate Studies.</p>	
2013	<p>Establishment of a dedicated Research and Commercialisation Support Centre and TTSI Cluster.</p>	
2012	<p>Recruitment, staff development and mentoring programmes to increase research active academics.</p>	
2012	<p>Building research supervisory capacity – Provision of competitive internal research funding programmes including the Presidents Postgraduate Research Fellowship Programme and Conference Support Programme.</p>	

APPENDIX 7

EXAMPLES OF ENGAGEMENT – KNOWLEDGE TRANSFER AND INDUSTRY ENGAGEMENT METRICS 2016 AND 2017/21 TARGETS; VOLUNTEER DAY 2016; LAUNCH OF TECHNOLOGY GATEWAY DESIGN+ 2016; INSPIRE 2016

1. KNOWLEDGE TRANSFER AND INDUSTRY ENGAGEMENT METRICS 2016

Metric (Number of:)	Value	Ref. Source
Research Expenditure (less block grant)	€2,090,887	AKTS 2016 Submitted Report
Collaborative Research Agreements with Industry	70	AKTS 2016 Submitted Report
Consultancy Service Agreements	27	AKTS 2016 Submitted Report
New Spin-in Companies Supported	89	InspR (32), NFP215 (10), NFP116 (33), NF P216(11), LEO (3)
Companies in On-Campus Incubation	22	AKTS 2016 Submitted Report
Total Start-ups Supported	111	(89 + 22)
Invention Disclosures (IDFs)	8	AKTS 2016 Submitted Report
Patents applications filed	1	AKTS 2016 Submitted Report
Active Spin-outs	1	AKTS 2016 Submitted Report
<p>2016 saw the continued strengthening of KT activity at IT Carlow with noticeable operational impact through:</p> <ol style="list-style-type: none"> 1. Establishing a stronger KT pipeline with structured case management yielding an increased percentage of larger value and repeat business projects. 2. Greater institutional awareness of KT objectives leading to more industry engagement and IPP/CF applications from academics. 3. Launching the Design+ Technology Gateway which provides a further platform for industry interaction and knowledge transfer. 		

TTSI3 TARGET METRICS (2017 – 2021)

Metric (Number of:)*	2017	2018	2019	2020	2021
LOAs	2	2	2	2	3
Collaborative Research Agreements <€25k	42	47	52	53	53
Collaborative Research Agreements €25K - €500K	4	4	4	6	6
Collaborative Research Agreements >€500K	1	0	0	0	0
Collaborative Research Agreements (sum of above)	47	51	56	59	59
Consultancy Agreements	2	2	3	3	5
No. of Invention Disclosures (IDFs)	5	5	7	8	10
Patents applications filed	2	2	2	3	3
New Spin-outs	0	1	0	1	0
New Spin-ins Supported**	80	80	85	85	90
<p>IT Carlow will continue to build key additional KT strengths and outputs at ITC to include:</p> <ol style="list-style-type: none"> 1. Increased output on key metrics/KPIs; 2. Increased focus on output quality, especially in terms of driving HPSUs and quality IP licenses; 3. Deeper cross-RPO collaborations in TT and KT; 4. A KT consortium brand to market our joint offerings to industry; 5. A deeper focus on business development and industry collaborations; 6. A widening of TT/KT culture embedding at each of the institutes. 					

*Ref. source: TTSI3 approved application. ** Buc (25), NFP2 (10), NFP1 (30), NF P2+1 (10), LEO (5).

2. VOLUNTEER DAY 2016

RTE's Miriam O'Callaghan today visited Institute of Technology Carlow and officially launched its Volunteer Day. The event saw 25 local, national and international voluntary organisations showcase their work at information stands throughout the college. Students and staff alike were encouraged to use the opportunity to join one or more voluntary group and give back to the community.

In her address to the students and visitors, Dr. Patricia Mulcahy commented, "Education is about developing - socially and personally - as well as academically, so we can take our place in society and make a positive and meaningful contribution".

Arriving at Institute of Technology Carlow, Miriam O'Callaghan went on a tour of the facilities, including the Dargan Centre and new Haughton Building. She was full of praise for the Institute's facilities, in particular the TV studios, saying, "I was in the Primetime studios at RTE last night and there is no difference between that and your own studios so congratulations on your great facilities".

The RTE broadcaster spoke about the importance of giving back to the community and praised the students for their great work as active citizens. Ms. O'Callaghan went on to take part in an informal Q&A session with students undertaking the Media & Public Relations degree course at the Institute and attended lunch with members of staff, before departing in the afternoon.

The launch of Volunteer Day at Institute of Technology Carlow came just as news filtered through that an original tech platform, developed at the



Institute to facilitate refugee inclusion, took the top honours at the second annual Creative Minds social entrepreneurship hackathon sponsored by the U.S. Embassy and Intel in partnership with the DCU Ryan Academy October. Lionra, led by Institute of Technology Carlow student Sinéad Ní Bhrolcháin, is a peer-to-peer platform that facilitates refugee integration through skills exchange and knowledge sharing. Lionra took top honours after a 48-hour hackathon, comprising 100 young innovators from 14 different countries competed to develop ground-breaking solutions to promote refugee inclusion, integration, and self-reliance.

Special mentions were also given at the launch of Volunteer Day, by both Dr. Mulcahy and Miriam O'Callaghan, to students Shane Griffin and Zamiya Mooge. Shane Griffin was winner last year of the Institute of Technology Carlow President's Volunteer Award which was established in association with UNUM and Carlow Volunteer Centre to support the contribution that

students at Institute of Technology Carlow make to their communities. Shane, who graduated from Institute of Technology Carlow with an honours degree in Applied Social Studies, volunteered with the Irish Care Leavers Network. Zamiya Mooge, this year's winner of the President's Volunteer Award, has volunteered with: The African Diaspora Youth Network in Europe; The National Youth Council as an Ambassador for the No Hate Speech movement and with Youth Platform Project in Ireland.

Volunteer Day was held in conjunction with Carlow Volunteer Centre's (CVC) 10th anniversary. In her speech, Dr. Patricia Mulcahy congratulated Carlow Volunteer Centre on its 10th anniversary and thanked Regina Duane and team for their great work. She extended her thanks to the organisers of Volunteer Day, in particular Martin Meagher, Head of the Department of Business at IT Carlow and Father Martin Smith, the Institute's Chaplain.

Dr. Mulcahy also highlighted the Institute's High Performance Entry Scheme which makes out-of-class achievements in active citizenship count towards a place in college. The initiative is the only initiative of its kind in the country to specifically reward aspiring third-level students for outstanding citizenship.

3. LAUNCH OF TECHNOLOGY GATEWAY DESIGN + 2016

An exciting new opportunity for developing businesses in the engineering, ICT and software and biosciences sectors was officially opened at the Institute of Technology, Carlow with the formal opening of the new Design+ Gateway. Funded by Enterprise Ireland, the Design+ Technology Gateway was launched by the Minister of State for Employment and Small Business, Pat Breen T.D.

Business leaders, government agencies, politicians and academics gathered at Institute of Technology Carlow's Haughton Building for the launch of Design+, an interdisciplinary Technology Gateway which will apply industrial design capabilities to developing companies in the engineering, ICT & software and bioscience sectors.

Based at Institute of Technology Carlow's Dargan Centre, the Gateway aims to give companies based in the South-East, Mid-East, Midlands and beyond an opportunity to develop their business through innovative collaborative research and development while networking with industry across the regions.

Design+ forms part of a 15-strong Enterprise Ireland funded Technology Gateway Network across the country. The gateways are located in 11 Institutes of Technology (IoTs) with a proven record in working with Irish industry. The gateway network leverages the industry focused expertise within IoTs, acting as open access points to deliver near-to-market solutions for Irish industry. Since their inception in 2013, the Gateways have delivered more than 1,500 projects to industry with a value of over €15 million.

Speaking at the official launch at Institute of Technology Carlow, Minister Breen said: "I am delighted to launch the Design+ Gateway at Institute of Technology Carlow. This is the latest Gateway to join the national network of 15 Technology Gateways supported by Enterprise Ireland. These Technology Gateways offer specialist knowledge and design solutions for industry across a wide range of areas. I know the Gateways have already proven valuable in providing access for companies and entrepreneurs to the expertise of over 300 researchers and to the specialised equipment and facilities available in our Institutes of Technology. The Design+ Gateway will benefit not only companies based in the midlands, mideast and southeast, but will provide solutions for companies all over Ireland, increasing their competitiveness and facilitating the further development of new product ranges.

"Good design immediately transforms good technology into valuable products. Design has been the poor relation of the research and innovation agenda in Ireland for too long and we need to do something about it. My Department and Enterprise Ireland is currently looking at the issues that need to be addressed to transform the design agenda in Ireland. In short, we need more companies investing more in design on a more continuous basis. Initiatives like the Carlow Gateway will focus on that objective in a practical way."

The Design+ Gateway at Institute of Technology Carlow is led by Ailish Delaney, a business development graduate with over ten years' experience in enterprise support and mentoring. Several industry-focused academic researchers from Institute of Technology Carlow's various faculties and Centres for Research and Enterprise (CORE) will work alongside Ailish



Delaney, including: Mr Colin Deevy and Dr. PJ White from designCORE; Dr. David Dowling and Dr. Thomae Kakouli-Duarte from enviroCORE; Dr. Donnacha Lowney and Dr Dean Callaghan from engCORE; Mr Joseph Kehoe and Dr. Daire O'Broin from gameCORE.

Design+ is receiving almost €250,000 over a two-year period from Enterprise Ireland, by which time it anticipates it will have supported 55 companies. Businesses assisted to date include: Magnetar Medical Devices, providers of an electrical drug delivery patch; Hamstring Solo, a fitness and testing apparatus for professional sports teams; The Wholesome Irish Biltong Company, providers of high protein health snacks.

4. INSPIRE RATHDOWNEY INITIATIVE 2016

Institute of Technology Carlow recently joined collaborative partners Laois County Council, Laois Local Enterprise Office and Laois Partnership to celebrate the completion of the INSPIRE Rathdowney programme to help business development and job creation in the South Laois town.

INSPIRE Rathdowney, which was funded under the Rural Economic Development Zone (REDZ) Pilot Initiative, provided targeted intervention to assist innovators, entrepreneurs, SMEs and people with experiential learning to develop their skills and abilities, with a view to boosting the region's growth and competitiveness. A special event was organised to recognise the efforts of the 32 businesses that took part in the initiative and those who facilitated the project. Certificates were awarded by Institute of Technology Carlow to 17 participants at the closing event.



Declan Doyle, Vice President for Development at Institute of Technology Carlow, acknowledged the success of the project that saw 40 individuals from 32 businesses take part. "INSPIRE Rathdowney has shown what can be achieved when support is made available through the partnership approach of the four agencies working together," he commented.

Brian Ogilvie, Research and Commercialisation Manager at Institute of Technology Carlow presented special awards to six participants of the programme, in recognition of individual achievements. They were:

Best New Product - Seven Acres to Rachel Hardiman and Susan Maxwell

Best New Service - Experiencing Laois to Trudy Earls

Best Business Development - Nicola Smeaton, Make-Up Artist

Best Community Engagement - Connell Breslin, Supervalu Rathdowney

Best Network Engagement - OSE O'Shea Engineering to T.J. O'Shea

Best Technology Proposal - WEBO Ltd to Eamon Bowe

Anne Goodwin, Laois Partnership said the involvement of the Institute was hugely beneficial.

"Access to experts from Institute of Technology Carlow at local level in Rathdowney was critical to the success of this project," she said.

Peadar Casey, Enterprise Development Officer at Institute of Technology Carlow and mentor for the project commented, "For entrepreneurship to work it needs a good combination of focus, discipline and freedom and I believe INSPIRE Rathdowney offered that culture".

In addition to mentoring and training, participants developed their own websites, Facebook pages, pull-ups for promotional purposes and videos as part of INSPIRE Rathdowney.

A number of participants have successfully obtained Enterprise Ireland Innovation vouchers and are currently working with the Institute's enterprise and design experts to develop their businesses further. Members of INSPIRE Rathdowney plan to form a networking group while linking into Laois County Council's Business Support Unit and Laois Partnership.



Scott Kildall (b. 1969), *Energy* (C-Print)

From the Frank X. Buckley and Michael P. Burns Collection at the Institute of Technology Carlow.

APPENDIX 8

ENHANCED INTERNATIONALISATION

- Part 1 Benchmarking Institute of Technology Carlow international enrolments against Irish Institutes of Technologies and UK universities
- Part 2 Demonstrating Enhanced internationalisation of Modules and Curricula
- Part 3 Collaborations and International Partnerships
- Part 4 Staff and Learner Mobility

PART 1: BENCHMARKING INSTITUTE OF TECHNOLOGY CARLOW INTERNATIONAL ENROLMENTS AGAINST IRISH INSTITUTES OF TECHNOLOGIES AND UK UNIVERSITIES

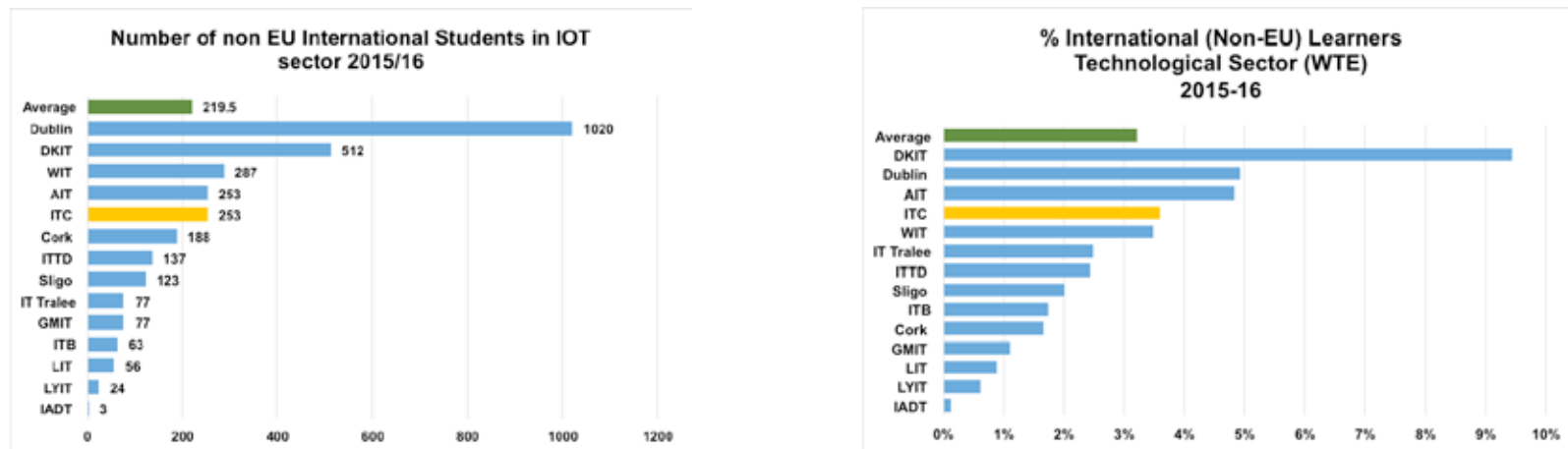
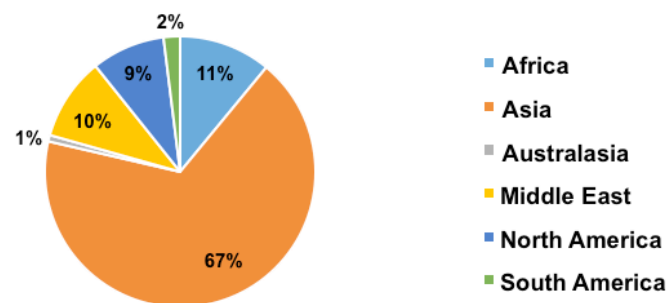


Figure 8.1 Benchmarking Institute of Technology Carlow international enrolments against Irish Institutes of Technology 2015/16 (Source, HEA).

UK benchmarking data was accessed through the Higher Education Statistics Agency. In 2015/16 non-EU enrolments accounted for 15.3% of total UK higher education enrolments. In that year 50.9% of postgraduate learners were non-UK residents. 36.3% coming from outside of Europe. When taught masters only are examined the figure starkly indicates the challenge for Ireland. 69.8% of postgraduate taught learners in UK HEIs are from outside the UK; 58.1% from outside the EU. This trend is increasing. Postgraduate study in UK HEIs now depend on learners from outside the UK. Study visa application numbers are showing a fall in the UK; down 3% to end 2016. This is largely represented by a drop in the Indian market. This institute would have experienced similar difficulties in India in that year.

This may represent an opportunity for Ireland following Brexit but also demonstrates the risk involved if markets change. For instance, in SE Asia the currency shifts between Sterling and the Euro are making the UK HEIS more attractive than this time last year. This is a particular issue in May as May is one of the key recruitment months for SE Asia markets.

HE students in UK by region of origin 2015/16



% IoT International Students by region

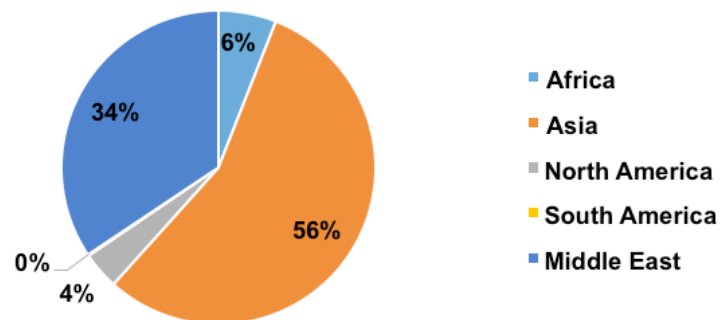


Table 8.1 Top Ten non-EU sending countries to UK HEIs (<https://institutions.ukcisa.org.uk/Info-for-universities-colleges--schools/Policy-research--statistics>).

Country	2015-16	2014-15	2013-14
China (PRC)	91,215	89,540	87,895
Malaysia	17,405	17,060	16,635
United States of America	17,115	16,865	16,485
India	16,745	18,320	19,750
Hong Kong (Special Administrative Region)	16,745	16,215	14,725
Nigeria	16,100	17,920	18,020
Saudi Arabia	8,570	8,595	9,060
Singapore	7,540	7,295	6,790
Thailand	6,095	6,240	6,340
Canada	5,980	6,075	6,350

Table 8.2 Top ten non-EU sending countries to IoTs (hea.ie).

Country	2014-15
China	754
Brazil	692
Saudi Arabia	459
Malaysia	324
Oman	258
India	165
Kuwait	105
United States	56
Nigeria	44
Canada	40

It is interesting to note the broad similarity of countries. Table 8.3 below compares the share of the market by region across this Institute, IoTs combined and the UK market. When the most recent figures are available for individual countries the collapse of the Brazil market will be very apparent as will the growth of the Canadian market through the Colleges Ontario initiative.

The students from Kuwait are all in two IoTs, Dublin IT and IT Tallaght. IT Tallaght have a programme with RCSI for ELT for medical students.

Table 8.3 Comparison between Institute of Technology Carlow, all IoTs and all UK HEIs – proportion of students from each region.

Region	ITC	IoT	IoT (excl. Brazil)	UK
Africa	4	5	6	11
Asia	64	44	56	68
North America	5	3	4	10
South America	4	21	0	9
Middle East	23	27	34	2

The main difference in Ireland relates to the impact of the CAPES initiative in Brazil which obviously was very short lived. In the year for which figures (2014/15) are available 692 Brazilian students were registered in IoTs: over 60% were registered in just four Institutes. In fact 204 were in WIT alone. Institute of Technology Carlow decided not to participate in this initiative as stated in Section 6 of the compact report. The academic and resource issues that impacted this decision are presented in Section 6. The net

outcome is that this Institute put resources into developing the Middle East market instead of committing to a single source of students from Brazil and now have a sustainable pipeline from the Middle East.

UK HEIs are much stronger in the Americas while Irish HEIs are much stronger in the Middle East. Obviously these are proportions and not actual numbers. However, it does have strong indicators, e.g. Nigeria is a very big market for UK colleges; ranked number 6 in the Top Ten non-EU sending countries to the UK.

A sample of universities was selected against which Institute of Technology Carlow can benchmark its activities. These were selected as appropriate comparators on the basis of their scale, location and range of disciplines.

Bath Spa University

Total Student Population - 7,630

2015/16 International Students – 595

Overall International Student Proportion – 7.8%

The University of Bolton

Total Student Population – 6,320

2015/16 International Students – 355

Overall International Student Proportion – 5.6%

The University of Gloucestershire

Total Student Population – 7,835

2015/16 International Students – 330

Overall International Student Proportion – 14.2%

Non-EU enrolments for Northern Ireland in 2015/65 represented 4.7% of enrolments (down 0.3% from 2013/14), Wales 13% (down 1%) and Scotland 12.7% (up 0.2%). In Northern Ireland the University of Ulster has a learner population of 25,155 with 710 from outside the EU representing 2.8% of the learner population. In Wales the Institute of Technology Carlow works closely with the University of Wales Trinity St David. They have a total student population of 9930 of which non-EU enrolments represent 5.2% of the total.

PART 2: BENCHMARKING INSTITUTE OF TECHNOLOGY CARLOW INTERNATIONAL ENROLMENTS AGAINST IRISH INSTITUTES OF TECHNOLOGIES AND UK UNIVERSITIES

Extract Faculty of Business and Humanities Strategic Review 2015 (pp117)

Section 2.8.3

As part of the Programmatic Review each Programme Board/Stream will review its curricula to incorporate international/global element(s) by considering the ideas below identified by Carroll (2014) as key to embedding internationalisation in the curriculum.

- Module Outcomes: What are the Learning Outcomes of this module that indicate internationalisation?
 - What are the knowledge, skills and attitudes that graduates from this module should develop to reflect the learning outcomes above?
 - What assessment tasks could students complete to demonstrate achievement of these knowledge, skills and attitudes?
 - What learning activities and tasks will assist learners to develop these knowledge, skills and attitudes?
- Syllabus topics can develop students' international perspectives by including:
 - links to social and economic issues such as social justice, equity, human rights,
 - ways of addressing global environmental issues
 - explore knowledge construction from culture to culture in the discipline area
- Teaching activities can introduce an international perspective to the content of a programme. These include:
 - case studies, projects, or examples from a range of different cultures and national settings
 - investigation of professional practices in other cultures using a recently published, international textbook or journal article
 - requiring fieldwork with local organisations working on international projects or national projects with an intercultural focus.
 - examining ways in which particular cultural interpretations of social, scientific or technological applications of knowledge may include or exclude, advantage or disadvantage people from different cultural groups
- Assessment tasks can introduce an international perspective by including the requirement to refer to:
 - problem-solving exercises and/or research assignments with an international or intercultural component
 - specific intercultural issues in professional practice
 - contemporary international and local context
 - group work in heterogeneous and diverse cultural groups
 - reflect critically on what they are learning in relation to their own
 - cultural identity, cultural or geographical context.

This process was operationalised through specific reference in each faculty programmatic review. The example below is from the BA (Hons) in Early Childhood Education and Care.

Internationalisation (if applicable)	<p><i>Outline the ways in which internationalisation is embedded within the programme:</i></p> <p>Internationalisation is embedded into the programme in the following ways:</p> <ul style="list-style-type: none"> • International dimensions covered in the following modules: <ul style="list-style-type: none"> Year 1: <ul style="list-style-type: none"> ○ Visual Arts in Early Childhood Education & Care ○ Introduction to Early Childhood Education & Care ○ Introduction to Psychology ○ Caring for the Developing Child ○ Sociology & Social Policy ○ Professional Development for Early Childhood Education & Care - Year 2: <ul style="list-style-type: none"> - Pedagogy & Curriculum - Outdoor & After School Education & Care - Philosophy in Early Childhood Education & Care - The Psychology of Children & Childhood - Children’s Literature in Early Childhood Education & Care - Year 3: <ul style="list-style-type: none"> - Leading Contemporary & Quality Practice - Children with Additional Needs - Supervised Professional Practice 2 - Ethics, Equality and Early Childhood Practice
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In addition, all programmes indicate that *“learners on the programme are also encouraged to avail of the possibility to study abroad as part of the Erasmus programme.”*

Institute of Technology Carlow

Register of Collaborative Provision

Dept/School /Centre	Partner Institution	Country	Programme Involved	Nature of Agreement	Category of Agreement type
School of Engineering					
Electronic Mechanical and Aerospace	Defence Forces (CIS Corps)	Ireland	MSc in Communications Technology Management PG Dip in Science in Communications Technology Management BEng in Electronic Engineering (Military Communications Systems) Higher Certificate in Engineering in Electronic Engineering	Validated Programme Provision	Collaborative Provision
Electronic Mechanical and Aerospace	Defence Forces (Ordnance Corps)	Ireland	MEng in Weapons, Ordnance, Munitions and Explosive Engineering Certificate in International Counter-Improvised Explosive Device/Device Disposal (10 credit, Level 9)	Validated Programme Provision	Collaborative Provision
Built	Defence	Ireland	MSc in Military Engineering	Validated	Collaborative

Dept/School /Centre	Partner Institution	Country	Programme Involved	Nature of Agreement	Category of Agreement type
Environment and Extended Campus	Forces (Engineer Corps)		Management PG Dip in Science in Military Engineering Management	Programme Provision	Provision
School of Business and Humanities / Centre for Lifelong Learning					
Humanities	An Cosán	Ireland	BA in Applied Addiction Studies and Community Development Higher Certificate in Applied Addiction Studies and Community Development BA in Leadership and Community Development Higher Certificate in Leadership and Community Development Special Purpose Award Certificate in Transformative Community Education Special Purpose Award Certificate in Citizenship and Social Action (Level 7)	Validated Programme Provision	Collaborative Provision

Dept/School /Centre	Partner Institution	Country	Programme Involved	Nature of Agreement	Category of Agreement type
			Special Purpose Award Certificate in Community Leadership (Level 7) Special Purpose Award Certificate in Learning to Learn – (Level 6) Special Purpose Award Certificate in Technology Enhanced Learning – (Level 7)		
School of Business and Humanities / Centre for Lifelong Learning					
Business	Defence Forces	Ireland	BA in Leadership, Management and Defence Studies BA in Leadership, Management and Defence Studies (Logistics) Certificate in Leadership, Management and Defence Studies (minor award level 7 30 Credits) Higher Certificate in Arts in Leadership, Management and Defence Studies	Validated Programme Provision	Collaborative Provision

Institute of Technology Carlow
Register of Partner Universities & Colleges
International (Non – EU) Articulation Agreements

Note: Unless otherwise stated, each agreement is assumed to require review after three years

Name	City	Province / State	Country	Academic Area
Guilin University of Electronic Technology	Guilin	Guanguxi	China	Business, Design Engineering
Henan University of Economics and Law	Zhengzhou	Henan	China	Accounting
University of New Hampshire	Durham	New Hampshire	USA	Health Science
St. Ambrose University	Davenport	Iowa	USA	Health Science
Dong – A University	Busan	Busan	S. Korea	Engineering
Nilai Internat. University College	Nilai	Negeri Sembilan Darul Khusus	Malaysia	Aircraft Systems
Seton Hall University	South Orange	New Jersey	USA	Health Science
Confederation College	Thunder Bay	Ontario	Canada	Aircraft Systems
Nova Scotia Community College	Halifax	Nova Scotia	Canada	Built Environment
College of the North Atlantic	Gander	Stephenville Newfoundland and Labrador	Canada	Aircraft Systems
Cranfield University	Cranfield	Bedfordshire	England	Aircraft Systems (Part 147 Org.)
Corjet Maintenance	Madrid	Madrid	Spain	Aircraft Systems (Part 147 Org.)
University of Tennessee	Chattanooga	Tennessee	USA	Computing
Irish Aviation Authority	Dublin	Dublin	Ireland	Engineering
Mages Institute of Excellence	Singapore	Singapore	Singapore	Computing
Samara State Aerospace University	Samara	Samara	Russia	Aircraft Systems (Part 147 Org.)
Samara State Academy of Social Sciences and Humanities	Samara	Samara	Russia	Social Science and Humanities
Belgorod National Research University	Belgorod	Belgorod	Russia	Science Computing and IT

Name	City	Province / State	Country	Academic Area
Institute of Education	Dublin	Dublin	Ireland	Entry from foundation
Dorset College	Dublin	Dublin	Ireland	Entry from foundation
Colleges Ontario Canada	Ontario	Ontario	Canada	IoT
TAR University	Kuala Lumpur	Malaysia	Malaysia	Engineering
HELP University	Kuala Lumpur	Malaysia	Malaysia	Science
Globalinks	Westminster	Colorado	USA	
Tongling University	Tongling	Abhui Province	China	
SupBiotech	Villejuif	Villejuif	France	Science
Technical and Vocational Training Corporation, Kingdom of Saudi Arabia (TVTC)	Riyadh	Saudi Arabia	Saudi Arabia	
Aviation Australia	Brisbane Airport	Brisbane	Australia	Engineering (Part 147 Org.)
Malaysian Technical University Network	Malaysia	Malaysia	Malaysia	IoT
Quality and Qualifications Ireland (QQI)	Dublin	Dublin	Ireland	
Flight Training Europe	Jerez	Cádiz	Spain	Engineering (Part 147 Org.)
Luoyang Normal University China	Luoyang City	Henan Province	China	
TAFE	Seremban	Negeri Sembilan	Malaysia	Engineering
Wisconsin Technical College System (WTCS)	Wisconsin	Great Lakes Region	USA	IoT
Irish Light Aviation Society (ILAS)	Bray	Co. Wicklow	Ireland	Engineering (Part 147 Org.)
South East Radio	Custom House Quay	Wexford	Ireland	Wexford Campus
Banco de Mexico (Mexican Federal Government)	Guaemala	Mexico	North America	IUA and IoT
Wexford Arts Centre	Wexford	Wexford	Ireland	Wexford Campus
Despark College	Petaling Jaya Selangor	Malaysia	Malaysia	Engineering
DAA International	Dublin	Dublin	Dublin	Engineering
Shanghai Normal University	Shanghai	Shanghai	China	Engineering
Hochschule Hannover – University of Applied Sciences and Arts	Hannover	Hannover	Germany	Business
Irish Farmers Association	Dublin	Dublin	Ireland	Wexford Campus
Ithaca College	New York	New York	USA	Science
USCI University Malaysia	Kuala Lumpur	Malaysia	Malaysia	Engineering Science

Name	City	Province / State	Country	Academic Area
				Business & Humanities
ALFA International College	Jalan	Malaysia	Malaysia	School of Business & Humanities
TUSLA – Child and Family Agency	Wexford	Wexford	Ireland	Wexford Campus
Institut Teknologi Riam	Sarawak	Malaysia	Malaysia	Engineering
Admal Aviation College Malaysia	Selangor	Malaysia	Malaysia	Engineering
Conestoga College Malaysia	Kitchener	Ontario	Canada	School of Business & Humanities
ISC Paris Business School	Paris	France	France	School of Business & Humanities
International College of Yayasan Melaka Malaysia	Melaka	Malaysia	Malaysia	Engineering
Shandong Academy of Science	Jinan	China	China	Science
Shanghai Finance University	Shanghai	China	China	School of Business & Humanities
University of Maine	Maine	USA	USA	School of Science

PART 4: STAFF AND LEARNER MOBILITY

Table 8.4 Staff and Learner Mobility.

	Places allocated:
Student Study Mobility	10
Student Placement Mobility	62*
Staff Teaching	8
Staff Training	4

This figure comprises 30 Erasmus placements and 32 Department of Science and Health International placements in US, UK and South Africa.

This equates to staff mobility rate of 5.6% and student mobility of 1.8%. Student mobility opportunities were oversubscribed.



Robert Ballagh (b.1943), *Portrait of Louis at his easel* (Lithograph on paper, 2006)
From the Frank X. Buckley and Michael P. Burns Collection at the Institute of Technology Carlow.

APPENDIX 9

INSTITUTIONAL CONSOLIDATION

Extract from Engagement and Consultation Process on a Technological University for the South East.

Report to the Minister for Education and Skills by Michael Kelly, August 2015.

"In the case of the South-East, a number of particular factors are identified locally as adding significantly to the scale of challenge involved. They include:

- 1. The inconsistent definition of the region for different purposes, the existence of a number of strong, often competing, urban centres, the north (Leinster) and south (Munster) affiliations and a perceived loss of status for Waterford as an administrative headquarters or gateway city, all tend to militate against a strongly unified regional identity, for individuals or institutions.*
- 2. The previous history regarding application for University status for WIT. The Institute submitted an application in 2005 under Section 9 of the Universities Act, 1997. Stakeholders in Waterford express a strong sense of frustration that previous commitments, as they saw them, had not been honoured. Similarly, they believe that Waterford has 'lost out' on many fronts and that the policy resistance to a conventional university application for Waterford is just another manifestation of this.*
- 3. There is little evidence of previous formal collaboration, academic or otherwise, by both Institutes. This may reflect geographic distance as well as previous differences in orientation. It may also reflect the more general regional fragmentation above.*
- 4. Equality of esteem has proved difficult to establish, reflecting a widely held view in WIT that they are already 'at university level'. Many instances of negative commentary, formal and informal, have been unhelpful and hurtful to staff and students and corrosive to the process of collaboration.*

5. *During the period in question, a number of extraordinary events in WIT, including a leadership change and a formal review of its financial affairs, with attendant critical public commentary, subjected the Stage 2 planning process to unexpected stresses and interruption, which have hindered momentum.*
6. *While both Institutes have much in common, each has its own history, strengths, weaknesses and distinctive culture and outlook. Such differences are not unique to the South-East consortium and can usually be accommodated where the values of diversity, complementarity, mutual trust, respect and esteem are recognized. It is a weakness of the process followed to date that this has not been achieved across both institutes.*
7. *The Institutes jointly recognized the scale of the challenge and had made application for a level of financial support (to cover external facilitation, change management etc.) based on their assessment of requirements. In the event, it did not prove possible to provide project support on the scale requested. In this, the South-East found itself in the same dilemma as other consortia. A stronger focus on substantive, bottom-up, cross-campus engagement on the design of the new institution will be a requirement of any renewed engagement on TUSE."*

Francis Bacon (b.1909), *Study of bullfight* (Silk screen print, 1990)
From the Frank X. Buckley and Michael P. Burns Collection at the Institute of Technology Carlow.





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