An Exploration of the Effects on Programme Design and development Effected by Educational Leadership in Reaction to Societal and Economic Factors in Ireland*

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Abstract

It has affected many countries around the world, and Irish higher education has not found itself immune from undergoing a period of significant change, powered by a number of factors: economic, political, and technological. While these trends are global in their scope, and profound in their impact, the pace of change in the Irish economy since 2007-08 in particular has required institutions and their educational leaders to encourage the emergence of programmes which can respond to the current national needs. In periods of rapid change such as this, educational leaders by necessity tend to focus on short-term strategy and transition planning, adapted to their institutional contexts. However, there are critical leadership issues related to curriculum policy and classroom practice which extend into the long-term. Students on these emergent programmes need to be able to respond effectively in turbulent societal circumstances. This paper reflects on the role of educational leaders in creating and shaping programmes through an exploration of the notion of the market-higher education interface. This case study is seeking to gain enhanced understandings of emergent trends in higher education programmes in the past five year period against a backdrop of continued changes to the Irish economy and society. It seeks to explore the new realities of how two Irish higher education institutions (HEIs) are being shaped by the market and how they hope to maintain or enhance the viability of their offerings, resulting in effective programme provision into the still uncertain future. Recommendations focus on challenging existing practices with regards to how educational leaders support programme development.

Keywords: Barriers; change; curriculum design; drivers; educational leadership; emergent; higher education; provision; reactionary, trends.

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Introduction

It has been widely reported that across the world higher education is in a state of flux. As highlighted in a recent Oireachtas Report (2014), it has been argued (largely by academics) that increased 'marketisation' of Irish higher education, with a greater focus on private sources of income and a diminution of its social and cultural roles, is a function of a more economy-driven sector. The growth and diversification of Irish higher education has certainly been well documented in recent years (Walsh, 2009; Hazelkorn & Moynihan, 2010; McCoy & Smyth, 2011; Harkin & Hazelkorn, 2014; Loxley, Seery & Walsh, 2014; Coolahan, 2014; Humphreys, 2014). However, while this reinvention mirrors what is happening internationally, Irish higher education institutions (HEIs), and the policies that produce and support them, arguably also need to be reinvented. This is due at least in part to the impact of changes in the economy. This study explores perceptions and reactions of academic leaders and staff in two Irish HEIs to the economic changes and trends impacting on programme provision.

Context and Rationale

The relationship between higher education and the economy in Ireland has come into sharper focus since the onset of the economic crisis in 2007-08. The Oireachtas Spotlight report (2014) also pointed out that Irish higher education has been linked with economic development, arguably since the 1960s with the Investment in Education report. Since then, the sector has expanded to comprise seven universities, 14 institutes of technology (IoTs) and seven colleges of education, as well as numerous colleges, some state or partly state-funded, and a number of independent private colleges.

The Institute of Technology (IoT) sector in which this study is based, emerged in the early 1970s. Then, participation in higher education was less than 20 per cent of school leavers and it essentially was the domain of the elite. Since then, the IoT sector has arguably made the biggest contribution to the growth in higher education participation which is now close to 65 per cent of school leavers. An article in The Irish Times (Cummins, 2013) has reported that the Institutes of Technology in Ireland have transformed Irish third-level education, but they must still battle negative perceptions. It also details that the IoTs have contributed greatly to economic and social development, with the biggest overall impact being on improving workforce productivity in the regions they serve.

In recent times, there have been a number of ongoing and proposed reforms of the higher education sector, as well as change proposed in the Government's legislative programme, namely the Technological Universities Bill, the Higher Education Authority Bill and the Universities (Amendment) Bill. There have also been various recent reports on the changing higher education landscape in Ireland (DES, 2011; HEA, 2013).

The National Strategy for Higher Education to 2030 (DES, 2011), known locally as the 'Hunt Report', was framed against a range of new challenges facing higher education; it has argued that

> Irish higher education itself will need to innovate and develop if it is to provide flexible opportunities for larger and more diverse student cohorts. It will need to do this while simultaneously enhancing quality and relevance, and connecting better with the wider needs of society and the economy, while operating in a more competitive globalised environment (p. 32).

The 2012 HEA policy document entitled A Proposed Reconfiguration of the Irish System of Higher Education reported growing concern that while the laissez-faire development of the Irish higher education system has achieved successes in some areas such as higher participation and research activity, it has also led to mission drift,

confusion over the role and mission of institutions, growing institutional homogeneity, unnecessary duplication and fears about the quality and sustainability of the system. The same report highlighted the importance of *Comprehensiveness* – ensuring that each institution will be able to offer a comprehensive range of programmes without unnecessarily duplicating capacity; *Rationalisation* – providing the opportunity to rationalise the number of programmes offered through the elimination of duplication, while being able to maintain a comprehensive range of offerings; *Complementarity* – ensuring that institutions will have complementary offerings to support accessibility and capacity.

Instead of making incremental and additive changes to programmes, it is argued in this study, that instead of continuously striving to be reactionary to the rapid changes facing the economy and society, Irish HEIs need to take a step back from the fray and consider the wider implications of their programme provision. Sabri (2010) has argued that the individual academic is all but absent from the assumptive worlds of policymakers, and goes further to suggest that this absence of the academic in policy disrupts the possibilities for engagement between the worlds of academia and policymaking and in perpetuating the discourses of marketisation and new management in higher education. As an empirical attempt to acquire enhanced understandings of the practice of programme provision, this paper includes exemplars of the patterns and trends of new programme provision as identified in the case study. In the context of this work, *educational leadership* is referring to programme co-ordinators and design teams across a range of subject disciplines.

Moving forward with programme provision in an age of uncertainty is certainly not confined to Ireland and the issues it has encountered since the recent economic and social crisis. While no specific international comparative studies were uncovered in the research for this current work, interesting insights were available from the work of Mkandawire (2010) who argues that the economy of a nation will determine the

success of curriculum implementation.

For anyone who has been involved in a programme team, there would generally be an understanding that curriculum development is continuous work. Curriculum implementation, according to Okello & Kagoire (1996, p.124) “is a network of varying activities involved in translating curriculum designs into classroom activities and changing people’s attitudes to accept and participate in these activities”. However, curriculum implementers are faced with barriers which hinder the successful implementation of the curriculum.

How do academic staff on programme teams adapt or change to be more responsive to an increasingly interconnected world that experiences far-reaching economic and social changes? With awareness of recent trends in the Irish economy and society, this study is concerned with how to do programme co-ordinators and teams meet current educational needs and expectations of key stakeholders; how do they anticipate the knowledge and skills needed for a more globalised economy? We would argue in this study that programme teams need scaffolded support in working on curriculum design initiatives to shape the future of programme provision.

Research Aim and Objectives

Given the well recognized and high magnitude changes that have taken place in the Irish economy and society since 2007, this study aims to explore the effect that this has had on the provision of higher education programmes in the Institute of Technology (IOT) sector in Ireland. There are three objectives of this study, which was conducted in 2012, and was a retrospective exploration of perceptions and reactions of academic leaders and staff on the previous five years:

1. What programmes have emerged and what programmes have been discontinued by Irish Higher Education Institutions in the five year period from 2007-2012?
2. What have been the drivers and barriers to both discontinuation of programmes and new programme offerings in two Irish institutes of technology?
3. How have programme co-ordinators and design teams been influenced in their work on programme teams by societal and economic changes in recent years?

Educational Leadership and Trends in Programme Design

A number of areas were explored in the literature which informed this study including how international and more specifically, Irish higher education provision and its educational leaders have responded to economic changes through programme provision. This extends to an exploration of existing and emerging drivers and barriers to changes in this provision, and an analysis of the impact of these on curriculum/programme design.

Barnett (2011) has been one of the leading writers on the nature of higher education in changing and challenging economic and social climates and how it can be envisaged for the 21st century. He argues that the only challenge on individual universities is that of working out where in the academic marketplace they should place their entrepreneurial efforts, and where they wish to place themselves. Marginson (2006; 2012) suggests that the impact of managerialism is greatest in higher education where there has been a global movement to make higher education into a marketable commodity that can be traded internationally.

Internationally research has been undertaken on how such institutions can effectively face into the future (Collini, 2012). Laseter (2012) discusses the modern universities dilemma and argues that in the face of disruptive change, higher education needs a

new, more innovative business model. Blackmore (2012) has highlighted key changes in global higher education in recent years as the extension of the mass education system, education as a commodity in a market, and the crisis in social upheaval. He outlined what a number of universities are doing to meet these challenges. The University of Melbourne and the University of Western Australia offer students the opportunity to undertake New Generation degrees and university-wide breadth subjects which are multidisciplinary, often exploring the 'big issues' facing the world today and building on cross-disciplinary research. Utrecht University offers a personal study programme and among others, Kings College London offers all students the chance to experience a blend of key features such as a research-rich environment, inter-disciplinarity, global connectedness, community engagement, and academic literacy. These features have all emerged as key themes in the Hunt Report (2011) as necessary for Irish Higher Education institutions.

For the change process to be successful, Blackmore (2012) argues that it often takes five years or more, and needs to be driven from the top down, bottom up or a combination of the two. Undoubtedly focus and distributed leadership is needed, as well as having an open process and communication with staff. Recognition and rewards do matter and any uncertainty over resources can lead to resistance.

Resources are needed to support curriculum change, with a re-balancing in the distribution of funding, especially towards in the first year of a programme. The Hunt Report suggests that a positive first-year student experience is crucial to achieving the goals of higher education; failure to address the challenges encountered by students in their first year contributes to high drop-out and failure rates, with personal and system-wide implications (DES, 2011, pp.55-57). The Thomas Report (2012) echoes this, and suggests that high rates of withdrawal and low success rates will have "reputational, economic, ethical and legal implications for universities and colleges, as well personal

and financial disadvantages for individuals" (p.4). Given the profile of students in the Irish IoT sector, which this study will highlight, this is of particular significance.

Making more use of graduate teaching assistants, and working with funding models that reveal income and costs of teaching are recommended. Blackmore also suggests a number of issues that can promote student engagement such as the use of volunteering and placements, introducing models of students as researchers, and student-led activities, self- and peer assessment and learning as a core curriculum.

Inglis (2012, p.44) has argued that "short-term contracts, endless reorganisation, the stammering invention of new courses adjusted to possible constituencies in China and Brazil, have broken off continuity and shattered the traditions which ensure that a university maintains an identity and conserves its sense of itself, never more needed than in times of crisis."

This global state of flux in higher education has also extended to Ireland. Coate & MacLabhrainn (2009) have suggested that the higher education environment itself in Ireland is becoming increasingly diverse, competitive, more market-driven and subject to the volatility of shifting global markets for higher education services.

There are a range of projections available on student participation in Irish HE. The Department of Education and Skills has undertaken an analysis of the projected future growth of the third-level student population in Ireland from 2013 to 2027; projected demand is expected to rise year on year to between approximately 212,000 and 215,000 full-time students by 2027. Flannery & O'Donoghue (2011) concur that Ireland has experienced rapid growth in higher education participation over the past 15 years, and reported that student numbers increased from 86,624 to 155,000 in the period 1994 to 2010 and are expected to grow to 204,000 by 2018. Delaney & Healy (2014) suggest that this growth in student numbers together with funding shortfalls have

placed acute pressure on the system. The question remains then for HEIs programme provision on how best to deal with such increases in student numbers.

Hazelkorn (2013) has posited that today, the emphasis is on quality and sustainability in the context of accelerating global competitiveness and the reality of the post-2008 Irish economy. She believes Ireland faces the dual challenge of meeting extensive socioeconomic and demographic demands on/for higher education at a time of decreasing public budgets and public support for publicly-funded institutions. On the positive side however, she argues that Ireland is quickly becoming a test-bed for new thinking about higher education and an important dialogue is now occurring across the sector; HEIs, whose personnel rarely meet despite the small size of the country, are now actively engaged in conversations about research, teaching programmes, access initiatives, shared resources. It is this sense of positivity that this study wishes to explore and build upon.

Research Design

The goal of this case study research was to generalize about a larger population of academic staff involved in programme teams in third level education in Ireland by studying only a small sample of that population. The case study design was chosen as it suited the conditions of this research study well, allowing naturalistic methods of enquiry such as researcher reflections to be carried out, side-by-side with quantitative and qualitative data gathering. The flexibility of the case study approach allows the design to “emerge” (Robson, 2002) during data collection and analysis. The three main reasons for using case study as a methodology in this study was so that it could lead to a greater understanding of the context of the programme trends and changes in the two IoTs, it allowed the researchers to collect information on outcomes not known prior to the initiative, and finally it portrayed the multiplicity of causes that are associated with various outcomes in the study.

Opinions, which are key to public and, we would argue, education policy, are according to Rea & Parker (2012) obtainable with defined and determinable reliability through the survey used. It offered us an opportunity to reveal the characteristics of two institutions and programme teams therein by studying individuals that represent these entities in a relatively unbiased and scientifically rigorous manner. The online survey was organized so that the data was collected in a short period of time, which offered convenience and the advantage of obtaining a snapshot of the academic population.

Analysis

The research objectives formed the basis of the key questions in the survey, i.e. which programmes have disappeared and which are newly formed, what were the drivers and barriers to change in programme delivery in the time period 2007-2012, and how have progamme teams (led by co-ordinators) been influenced by changes in the Irish economy. The rationale and purpose of the study was explained to each participant (n=73) in the accompanying documentation with the online survey. The research was carried out in keeping with the requirements of the British Educational Research Association ethical guidelines for educational research (BERA, 2011). Ethically, the investigation was designed to cause no 'harm to participants' (Bryman, 2008, p.118) and to ensure no 'deception' took place. The participants were fully informed of the study, the intention to publish, and the researchers do not hold a position of authority over the participants. The participants were not considered vulnerable as defined by the British Educational Research Association (BERA, 2011).

The survey data was analysed using the six phase guide recommended by Braun & Clarke (2006):

Phase 1: familiarising yourself with the data

Phase 2: generating initial codes

Phase 3: searching for themes

Phase 4: reviewing themes

Phase 5: defining and naming themes

Phase 6: producing the report

As indicated, 73 participants attempted to complete the survey across the two institutions, however 11 surveys were incomplete, and in addition 3 respondents did not wish their data to be published. Therefore when these 14 responses were removed, the response rate was 59. 55.93.2% (33) of respondents were male and 44.07% (26) were female members of academic staff. In terms of duration in their current academic role, Figure 1 below shows the breakdown.

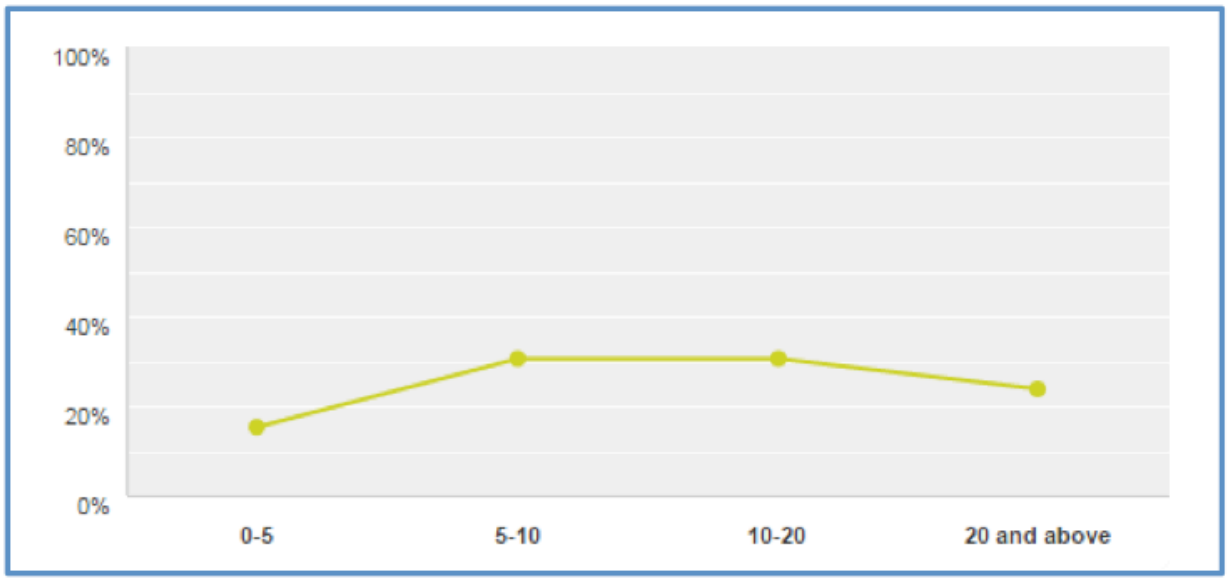

Figure 1: Study Respondents Demographics Duration in Current Role

For the focus in this study on educational leadership, it was important to engage with those academics in the institutional programme chair or co-ordinator role. Figure 2 shows the combined institutional Schools who took part in the study, and indicates how many Programme Chairs in each School participated.

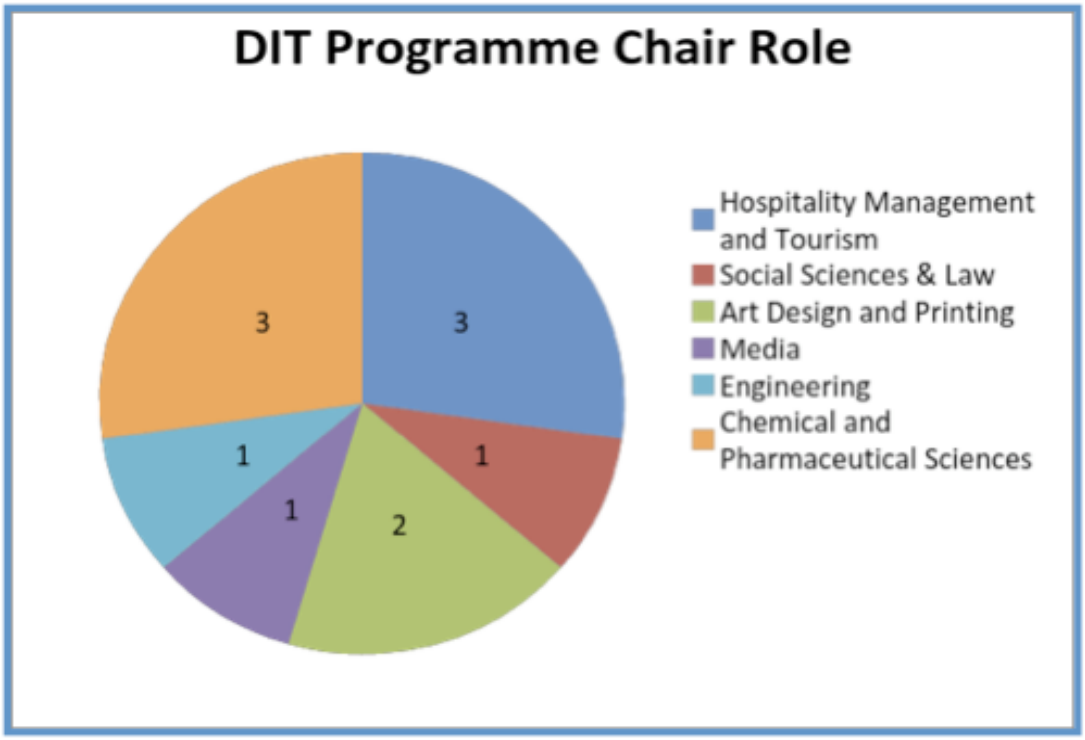

Figure 2: Combined Institutional Programme Chair Response

In AIT, the role of Programme Co-ordinator is normally held by an academic who is a senior lecturer at grade one or two. Figure 3 indicates the academic departments which were invited to take part in the study.

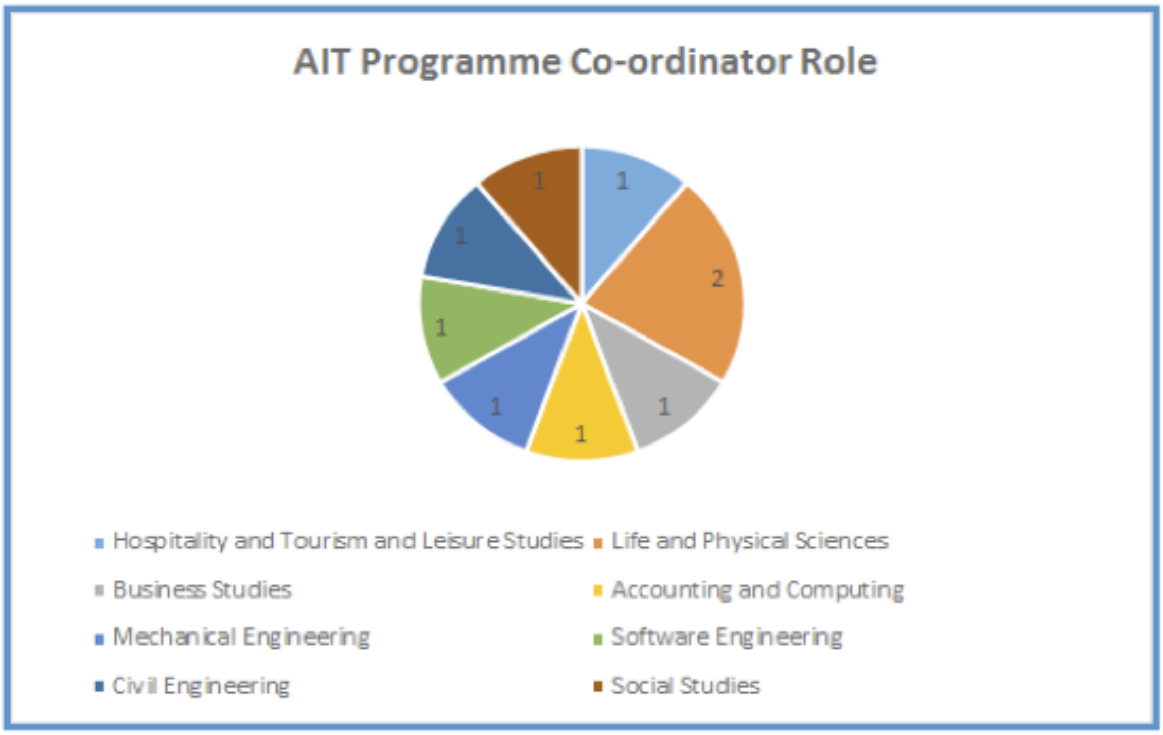

Figure 3: Programme Co-ordinators

As part of shedding light on the current range of programmes in these two institutions, the following three areas were explored in the survey: ***Profile of Applying Students, Disappearing Programmes from Departments/Schools,*** and ***New Programmes Offered.***

Findings and Discussion

Profile of Students Applying Today

56 respondents indicated awareness of a change in the nature of student applying for their programmes. Table 1 indicates student profiles identified by respondents:

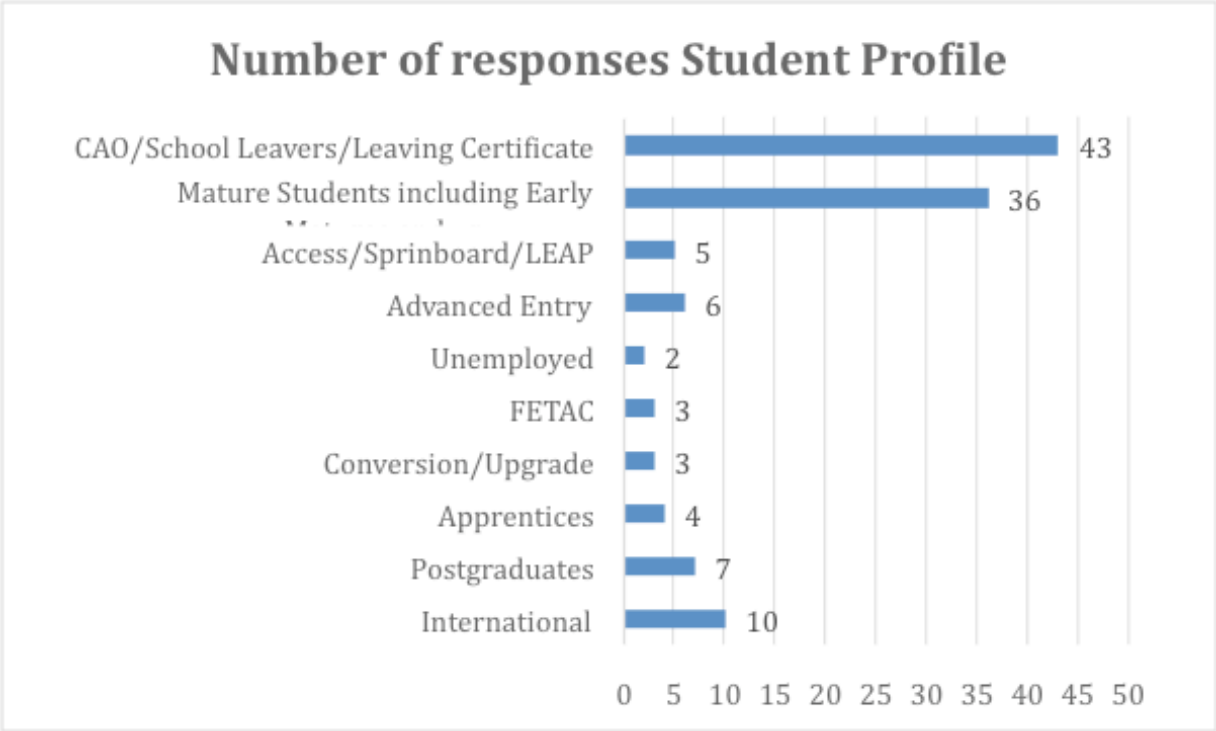

Table 1: Number of respondents indicating this Student Profile

In addition, Industry Operatives and Level 5 & 6 students were also mentioned. While the majority of students participating on all the programmes investigated in this study remain full time CAO and school leavers, mature students are partaking on most courses in growing numbers, with a breakdown from 15%, increasing to 30% in mature students indicated in some courses.

The most commonly referred to profile was standard CAO entry from leaving certificate. However in keeping with government policies for widening participation and access to higher education, respondents also commented on the increasing numbers of access students. In addition, the increasing numbers of mature students who are completing level 7 and 8 courses and taking advantage of the ladder system for progression was notable. Particular funding initiatives which were developed in response to the economic crises, such as *Springboard* and *Leap* have impacted on student profile. Non-standard entry applicants are increasing steadily, as well as increasing numbers of international students being reported; this latter aspect is interesting when mapped

against the general trend now of international students coming to Ireland to study. Humphreys (2014) has reported that while the HEA had predicted a significant increase in international student numbers in 2013, Irish universities have slipped down global rankings and there is failure of the same institutions to attract a higher number of international students. The data in this study shows international students are continuing to become more prevalent. So a question emerges, should and can Irish higher education actually compete internationally, and if so, is co-operation within the IOT sector the right strategy to do so?

Table 2 highlights a number of specific observations about the student profile as indicated by participants in the study:

Specific areas of interest in the student profile
• *Part time undergraduate places are harder to fill now* • *At undergraduate level, we have school leavers with an interest in career in ICT, Manufacturing, Financial Services, and the Gaming industry sectors; at postgraduate level, people looking to re/up-skill* • *Night programmes are mainly employed adults with decreasing numbers of Eastern European students because of employment situation and fees* • *Evening programmes – still filled by mature students. Average age approximately 30. Mostly men. 90% in employment. 50% working in IT already and hoping to work into a better position. Daytime programmes - standard undergrad demographics apply* • *CAO applicants of moderate academic ability, unemployed from a range of sectors seeking opportunities to transfer into sector due to employment opportunities* • *Apprenticeship students are employer supplied, other students come from CAO at varying points levels and evening part time are usually sponsored by employers from the welding and joining industries* • *Traditional students (i.e. post leaving cert), plus non-traditional students, children of immigrants, EU and non EU international students, mature students and students from Access / Leap programmes* • *Varied but we are really only starting to make inroads in attracting mature students. Doing very well on international students* • *undergraduates, graduates in employment seeking to improve their professional knowledge and skills and fulltime graduates seeking to develop the necessary skills and knowledge in a specific industrial sector* • *There is a strong mix of applicants on these programmes, with diversity being increasingly at the core. We appear to have a good age mix with many mature students. Also noticeable is the number of nationalities taking the programmes* • *School leavers varying points from 330 to 410, we have access students, International students, and a high demand for advanced entry into the second year of our degree programmes. Our postgraduate Diploma Programmes (conversion) attracts graduates from Politics, Law, engineering and the arts. Our MSc Programmes attracts students from universities and Institutions all over Ireland. International students from China, India and Russia and Eastern Europe make up some 10 % of our student population* • *Highly educated and motivated students who tend to have good Leaving Cert standards of education (or equivalent at L6 - five or six distinctions)* • *Very popular with mature students as offers a professional qualification in many cases*

Table 2: Specific Areas of Interest in Student Profile

Disciplines drawing mid-range students with regards to Leaving Certificate Points were Business with 350-450 points. However other programmes are attracting what one respondent considered:

> *Very weak applicants who struggle quite a lot with the material presented and are not able to cope with some general tasks.*

In addition, a Design degree, Engineering programmes and Electrician programmes were considered:

> *Hands-on and involve a high level of work placement, which tends to draw more practical than academic students.*

Notably, programmes such as design received comments such as:

> *Most students who wish to study design (selected by art portfolio) will have completed a PLC portfolio course, and can earn up to 600 points for this work.*

Design students were described as:

Creative students, good at art at second level.

Disappearing Programmes from Departments/Schools (2007-12)

A number of respondents (23) indicated that no programmes have been dropped from their Department's offerings. However there were respondents who reported on programmes that have been withdrawn. These included construction-related programmes such as real estate and sustainable construction. In addition, the severe reduction in apprenticeship programmes was notable. Programmes in financial services and professional accounting have been withdrawn in addition to some medical-related programmes. Outdated or obsolete programmes have also been withdrawn in addition

to a conversion programme for level 7 to 8. Interestingly a newly developed programme has not proved popular and is ready to be withdrawn. Other examples reported are three year ordinary degrees, for example in food and pharmaceuticals and part time postgraduate offerings with falling numbers. Table 3 below shows the range of

disappearing programmes with an indication from participants of why this is the case, grouped under themes of economic impact, being obsolete, being part-time, or attributable to a specific discipline.

There are some noticeable trends in the types of programmes that are disappearing with two further examples given as:

- *FETAC level5/6*
- *We are moving away from overly specific programmes back to core disciplines (slowly, but trend in programme Team discussions is apparent!)*

As indicated previously, the notion of rebranding of existing programmes plays a significant role in some disciplines:

- *There have been changes to names yes and possible new emphases but it has all been determined by staff competencies and expertise as much as external demand*
- *There has been an evolution. We haven't 'lost' any undergrad, but we have transformed some of our post-grad provision. We're in a growth area with lots of potential that we don't have the resources to fully exploit*
- *Programmes have not disappeared, but specific traditional focus on hotels and catering have now been captured under the umbrella of hospitality*

Theme	Programmes Withdrawn Sample of Responses
Economic Impact	• *Several apprenticeship programmes in construction* • *Apprenticeship has almost disappeared* • *Apprenticeships have reduced significantly* • *Severe Reduction in Apprentice numbers and talk of them being totally lost!!* • *Am aware of anecdotal information on reduction in apprenticeships* • *The trades of cabinet making and wood making have finished and have been combined to form wood manufacture and finishing. carpentry has been relocated to another school so too has plastering* • *BA Accounting and Law; BBS Real Estate; HC Financial Services*
Obsolete or non-performing Programmes	• *Advanced Refrigeration & Air Conditioning* • *We have stopped running professional Accounting Programmes in the last few years* • *There has been a culling of some outdated MSc programmes* • *Diplomas* • *Franchise international programmes, programmes supporting societal need rather than employment*
Part-time provision	• *Part-time BSC. Business & Law. Attempts made to resurrect interest in this.* • *Two Level 6 and all part-time business specific evening programmes* • *Part time taught Masters programme* • *Part time versions of BE and BEngTech. We ran the ME in Automation and Control and Elec Energy but can't attract students to them at present - they haven't disappeared but fails to run* • *Only short courses and CPDs*
Medical/Sciences	• *BSc in Medical and Molecular Cytology (due to external factors)* • *Pharmaceutical Technology* • *BSc in Analytical Chemistry, BSc (Hons) Applied Chemistry*
Others	• *Level 7 degree programs in food and pharmaceutical areas* • *A work-based programme in social care, a progression course from level 7 to level 8 and a level 7 course in social care* • *We have lost a conversion programme / progression year from level 7 to 8; we are no longer recruiting for one of our level 7 degrees; and a new programme at level 7 which ran in one year did not fill in subsequent years and has effectively disappeared*

Table 3: Programmes withdrawn (2007-2012)

New Programmes Offered (2007-2012)

52 respondents said that new programmes were being offered in their Department/School in the time period (2007-2012). New offerings included:

> *a range of conversion programmes at Level 8*, *One year add-ons/top up for those with ordinary degree.*

In addition Honours Degrees, Masters Degrees and Short Industry Courses were reported. The development of *Springboard* programmes and specialist programmes by specifically targeting funding offered by government/government and industry partnership was indicated. Two departments, one in each institute, reported the development of twelve new programmes in areas such as life and physical sciences and in architecture. One department reported the redesign of all programmes from 2007-2009 this included two new certificate programmes; three new degree programmes; one *Springboard* and one common entry Science programme. The development of a conversion programme to level 8 was reported in addition to the development of programmes for continuous professional development, and the development of one year add-ons from ordinary degrees.

Programme development also occurred which was directly linked to the research areas of interest of staff in order to bolster research funding applications. The integration of programmes in finance and development of postgraduate offerings was also mentioned. Programmes were developed with an international focus in Tourism and Hospitality, in addition to the review of offerings in renewable energy and energy efficiency. It is interesting to note that *digital media* was cited as coming more to the centre across a number of programmes.

Table 4 indicates the discipline and cognate discipline areas for the new programme offerings at undergraduate level and similarly Table 5 for postgraduate programmes developed between 2007 and 2013.

Business	Design	Engineering	Hospitality	Science
Business & Law	Visual & Critical Studies	Energy & Business Management	Hotel and Leisure Management	Sports Therapy with Rehabilitation
Business Psychology	Creative Industries	MECI	Spa Management	Bio veterinary Science
Accounting & Law	Visual & Critical Studies	Project Management	Culinary Arts	Sports Science with Exercise Physiology
Computing	Visual Merchandising & Display	Environmental Management	Wellness and Tourism Management	Sports Science with Exercise Physiology
Computing for Business		Project Management	Culinary Arts Catering for Health	Veterinary Practice Management
Entrepreneurship & Innovation		Electrical Services and Energy Management	Culinary Entrepreneur	Applied Biosciences
Business		Building Information Technology	Artisan foods	Audiology
Entrepreneurship		Building Physics	Event Management	Health Science with Nutrition
Social Media Marketing		Retrofit Construction		Dental Practice Management with Oral Health Promotion
Human Resources Management		Gaming Design		Clinical Pharmacy Practice
International Business Development		Civil Engineering		Bio molecular Science
Sales		Water Treatment		Public Health Nutrition
Retail Management		Energy Management		Public Health
Digital Marketing				Biopharmaceuticals
Data Analytics				Nutraceuticals
Financial Mathematics				Food Innovation
Analytics				Pharmaceutical Healthcare
Economics & Finance.				Science
Finance				Chemistry Abinitio
Logistics				Medical Device Innovation
Economics & Finance				Hearing Aid Audiology
Business and Computers				Chemical Sciences

Table 4: Programme Discipline and Cognate Discipline Areas at Undergraduate Level

**Note: This may not represent the full range of subject areas.*

Business	Design	Engineering	Hospitality	Science
Human Resources Management	Visual and Critical Studies	Building Information Technology	New Product Development	Toxicology
Finance	Critical Practice	Building Physics		
International Banking and Finance	Design Practice	Retrofit Construction		
Marketing	Creative Arts.	Games Development		
Digital Marketing and Analytics	Design	Automation or Control		
		Electrical Energy		
		Signal Processing		

Table 5: Programme Discipline and Cognate Discipline Areas at Postgraduate Level

**Note: This may not represent the full range of subject areas.*

Five respondents indicated that no new programmes were being offered in that time period, but there was an indication from some that adaptations were undertaken of certain modules:

- *None new in department but some programmes have been adapted and are used in architecture for example, medical device innovation is new in the school*
- *None - but new interdisciplinary modules are offered as part of programmes*
- *CPDs in Data Analytics and Financial Mathematics and Analytics*
- *No new programmes yet, but tweaking of some to adapt to Renewable Energy and Energy Efficiency*

These results indicate significant programme design and review in both institutes which involved a major commitment by academic leaders, academic and support staff, quality committees and stakeholders. The results indicate what can be called an agile response to programme design, and changes taking place in each institution. In addition, although the HEA have indicated a preference for more common entry programmes, the data indicates that the niche offering in IoTs are still very important.

Drivers for Programme Design or Review

- Increasing student numbers in the Department/School featured highly in the response to the drivers for change, with 17 respondents highlighting this as the main reason for change to programme offerings; there was a particular interest in growing postgraduate programmes on offer to attract students.

- Strategic planning at institute or department level were also drivers in addition to the availability of physical and human resources and the need to diversify.

- The role and engagement by academic staff were also considered to have contributed; specifically the development of postgraduate programmes in response to staff expertise and to reflect sustained research strengths and expertise in schools. In addition, the role of individual members of teaching staff in taking the initiative was notable alongside the importance of staff expertise. The motivation of staff to respond to demands was also highlighted as a key driver.

- Pressure to perform was also highlighted as a driver for change in programme provision, whether that meant staying current, the requirement to grow student numbers, the viability of programmes, competition or the need to leverage existing capability for growing demand and market. Indeed Walsh (2012) argues that Irish academics are familiar with the increasing influence of commercialism upon their work.

- The impact of the economic conditions also were considered a driver including the requirement to respond to declining apprenticeship numbers; funding initiatives by the HEA in response to the crises and falling student numbers were also identified.

- The importance of staying of staying current emerged which included responding to the evolving media environment, legislative changes and new developments in various disciplines.

- Finally the quality of programme design was also reported as a driver for programme change/review - specifically poor or confusing original programme design or programmes which were out of date. The professionalization of skills-based programmes to incorporate knowledge and competences were considered as a driver in addition to the identification and development of niche programmes which would be attractive to students. A recent study by O'Neill *et al.* (2014) in the context of Irish higher education explored the importance of the programme team having a collective philosophy of the design of the programme.

Table 6 shows a sample of responses categorised by theme of the market, staff, the economy, funding, viability/staying current.

Theme	*Drivers for programme design or review* Sample of Responses
Market	• To provide greater opportunities for graduates of Level Seven programmes • To provide ladders of progression • Falling student numbers • Skills shortage in ICT sector and unemployment rates
Staff	• Staff keen to attract students and provide postgraduate courses • Individual staff members identifying gaps • Individual members of staff but not from management • Individual and collective staff initiatives in my area, not altogether welcomed by managers or colleagues • Expertise of staff in the School • Staff are highly motivated to respond to the needs in the sector served
Economy	• The decline in apprenticeship has resulted in school leavers not being able to gain qualification in the timber industry. The HEA reported the decline in apprentice number and our head of school requested new programmes be constructed • Downturn in apprenticeship numbers • Fall in apprenticeship numbers; not happy with the merging of two trades into one half trade • Reduction in Apprentice numbers & providing good ladder structure • Lack of students in apprenticeship areas; Creating teaching hours • Industry wants graduates with particular competencies and there is demand from partner organisations for specific programmes to upskill their employees • To leverage an existing capability for a growing demand/market • Industry-specific requests. School reputation for delivery of CPD programmes • Food & Beverage highlighted as key areas for employment • Changing Marketing environment/demand for all things digital • The belief that a gap has been identified in the market • Financial mostly also a need to address the numbers of unemployed colleagues in the construction industry
Funding	• Funding model and government requirements • Industry feedback. Government strategies/requirements • Industry demanding LMA initiatives
Viability and Staying Current	• Falling student numbers and stale nature of programme offerings • Industry feedback. • Perceived market. Need to stay current with offerings. Response to changing trends and consequent demand in market • New developments in various disciplines • Need to diversify, need to attract highly motivated students • As a response to changes to communication and digital media • Skills shortage in ICT sector and unemployment rates • Maintaining position in the national arena, in the area of art & design • The need to move from skills base to increased knowledge/theory base. also the need to engage in a professionalization of a predominately craft/vocationally based discipline • The evolving media environment • Need to stay current with offerings. Response to changing trends and consequent demand in market • Industry demand and to some extent competition features also • Competition, targeting specific markets, and enhance programme provision

Table 6: Drivers for programme design or review

Unexpected drivers included:

- *To make a similar course viable*
- *Institutional driver was the back-fill of level 8; college driver for the general science degree. In the coming year, a review of programmes will be driven primarily by new professional body accreditation regulations*

In addition one respondent commented:

· *Proper Strategic Planning in department, Appointment of a School of Science Strategic Advisor, SL1 Role involved in Curriculum Design, New Sports Facilities, Strategy Day for School of Science*

Barriers to Programme Development

Two respondents said there were no barriers to programmes being offered, with one stating:

> *The School of Accountancy & Finance is very proactive and is supported in terms of new product development*

However, for the majority, resourcing in terms of availability/recruitment of sufficient (experienced) staff (especially part-time staff) and financing (budgetary restrictions) were the two main barriers preventing programme teams for developing new courses for 31 respondents.

Other barriers indicated included: inefficient marketing; lack of resources (human and physical); and the impact of an employment control framework. In addition, the predominance of traditional thinking and internal policies and finances was apparent in responses. A managerial approach along with a lack of dialogue and consultation with academic staff were also reported in this theme. This is in keeping with Sabri (2010) who suggests that the academic is absent from higher education policy and suggests a lack of consultation at institute level, for example in the development of learning and teaching strategies. Although it falls outside the scope this of this current study, a potential antidote to this is collaboration with Centres of Learning and Teaching, which

are located in both IoTs in the study.

Looking further at barriers, a number of others emerged: a lack of support and recognition for programme design; consolidation of offerings and the development of generic modules were considered problematic; the time required for development work and the lack of expertise and experience in programme design also featured strongly in responses; retired colleagues not being replaced which meant programmes were reliant on part-time staff was also identified as a barrier; a lack of online or flexible options in programmes and finally the difficulties in trying to collaborate with other schools were all identified by respondents. Table 7 highlights the themes of finance/resourcing, attitudes by stakeholders, institutional organisation and staff themselves as barriers to changes in programme development.

Barriers to Programme Design	
Theme	Sample of Responses
Finance and resourcing	• *Difficulty hiring and paying specialist lecturers* • *Financial (re increase costs of delivery for larger student groups as majority are practical based), external factors such as clinical training and project placements* • *Permanent Full time Staff numbers too low and sustained availability of relevant expertise not certain* • *Resources and funding-many of postgrad courses are Springboard funded* • *Costs with practical classes we operate at a ratio of 16 to 1 in some classes and 11 to 1 in machining classes also material costs wood is expensive* • *Staff who have retired or resigned have not been replaced; programmes running with a substantial part-time input* • *Staffing, Class sizes, IT support, Staff level of admin Lack of room availability, Shortage of specific room capacity such as laboratories* • *Number of courses on offer for space available* • *Lack of time to devote to development*
Attitudes (Management and Staff)	• *Traditional thinking - 'is not broken, why fix/change it'* • *All discussion and decision making on any issues related to new programme development is only addressed by school management team. Members of school team may be invited if the management think they have industry or research experience in the area. It is not possible to raise a new programme for wider discussion without school management approval* • *Imagination, creativity from management and staff* • *Managers and colleagues, resourcing,…./institutional inertia, lack of vision in the leadership of dept, school, etc*
Institutional organisation	• *Lack of adequate internal supports (finance office changing parameters, delays in HR recruitment, little recognition of work involved for Schools to engage in this activity by strategic development office etc)* • *Internal politics, finances. Generic modules being selected within programme, only to find they cannot be delivered in the identified Schools* • *We are on one hand trying to consolidate offerings so that more courses have generic co-taught modules. It can be difficult to tailor new courses within these constraints, as it may mean that the initial years of courses may be taking specific modules with very few students* • *Politics mainly....the drive for university status and the conception that mode 1 learning takes precedence over mode 2 or WBL* • *We have developed several courses in the school and now are operating at capacity. Resources especially support at institute level for online e-,... and a comprehensive catalogue of flexible/online modules is a significant barrier to development of a part-time online add-on course*
Staff	• *Lack of interest and/or knowledge from staff* • *Staff qualifications* • *Availability of qualified staff in relevant areas. Embargo on employing new staff* • *Lack of expertise in certain areas. Particular university's tend to have the 'cornered' certain areas of the market and for this reason it is often hard to break into that same market* • *Skilled staff to deliver very specialised courses on aspects of technology* • *We have been able to respond as needs be. However, we are open to losing academics because of the lure of PhD to other universities* • *Lack of expertise of staff in School and difficulties in co-operating with other Schools/departments* • *The retired HOS did all the programme development therefore the academic staff have very little experience of developing programmes*

Table 7: Barriers to programme design or review

Programme Design Issues into the Future

A particular concern from the researchers was that data would show that programme design can often come down to the team vulnerabilities – this was evidenced in the study and is shown in Table 8 below.

Programme Team Vulnerabilities	Academic Staff Concerns
Main anxieties facing programme teams	*Losing hours; these are tough times for us all with many challenges!* *Ownership of modules: even if in best interests of students and modules being designed by colleagues who have not updated their skills and who continue to teach using outmoded content/skills* *The limitations of resources, particularly with regard to staffing, have a serious negative effect on programme development*
Skill set to be developed	*There is more than one way to develop a programme and balancing Industry demand, student participation, teaching and learning excellence and resource management requires much skill*
Systematic approach needed	*More rational approach to programme design is required – consider appropriate pedagogy and assessment and should be better utilisation of eLearning resources in programme design*
Pedagogic Research Required	*In programme design there is a need to have input from research into T&L early in the process. Should have academic developers present at the early discussions around the development of modules; too often the debates are well advanced by the time staff come to design the assessment strategies and T&L activities*
Morale issues	*Morale is very low among staff and many are not willing to get involved in designing/validating new programmes unless they really are pressurised into it*
Culture of Learning and Teaching	*Programme design initiatives very limited due to nature of economic environment and the restrictions it imposes. However, this should not be a barrier to the development of a culture of teaching and learning design being developed and championed across the institute to improve existing delivery and create new opportunities for a new student population and college faculty in the development of teaching and learning delivery for the future*

Table 8: Programme design issues into the future

Conclusion

Academic staff who were members of programme teams from two Institutes of Technology in Ireland, including a range of programme chairs, were invited to complete an online survey.

Findings revealed that programmes that disappeared since the crisis were perceived as a result of either economic impact, being obsolete or part-time, or attributable to a specific discipline. Balancing this out, there were a number of newly emerging programmes in the form of a variety of Honours Degrees, Masters Degrees and Short Industry Courses across both institutes.

Drivers for developing new programmes or reviewing existing ones were seen as due to the impact of the market, the economy, funding, viability/staying current or staff attributes. Barriers to changes in programme development emerged under themes of finance/resourcing, attitudes by stakeholders, institutional organisation and staff themselves.

The role of what we called programme team 'vulnerabilities' also influenced what programmes were being offered in the institutions and these centred around issues of morale, the culture of learning and teaching, a need for more pedagogic research and further systematic curriculum design.

Overall, despite a number of identified barriers to changes occurring in programme development, the findings indicate that the IoT sector has shown how agile it can be in responding to the economic climate in how it designs and reviews programmes. The research was undertaken to help inform future development of curriculum design initiatives within the two institutions, addressing the strategic objectives of both and the broader national picture. Hunt, setting the agenda for higher education to 2030, states that "Teaching staff should be given opportunities to develop and extend their teaching capacity and should be encouraged to value their skills" (DES 2011, p.60). This is also

in keeping with the recommendations of the High Level Group report on the Modernisation of Higher Education (2013).

Learning and Teaching Centre within both institutes, although constrained by similar resourcing issues identified in the study, aim to provide such opportunities and we sought to measure the extent to which this had been achieved given the range of changes faced by academics and programme teams in designing courses in challenging economic and societal times. Future research plans include conducting in-depth interviews with a sample of stakeholders from both IoTs to further investigate initiatives being undertaken to not only to cope and react to such challenges to programme development, but how they are making best use of the expertise, creativity and aspirations of the staff in each institution to face into the years ahead.

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