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

Developing a Graduate Attribute Framework for Higher Education

Consultation I – Focus Group Results

Embedding Employability Project, Dundalk Institute of Technology

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Careers & Employability Services

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Introduction

Graduate Attributes are the core abilities and values a higher education institute community agrees all its graduates should develop. They are the abilities employers deem necessary for today's knowledge workers and graduate success (HEA UK, 2013). The National Framework for the Enhancement of Teaching and Learning in Higher Education identifies 'Student Success' as:

> *'Student success optimises the learning and development opportunities for each student to recognise and fulfil their potential to contribute to, and flourish in, society.*
>
> *To be achieved, this requires a culture in Irish higher education that values inclusivity, equity and meaningful engagement between students, staff, their institutions, and the wider community…' (Farrell & McEvoy, 2019)*

The Graduate Attribute agenda is key to fulfilling this promise to its students by Dundalk Institute of Technology, and this report outlines the results of our research with the goal of establishing our own graduate attribute framework. First, we review the development of the policy context driving graduate attribute development nationwide, and then turn to a discussion of relevant graduate attribute theories to ground our research. Finally, we present the main results of our first piece of research on graduate attributes, namely our Focus Group Consultation, and outline the implications.

HE Economic & Policy Context: The Drivers of Graduate Attribute Development

The global financial crisis of 2007, and the subsequent Great Recession affected Ireland's graduates' chances of employment success. With a contraction of most economic sectors, employment problems for graduates were bound to emerge. A cognizance of how graduates would need to be at their most flexible, adaptable, and resilient was palpable, but what were higher education institutes to do and where would they find the financial resources to support the graduate labour market?

The Irish education sector was impacted by a major cutback of €81 million, primarily in higher education and capital expenditure (Raidió Teilifís Éireann [RTÉ], 2009). The emergency intervention commenced a policy of deflation and austerity to offset the effects on the exchequer and to protect Ireland's international competitiveness (see Emon & Timonen for full discussion, 2019). To put this in perspective, the Irish

government was forced to spend €73 billion to bail out the banking sector, enabling difficult consequences for public debt, domestic investment, and unemployment (Government of Ireland [GOI], 2009; International Monetary Fund [IMF], 2009).

A hiring freeze on academic staff, increased taxes and a reduction in the salaries and pensions of public sector employees amounting to €11.5 billion (GoI, 2009), and the reinstatement of student fees not experienced since 1995, would all play a role. From 2017-2018, approximately €3000 in annual fees are paid by Irish full -time undergraduate students. Ireland is the second highest fee charging country in the EU for third-level education, behind the UK (European Commission, Education, Audiovisual & Culture Executive Agency & Eurydice, 2017). Nonetheless, record enrolments in Irish colleges continue. As of 2016-2017, a total of 43,569 students enrolled (Pigott & Frawley, 2019; cited in Emon & Timonen, 2019).

Many may have embraced higher education to avoid becoming an unemployment statistic, seeing unemployment increase from 4% to 4.5% in the seven years preceding recession (2000-2007) to 15% in 2012 (Duffy, FitzGerald, Timoney & Byrne, 2014; Barrett & McGuinness, 2012). The youth unemployment rate (15-24 years) peaked to 16% in August 2016 (Central Statistics Office [CSO], 2016), but pre-recession levels are returning 10.31% (CSO, 2019). These numbers may all the same not mean that our youth are seeking education to avoid unemployment; they do not tell us why individuals are unemployed, or if employed, or whether in the sorts of jobs commensurate with their educational level, qualification subject, or aspiration. Add to that, the emigration of young, qualified individuals, and is difficult to speculate as to the unemployment avoidance motives of increasing enrolment numbers (Carney, Scharf, Timonen, & Conlon, 2014).

Policy Context and the Development of Graduate Attributes: Unleashing the Power of Human Potential

Hope was on the horizon albeit with the goal of drawing on human potential, the stamina and the resources of future students and their lecturers. Enter the ‘Irish National Skills Strategy 2025’, which prioritises the development of workplace skills in all academic courses through work placement and/or promotion of lifelong learning.

The reasons for this stance are logical as follows. First, since the 1960s higher education in Ireland, as in the EU, has favoured the ‘human capital’ perspective, emphasising education as key to economic growth and productivity. Second, globalization accelerations towards the ‘smart’ or knowledge economy has facilitated

this perspective from the 1990s and beyond (Dukelow & Considine, 2017). Third, the goals of the Lisbon Strategy (2000) and its successor, Europe 2020, have all prioritized investing in people, entrepreneurship, and adaptive knowledge competencies (see Emon & Timonen for full discussion, 2019).

Third-level institutions in turn aim to gain competitive advantage by infusing this ethos into their promotional strategy and marketing apparatus. Irish University websites and prospectuses make clear their competitive efforts to create perceivable dialogue and storyboards speaking of institutional strengths and prestige all the while promising better jobs and lives after graduation.

Usually, this ethos is embedded in the Graduate Attributes they expect their graduates to learn and promote to meet the workforce once they leave. Moreover, this competitive language creates expectations for new students arriving to third-level education about how the university will serve their student experience as consumers. The exercise is notably one of marketing and advertising but does not necessarily preclude authenticity. The language attends exclusively to human capital overtones with attributes and values shouting to prospective employers and students of their world-readiness or labour market consciousness, e.g., come to our university and engage in 'global citizenship', 'global community', 'diversity', and find a(n) 'flexible career', 'international career', 'research centered', 'cutting edge', 'technology-focused', 'career-ready', 'creative and innovate', 'adapted lifelong learning', 'high profile' 'world-class', career etc.

Furthermore, when twinned with innovative pedagogy, these initiatives are held to generate outstanding graduates, even from Dundalk Institute of Technology (DkIT). Our hospitality programme(s), for example, have implemented their own vision of graduate attribute development through a curriculum constructively aligned with skills development learning outcomes and graduate attribute development. Indeed, we won a National Forum for the Enhancement of Teaching & Learning in Higher Education's DELTA Award for the programmes, hence our efforts to now develop an institute-wide set of graduate attributes for all who attend DkIT.

A Greater Purpose: Graduate Attributes Add Value to an Education

Graduate Attributes are the core abilities and values a university community agrees all its graduates should develop because of successfully completing third level education. They are the abilities graduates should embody to be agents of social good and contributing citizens of global and national societies (HEA UK, 2013). Graduate Attributes also relate to the abilities employers deem necessary for today's

knowledge workers.

The HEA UK Framework in respect sees Graduate Attributes as reconciling the literature on the nature of Higher Education as providing both ‘education as a good’ and ‘developing people as a skilled workforce.’ The Higher Education Academy UK (HEA) refers to Graduate Attributes as potentially being all or some of the following: Attributes and Capabilities; Specialist, Technical & Transferable Skills; Knowledge & Application; Behaviours, Qualities, & Values; Self, Social and Cultural Awareness; Confidence, Resilience and Adaptability.

The premise that graduate attribute frameworks adopt is that students are at university to take part in building a life beyond their degree, and that that life includes attributes facilitative to employability. Graduate attribute agendas dictate that students will and should be employees as well as citizens, community members and lifelong learners. Focusing on Graduate Attributes through a lens of employability in Higher Education prepares students to transition into all these roles and more. The central concept that graduate attribute development taps into is the notion that access to university is to provide greater life chances than not attending university.

Therefore, to encourage the development of Graduate Attributes deemed essential to contemporary employability and society, they need to be embedded in a multi-dimensional, and experiential curriculum, as well as in other institutional processes and provisions. The way to achieve this curriculum development is to introduce an institution-wide Graduate Attributes Model, and to evolve from the dominant ‘Knowledge & Skills’ paradigm. In other words, for the curriculum and strategic infrastructure to begin to focus on what students should know and should be able to do in a developing context of embodying the personal attributes and characteristics within a framework. To bring all students in alignment with the ‘Graduate Identity’ most desired by the institution in accordance with their graduate attribute framework is the goal.

Employability and Graduate Attributes go together. Remember, employability is perceived as a set of achievements, skills, understandings, and personal attributes (Yorke & Knight, 2006). We need to be therefore careful to value employability as a personal state that individuals occupy, and Graduate Attributes are all about creating the best possible personal state that a graduate occupies upon meeting the job

market. Remember too that employability is not the same thing as employment. In contemporary job markets, jobs require fast-moving, innovative, and often transformative working spaces. Graduate Attributes lend themselves to employability readiness as a state of mind or maintaining work-readiness through continued professional development or training. A successfully integrated graduate attribute framework leads to a state in which employability is a work in progress throughout a graduate's life. Employability is not mutually exclusive from the Personal Attributes one possesses; they go hand in hand together.

When it comes to developing a graduate attribute framework, an employability statement should be drawn up to reinforce the purpose of higher education such that it intends to be a living statement reviewed periodically, regarding the strategic and practical aims of the Graduate Attributes policy in relation to the institution's mission. This project will hence align a meaningful Graduate Attribute Model to the Employability Focus/Framework for DkIT (Dundalk Institute of Technology). The embedding of initiatives for work-related learning and personal development requires a Graduate Attribute Model to unify the strands of employability and the student's development, thereby, engendering human, social and cultural capital (See HEA Embedding Employability Review; Quendler & Lamb, 2016).

Graduate Attributes: A Promise to the Future

Despite a ubiquitous vocabulary, Graduate Attributes can be understood by different people to denote vastly different teaching and learning activities (Barrie, 2007). Moreover, there are many stakeholders and therefore many perspectives to take account of when discussing what constitutes a graduate attribute or desirable attributes. Stakeholders typically include society, industry, employers, management and funding bodies, university policy makers, students, and teachers. A very diverse group of perspectives. There is also the difficulty of achieving Graduate Attributes in a specific discipline (e.g., Engineering, Shadbolt, 2016), or applied context.

Some make the point that an assessment or learning strategy may only be relevant to some Graduate Attributes, and not necessarily relevant to Graduate Attributes key to the institution's marketing mission or institution-wide pedagogies. We required a Graduate Attribute Model that works for us, with uptake at least within curriculum design and renewal. Next, we outline some of the frameworks that attracted us as suitable for Dundalk Institute of Technology's mission. We outline the topline structure and content of each via research findings evidencing their successes or shortcomings. We identify our chosen model, namely the Changemakers Framework, and show how our results prompted us to adopt and modify this framework for our own purposes.

Graduate Attribute Frameworks: Key Theories and Research

We turn now to an outline of three main graduate attribute frameworks. As we know public policy debates about Graduate Attributes focus on a) What attributes should a graduate be able to evidence; b) to what extent are they disciplinary or generic; and c) to what extent are they about employability. Further, employers have views about what attributes graduates should have mastered (e.g., AHECS, 2020), and if they do not, they complain about their absence when missing (e.g., Tran, 2015). Rich (2005), discusses employability as a readiness construct, and this was helpful when drawing our Employability Framework (see Employability Statement Document) as readiness relates both to skills-training and a state of mind for keeping up the skills-training necessary for continuing employment.

The HEA Framework UK

The HEA UK Framework in respect of the previous point on readiness, denotes the following attributes as crucial to any graduate attribute framework: Confidence, Resilience and Capability; Specialist Technical & Transferable Skills; Knowledge & Application; Self, Social and Cultural Awareness; Experience & Networks; Behaviours, Qualities & Values; Enterprise & Entrepreneurship; Career Guidance & Management; Reflection & Articulation.

The HEA UK Framework views Graduate Attributes built on these construct foundations as reconciling the literature on the nature of Higher Education as providing both ‘education as a good’ and ‘developing people as a skilled workforce.’ However, discourse about employability has become central to much policy discussion as previously discussed. Indeed, employability discussions in isolation have begun to challenge the nature of higher education worldwide. In a world post the great-recession and now the worldwide pandemic; attending to employability as it relates to concrete outcomes for graduate prospects will be essential (Irish Times, 2021). Likewise, graduate attribute frameworks must follow suit. We are keen that any framework we choose must avoid a polarised proposition where Employability Exercises are seen as a threat to Higher Education learning, by diluting the Knowledge Acquisition (e.g., Speight et al., 2013).

These issues always raise pedagogical questions, for example, increased employability does not lead to an improved labour market value. Sometimes, most jobs are for very specific-skills qualifications. As previously discussed, some view Graduate Attributes as a set of skills and indicator skills. These labels can be used to describe explicit and implicit skills, where there are domain-specific and subject-specific tasks, for which students should have competencies. However, Graduate Attributes are also about domain-general skills, e.g., critical thinking skills or independent thinking, which denote the soft skills so often valued by employers (e.g., AHECS, 2020). The final analysis will show that whatever we decide, we must focus on the student and employer equally as consumers.

The HEA Framework advocates an inclusive perspective. It does not put employers above students or academics as it aims to develop a mutually agreed perspective by bringing these groups together. Consider when they endorse the view of identifying activities conducive to skill-based development (Daniels & Brooker, 2014) such as: internships, group projects, goal completion projects (year-long dissertations), podcasts, presentations, concrete outputs (websites); written assignments, role play, portfolios, industry-partnered projects, entries for awards. Embedding employability in the curriculum via activities that develop and promote graduate attributes typical of those who are successful in gaining and sustaining fulfilling employment lifelong is the goal.

What's more, this framework advocates for relevant work experience as key to any graduate's or apprenticeship-led pathway or curriculum, whether formal or informal, that is: placements, casual work, volunteering, sports and clubs. Yet, Irish universities, aside from the Technological Universities remain academically focused with little emphasis on work placements and internships (Emon & Timonen, 2019). Dundalk Institute of Technology places an emphasis on the importance of work placement for all programmes where possible, and in those respects the HEA Framework has overlap and much to offer our graduate attribute plans as we will look at in more detail when we outline the results of our full programme of research within the remit of this project. These activities are seen to promote self-efficacy and better academic performance on practical assessments.

While the HEA UK framework presents us with some excellent ideas about the sorts of graduate attributes we are to expect to uncover from our research as relevant to our DkIT graduates, there are questions and resistance encountered regarding the structuring and implementation, and even necessity of a graduate attribute framework. Our own Steering Committee presented us with an important question about this framework as we will now explore…

Are Subject-Specific Skills Enough Though?

Does the conflict between the general versus the specific graduate attribute requirements of subject-specific programmes invalidate a graduate attribute implementation? There is much debate as to the nomothetic versus idiographic nature of graduate attribute adoption, and professions-led programmes have their own attribute learning outcome criteria. While it has been found that specific disciplines require more or less of some kinds of skills development or attributes via graduate attributes, be they for nursing and midwifery (Cummins et al., 2018), STEM subjects (Wakeham, 2016), Computer Science (Shadbolt, 2016), or even

accountancy (Jones, 2014), some attributes are worthy of development regardless of discipline. Key research has shown that promoting the cognitive, social, and affective attributes necessary for mental health or emotional wellbeing are important in sustaining employability in the long term and so worth encouraging (Kember et al, 2017; Oraison et al, 2019). Lifelong learning as a standalone graduate attribute should be encouraged for it promotes sustainability in chosen career paths and professions (e.g., Quendler & Lamb, 2016). Indeed, most graduate attribute frameworks are structured according to capstone attributes. These are the attributes deemed important to develop regardless of subject discipline or background, for example, confidence (Robertson, 2021), teamwork (Bree, 2019), and communication skills (Maxwell & Armellini, 2019; 2020).

Next, we explore a framework to tackle this question by advocating capstone graduate attributes. Major graduate attributes worthy developing for all students for graduate success are identified, alongside specific and general sub-attributes.

The ChANGE Framework – Graduates as Changemakers

Maxwell & Armellini's (2019) framework presents a contemporary take on graduate attribute theory. Developing their framework from Hull University's 'Changemakers' paradigm, they identify four contemporary and relevant pillar Graduate Attributes as critical to student success, namely Change, Collaboration, Self-Direction and Ethics. Their framework presents a wheel of capstone attributes and sub-attributes, the most popular take on graduate attribute frameworks for Irish Universities at present. Critically, they set their framework within a modern societal context. See diagram below:

<Internal Report – Image not for circulation on SlideShare/SSRN due to copyright> See Maxwell, R., & Armellini, A. (2019). Identity, Employability and Entrepreneurship: the ChANGE Framework of Graduate Attributes. *Higher Education, Skills and Work-Based Learning, 9(1)*: 76-91.

Taking their adoptive context into account they also see four important facilitative problems as requiring attention:

1. Employability buy-in at the strategic level/ university strategic plan

2. Embedding Employability across all academic disciplines via a toolkit/checklist

3. Subject Knowledge

4. Digital Fluency

Dundalk Institute of Technology's Strategic Plan promotes the development of a graduate attribute framework to help all graduates adapt to a future, nowadays loaded with labour market uncertainly and the rise of innovative technologies. The Changemakers Framework makes a concerted effort to accommodate attributes that will help graduates meet the dynamic nature of their labour market futures. Like the previous frameworks, they advocate a 2-stage phasing as necessary to develop a framework for any singular institute. First, they identify the necessary and sufficient Graduate Attributes. Second, support staff are required to embed the attributes/employability attributes within all subject areas through the writing of accessible module learning outcomes that evidence a constructively aligned approach to curriculum design (see Biggs & Tang, 2011). Much like what we later found for DkIT, collaboration and digital fluency for innovative technologies are emphasised.

Moreover, they develop a toolkit (i.e., COGs) to align capstones and their sub-attributes to skills and then tasks, or course level appropriate learning outcomes. There is real benefit in adopting an integrated framework as a constructive alignment toolkit enables staff to write assessable learning outcomes that support student progression and enable achievement of the Graduate Attribute framework objective.

It is therefore no surprise that an approach advocating Graduate Attribute significance for students and their role in life-long career learning could enhance their experience and engagement with Graduate Attributes, and we will show in our results section how our framework maps to theirs. However, there are those all important strategic and facilitative supports that any graduate attribute framework requires. Let us take a quick look at how our Australian colleagues are working on this problem.

The Importance of Strategic Supports: Australian Learning & Teaching Council - National Graduate Attribute Project

A substantial graduate attribute endeavour is the Australian Learning & Teaching Council's 'National Graduate Attribute Project'. Led by Simon Barrie and his colleagues, their aim is to develop the existing international community of graduate attribute scholarly practice. Specifically, this consortium set about to inform and reinvigorate institutional knowledge regarding curriculum renewal to successfully achieve Graduate Attributes.

Barrie et al. (2009) and his colleagues alongside a commonwealth-wide network of institutions conducted one of the largest known empirical examinations of Graduate Attributes. We will detail these findings to critical reflect how they are likely to be mirrored by our own students, employers, and teaching colleagues.

Barrie defines the purpose of Graduate Attributes as providing a structured plan to engage in renewal of curriculum design and the provision of learning experiences at a university (Barrie et al., 2009). They are the core abilities and values an institution promotes its graduates should develop by the time they successfully complete their university studies.

Barrie et al. (2009) confronts the notion that Graduate Attributes are a mere marketing exercise by investigating the reasons why academics are unlikely to develop graduate attribute curricula. He and his have sought to understand more about the nature of the institutional and systematic barriers evident when understanding how Graduate Attributes are successfully enacted or not. He proposes Graduate Attributes are best used as an orienting statement of sought education outcomes best used to inform curriculum design and the provision of teaching and learning.

A Graduate Attribute Framework of 8 Interacting Elements was discovered by this work, detailing how they affect an institution's efforts to encourage curriculum renewals to achieve Graduate Attributes:

1. *Conceptions:* how people understand Graduate Attributes
2. *Stakeholders:* various groups have different stakes in the articulation and development of Graduate Attributes (students, curriculum developers, industry groups, professional associations)
3. *Implementations:* the way a university coordinates and approaches the implementation of its graduate attribute policy is often neglected
4. *Curriculum:* general curriculum structure (modular/postgraduate/pedagogical)
5. *Assessment:* the explicit embedding of Graduate Attributes in assessment; constructive alignment with Graduate Attributes...
6. *Quality Assurance:* the way the organisation monitors and assures the development of Graduate Attributes will be the effective driver of implementation.
7. *Staff Development:* the way the university enables and engages staff in efforts to foster Graduate Attributes- leads to effective implementation.
8. *Student-centred:* no matter how much effort universities put into teaching Graduate Attributes; the strategy has not worked unless it is perceived by students to have actively engaged them in developing worthwhile attributes.

These interactive elements are important to understand, especially when it comes to analysing our focus group feedback, which we will discuss now. Graduate Attributes in Australia are identified as the central plank of the next generation of outcomes-based national quality assurance systems, which is why the strategic facilitation is so important.

Our Focus Group Research: Voicing Together a Graduate Attribute Framework

Last year we received funding from the National Forum for the Enhancement of Teaching and Learning in Higher Education – the Embedding Employability Project. Due to Covid-19 the research commenced early in 2021. A team of researchers, led by Catherine Staunton, Head of Careers & Employability Services set about designing a programme of research to evidence-base a graduate attribute framework specific to Dundalk Institute of Technology.

Being mindful of all the National Forum's values framework of openness, inclusivity, authenticity, collaboration, learner-centredness, and scholarship, a research programme commenced. How did we endorse the values framework in our design plan? We created the following mapping to keep us surefooted:

National Forum's Values Framework – Informing Authentic Research Design:

Collaboration – Engage Everyone, Authenticity – Listen to Everyone, Inclusivity – Count Everyone, Scholarship – Develop a Framework, Openness – Share Results with Everyone, Learner-centredness - Develop a Framework for Everyone...

The National Forum's PACT Commitment to Professional Development Badge for those teach in higher education places these mapped values within their professional development framework. To find out more about the National Forum, and their approach to research for the enhancement of teaching and learning in higher education, one of our researchers undertook the e-Portfolio Badge and submitted 2nd July. (See elsewhere for report on Employability re development of an Institute-Wide Employability Statement.)

Study 1 – Focus Group Consultation

Commencing with a literature review of graduate attribute research and macro-research design proposal, the project management and documentation took place via a Microsoft Teams group specific to the Steering Committee.

Method

Stakeholder Oversight. A Steering Committee was created to advise on the research project. Members constituted Heads of Departments, Head of Careers & Employability Services, Head of the Centre for the Enhancement of Learning & Teaching, Programme Directors with excellent employability track records, and Employer representatives. Every three weeks we presented our progress and plan to this committee, and they provided constructive feedback and oversight.

A qualitative-quantitative exploratory design was selected (Creswell & Creswell, 2018), where a qualitative focus group study aims to uncover an authentic set of graduate attributes and a follow-up quantitative questionnaire will identify consensus on a headline framework. We report on our Focus Group findings now and add our survey findings in the coming weeks.

Participants. Thirty-five participants across all schools and services representative of institute-wide voice on employability took part in a focus group interview via Microsoft Teams. There were eighteen men and seventeen women (more interviews are forthcoming at this point). Age range was not deemed relevant to this part of the research project, they differed by stakeholder, that is, whether they were students, graduates, employers, or staff. We are awaiting additional student and employer participants.

Subject Schools and Services Represented: Centre for Education, Learning & Teaching, Research & Postgraduate Services, Library Services, Careers & Employability Services, Lifelong Learning Centre, Student Union, Student Services, Employers | Informatics & Creative Arts, Business & Humanities, Engineering, Health & Science, Social Science & Professions.

Design. We chose a 4x5x5 Between-Between/Within- Within design: 4 Stakeholder (Student, Graduate, Employer, Staff) x 5 (Employability Champions, Academic Staff, Professions Cluster Staff, Employers, Students) x 5 Themes (Understanding of Employability at DkIT, Cultivating Employability Skills in the Curriculum, Potential Attributes for DkIT Graduates, Employers' Role in Employability, DkIT's Role in Helping Recent Graduates, DkIT's Responsibility Towards Socially Disadvantaged Students). A qualitative-quantitative exploratory research design was selected to uncover employability best practice and then explore its institute-wide distribution (Creswell & Creswell, 2018). In this report we focus on the qualitative component and the graduate attribute theme. We will add the survey results in Consultation II when they are returned by end June 2021.

Materials & Procedure. We developed a set of Themes and a Verbal Protocol for the Interviews (See appendix). An Information Sheet and set of Email Correspondences for each stage of communication with participants was designed to facilitate smooth running of the interview process.

Audio-files were recorded without image as permissions for moving image are not allowed when research is for consultation purposes only, as per DkIT Ethics Guidelines. The audio-file was transcribed for notes purposes only, and the files were deleted within 72hours from Microsoft Streams. These notes were approved by the participant via email, and they were anonymised and added to a Focus Collection Booklet (an independent report for the project). We used the scoring key to code the booklet for each theme, and we focus here on the graduate attributes research results.

Scoring Key & Inter-rater Reliability. A stick-a-brick Thematic Analysis map denoting the categories of responses relevant to each theme was developed to provide a scoring key. We were only interested in specific mentions related to each of the five themes other than context or full quotes. To test the qualitative fit the two coders independently used the key to score several protocols each. There was a

correspondence of 70-80% for mentions of interest. Adjustments were made to further differentiate Embedded Employability [EE] into three distinct codes, namely – Embedding Employability in the Curriculum [EEC], Employability Activities [EA], and Employability Readiness [ER]. For the purposes of this report, we refer to [GA] as Graduate Attribute and [GAD] as Graduate Attribute Development. Only these information snippets (i.e., utterances) were used in the analysis.

Focus Group Coding of Segments

Scoring Key – Emerging Thematic Categories

Graduate Attribute	[GA]
Graduate Attribute Development	[GAD]
Curriculum Structure & Content	[CSC]
Assessment Strategy & Assessment	[CA, Exam, Placement]
Learning Outcomes	[LO; Technical LO; Soft Skill LO]
[EE]	
Embedded Employability in the Curriculum	[EEC]
Employability Activities	[EA]
Employability Readiness	[ER]
Career Management	[CM]
The Employer	[Employer]
Employability Best Practice Examples	[Best Practice]
Forward-Looking Employability Ideas	[FL Employability]
DkIT-ness	[DkIT-ness]
The Future of DkIT	[Future DkIT]
Voiced Emerging Problems	[VEP]

**The emerging best-fit themes * The emerging best-fit themes were mapped to qualitatively feedback proportionately to Employability Statement [All], Employability Guide [All], Graduate Attributes Framework, and Employer Forum.*

Results & Discussion

The results now show the nominal unique and nominal volume counts for capstone graduate attributes and sub-attributes for the focus group in total and per grouping or stakeholder. The count is continuing with a small number of students and employers yet to provide interviews. Two topline findings are of interest here: (i) The total number of unique mentions of capstone attributes per participant, and (ii) the total number of unique mentions of capstone attributes per participant per identified cluster of interest (i.e., employability champions professions, employers, students, academic staff).

A total number of unique mentions of capstone attributes was reached (n=139). Of that six capstone attributes emerged as candidates to structure the graduate attribute framework, namely – Confident (n=32), Communicative (n=28), Collaborative (n=27), Enterprising (n=15), Technical (n=21) and Practical (n=16). Figure 1 details the percentage of unique mentions per participant as per cluster for each of the six capstone candidates.

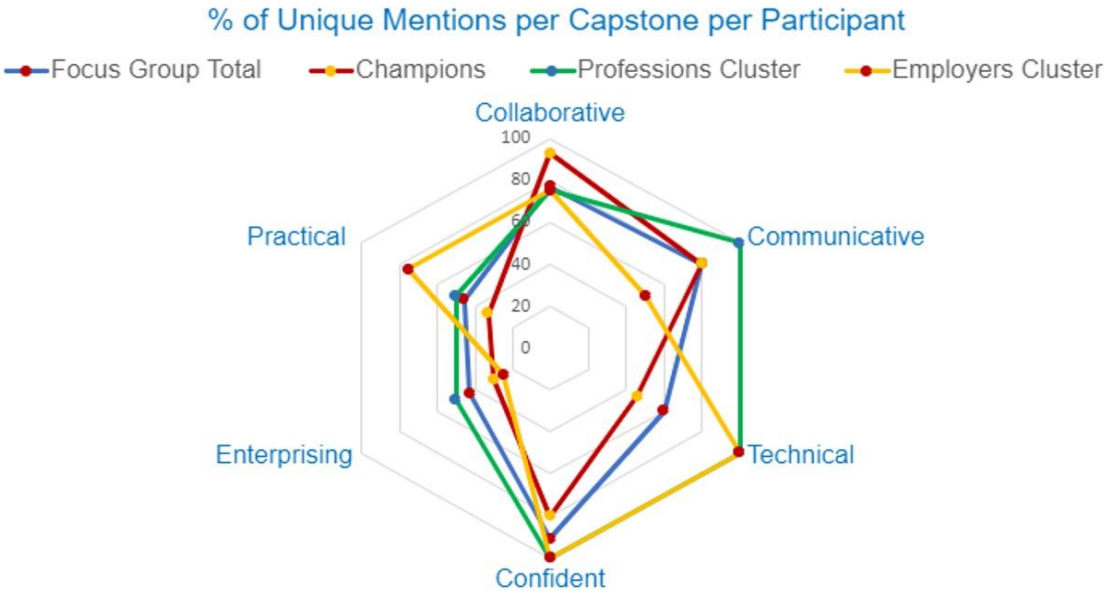


Fig 1. The percentage of participants from each cluster mentioning the six capstone graduate attribute candidates.

Specific counts of unique mentions per capstone attribute corresponding to these percentages are presented in Table 1 below:

Table 1: Specific counts of unique mentions per capstone attribute per cluster. Highest counts per cluster in emphasis.

	Group of 35 *Focus Group Total*	Group of 15 *Champions Cluster*	Group of 4 *Professions Cluster*	Group of 4 *Employers Cluster*
Collaborative	27	**14**	3	3
Communicative	28	12	**4**	2
Technical	21	7	**4**	**4**
Confident	**32**	12	**4**	**4**
Enterprising	15	5	2	1
Practical	16	5	2	3

The professions mentioned the majority of the six capstone attributes. It is possible that they know the value of all six, but surprisingly employers did not give priority to enterprising. Rather, they preferred 'Practical'. There was no detectable preference for the capstone 'Practical' overall, aside from employers. That said, the cluster sample sizes are too small to make reliable inferences, and we shall wait for the survey to tell us more.

In total there were approaching 400 mentions of other less mentioned attributes increasing with expected student and employer participants to follow. Documenting these attributes in a quantitative table revealed a mass of single-digit attributes, many of which would be key to other frameworks in the literature (e.g., networking, knowledgeable, critical thinking, resilience, adaptability, flexibility). Using a process of consultation with our employability champions and applying theoretically and practice-informed judgement we choose 20 of these to stand as sub-attributes to each of the four capstone attributes. Capping at 5 graduate attributes per capstone we allocated them four-ways divided amongst the capstone quadrants. The numbers were too small to make any quantitative inferences, and the wireframe framework engineered is now facing a rank ordering test in our survey (results due June 16, 2021).

Personal Attributes or Graduate Attributes? The role of personal qualities

Of these over 40% constitute personal attributes or qualities. Examples include 'they're lovely students', 'they're so well behaved', 'they're hard working', 'they're

homebirds' and so on. The non-inclusion of many of these phrases within the graduate attribute literature decided a qualitative difference indicative of a personal attributes or personal qualities. Figure 2 shows an approximate distribution of a volume analysis of the absolute total number and relative percentage of capstone and personal attribute mentions for the focus group in total.

*This donut chart is in flux and will be replaced once focus groups are all in.

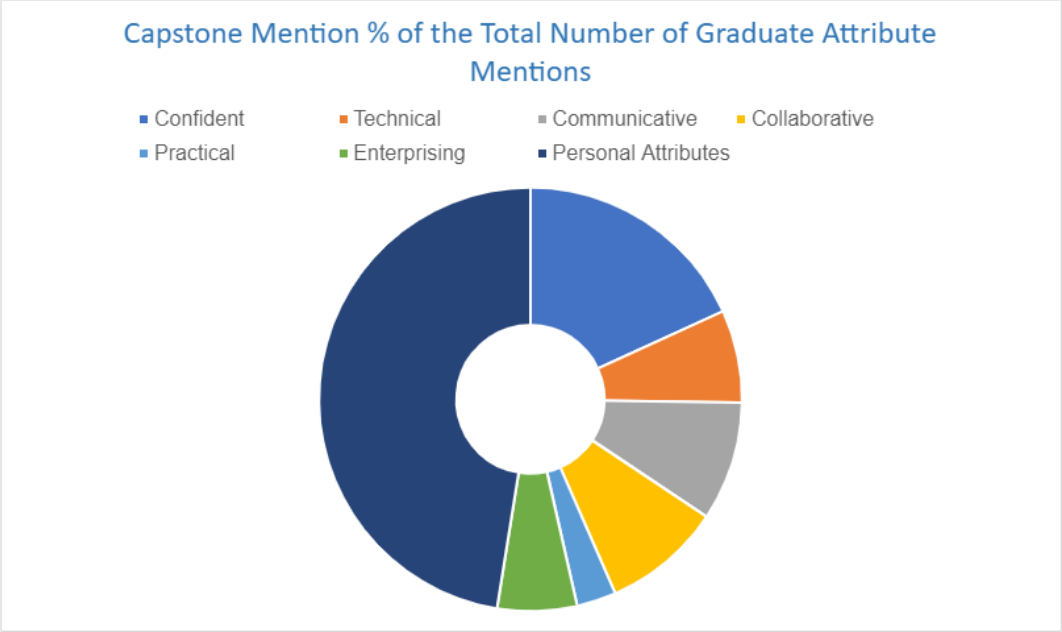


Fig. 2. approximate distribution of a volume analysis of the absolute total number and relative percentage of capstone and personal attribute mentions for the focus group in total.

This result is consistent with our unique mentions per capstone per participant analysis previously. We do not expect any major additions to challenge these findings to date. Nonetheless, our survey will return detailed information as to the nature and possibility of the personal attributes relative to drawing up a set of mindset statements. A roundtable analysis extracted a set of public-facing qualities representative of 5-7 related qualities each. This list will be presented to our survey participants to help us create three mindset statements to accompany our graduate attribute framework.

Moreover, there were many mentions of graduate attributes other than the capstone attribute candidates, and these numbers will increase as new data arrives. These we termed sub-attributes, because many are research literature evidenced to relate or complement the capstone attributes. From our focused cross tabulation of all utterances constituting graduate attribute mentions we collated the most often mentioned sub-attributes and some specific DkIT-related attributes of interest within a cruciform model (with a quadrant per capstone and its sub-attribute correlates).

Our survey will bring more clarity to rank ordering these sub-attributes in terms of precedence per capstone quadrant or indeed bring new ones to light as Figure 3 shows:

Capstones and Sub-Attributes: Our Wireframe

Fig.3. Our Graduate Attribute Wireframe – Capstone Attributes and Sub-Attributes

Figure 3 presents a wireframe of our Graduate Attribute Framework, its capstone attributes, and sub-attributes. Our present capstones are Confidence, Communication, Collaboration, and Technology-Driven. The Technology-Driven capstone is a synthetic composite designed to accommodate the three-way tie for the fourth capstone between Technical, Enterprising and Practical. Our data shows that Technical and Practical are used interchangeably and compete with one another to represent similar skills emphasis. Enterprising may have its roots in the resource-led structure of DkIT due to the Regional Development Centre on site, as well as the institute's strong graduate employment performances in the business and accountancy labour markets year on year.

Further considerations explaining this three-way tie may be due to historical resource-led programme development within the school structure and programme development of the institute. We demonstrate next in Figure 4 how the composite Technology-Driven resolves this legacy issue and gives leeway to the political reality that DkIT is set to become a Technological University in these next few years. Technology by necessity must be at the heart of every programme as we move towards Technological University status.

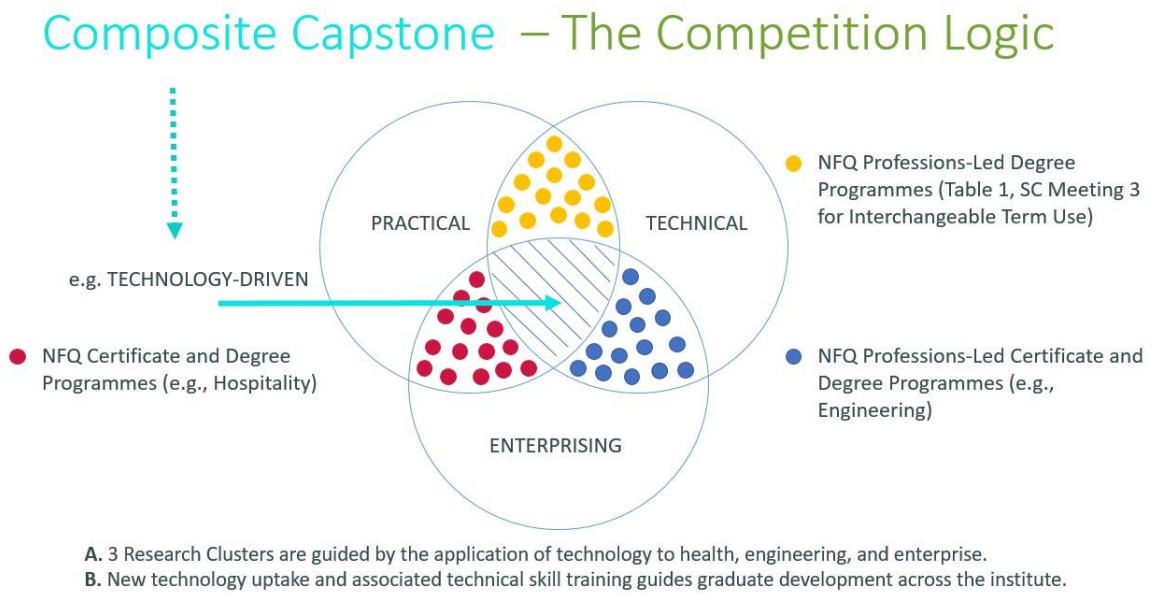


Fig. 4. The legacy resource-led logic of competition from within for the fourth capstone attribute. To be competitive from without we have created the Technology-Driven attribute to align with Technological University designation plans.

Our Graduates are Changemakers!

Upon examination of the nominal and threshold distribution of unique and voluminous counts of graduate attribute mentions we noted that our wireframe's topline capstones and sub-attribute themes had an uncanny resemblance to the Changemakers Framework (Maxwell & Armellini, 2019). See below.

<Internal Report – Image not for circulation on SlideShare/SSRN due to copyright> See Maxwell, R., & Armellini, A. (2019). Identity, Employability and Entrepreneurship: the ChANGE Framework of Graduate Attributes. *Higher Education, Skills and Work-Based Learning, 9(1)*: 76-91.

Fig. 5. How Our Findings Correspond to Capstone Attributes from the ChANGEMAKERS Framework (Maxwell & Armellini, 2019).

As Figure 5 details our Collaboration capstone corresponds to the Changemakers Collaboration capstone; our Communication capstone corresponds to the Changemakers Change capstone denoting that change in their framework comes about through communication skills; our Confidence capstone corresponds to the Changemakers Self-Direction capstone highlighting some similar aspects. That said,

their Ethics capstone is readily replaced by our stealthy composite Technology-Driven.

One might propose that DkIT are the ‘Implementers’ rather than ‘Philosophers’! The values or mindset piece to be developed from out personal qualities data may relate to this ethics quadrant albeit separate to the framework. We will detail some research on the personal qualities and attributes once our survey reports back.

The Technology Changemakers: Our Title Line and Taglines

The results from our Focus Group Consultation are clear and to the point. There are key graduate attributes that most of our participants agree DkIT graduates develop in the course their studies and possess upon graduation. Those graduate attributes are our Capstone Graduate Attributes, and they structure and guide the generic and unique sub-attributes found representative of our graduates.

From these topline findings we have developed a running title line ‘The Technology Changemakers’ adopting much from Maxwell and Armellini’s (2019) dynamic and contemporary framework. These taglines are subject to change, and Academic Council No.176 has had an update on the project with effect that ‘Practical’ may require a Capstone accommodation. A vote on approval will take place in September at Academic Council No. 177.

Proposal: THE TECHNOLOGY CHANGEMAKERS
Capstone Graduate Attributes: T and 3C's
We are Technology-Driven and Technological Innovation Drives All We Do
We are Communicators, Collaborators and Confident Changemakers

Presently, we plan to progress to Academic Council with the Big-T and 3C’s wireframe calling out the taglines ‘We are Technology-Driven and Technological Innovation Drives All We Do’, and ‘We are Communicators, Collaborators and Confident Changemakers’. Aside from being easy to remember, the Big-T and 3Cs

may prompt or prime audiences to associate our graduate attributes with iconic centres of excellence at DkIT.

Priming Excellence Associations: Semiotics of the Big-T and 3Cs

There are several reasons why we chose the Big-T and the 3C's complementing our evidence-based research. Let us examine the semiotics...The Big-T for Dundalk of Institute of Technology can denote **T**echnology-Driven graduate attributes, **T**echnology, High Quality **T**eaching (as per our Teaching Excellence Awards on the National Stage), and Research-led **T**eaching (i.e., CELT and international academic peer-reviewed staff working there).

The 3C's may represent the three main **C**apstone attribute candidates 'Communication, Collaboration, Confidence', or may prompt audiences to think of our three Research **C**lusters, or even the three **C**-grades our apprentices require for entry to a promising future. Other implicit inferences or associations may come to mind, but it represents a good start to thinking about the framework as a marketing apparatus.

Embedding Graduate Attributes in the Curriculum - Next Steps

Ideally, what we need is to facilitate the exchange of good practice among staff members at DkIT; it is about making these practices explicit and known. From our Focus Group data, we have charted best practice according to categorical criteria demonstrating CV-Worthy material. We plan to provide a streamlined guide to department lecturers and Heads of Programme/Heads of School as to the learning activities, CV-Worthiness criteria of these activities, and how to indicate the corresponding graduate attributes developed.

For some educators, the curriculum is perceived as a linear sequence of content blocks. Embedding employability via graduate attributes may simply mean the addition of more blocks; but others disagree. Redesigning the assessment strategy to engender graduate attributes to create efficiencies by way of higher-quality employability learning activities is essential. It is about embedding employability via graduate attributes where most intelligent, for example, in applied courses, applying theory courses, practical, and tutorials. Quality Assurance is the motivator here, and students need also to be engaged; they need to understand the justification for the assessment typology across and between the programmes of learning and course of study they take.

Embedding Graduate Attributes in the Curriculum: Careers Services and Online Resources

The curriculum tools must be provided to embed employability, whether to engender graduate attribute development or simply to practice key technical skills. Changing the range of assessments to accommodate employability or graduate attribute development is a collaborative process. Notwithstanding this, note that a coordinated and multi-level institutional strategy inclusive of a diversity of practices to achieve a diversity of outcomes, could draw on the existing practices/resources rather than developing novel resources.

That said, an online toolkit via an institute webpage is a key deliverable for us. We propose this endeavour requires three key phases to take our research findings and create an effective graduate attribute implementation. Uptake and sustainability of any graduate attribute framework is more likely if those who it is helpful to are the ones involved in its design as are our lecturers, programmes leaders responding to our focus group and survey.

Our Graduate Attribute Framework - Phases of Implementation:

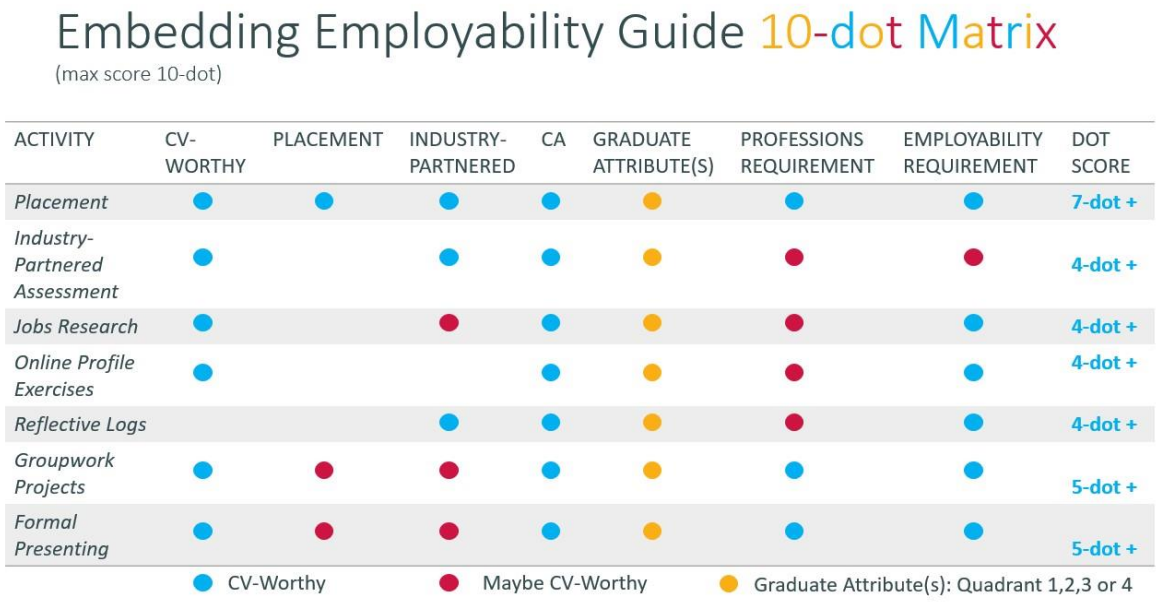
Phase 1 – Synthesis from Practice (Focus Group and Survey)

Phase 2 – Co-create from Research with Others (Focus Group and Forum)

Phase 3 – Grow a Community of Practice (Institute Wide Framework)

Next a negotiation of staff understandings is required (via our Online Forum/Webpage, Embedding Employability in the Curriculum Badge, and Graduate Attribute Workshops). Making a start on how to chart the successful use of graduate attributes to enhance employability learning activities, we have created a best practice crosstabulation using our focus group responses, as Table 2 shows.

Table 2: Embedding Employability Guide 10-dot Matrix



Working from left to right we have a subset list of relevant employability learning activities and used a matrix of dots to demonstrate why the activities listed are best practice, that is, CV-Worthy. Blue dots correspond to embedding employability criteria such as industry-partnered, placement oriented and so on. Pink dots denote that depending on the activity content more embedding employability criteria may apply. Finally, yellow dots denote that these activities automatically engender graduate attribute development; more than one capstone or a collection of sub-attributes depending on the content and structure of the activity. Any activity with 3+ dots we deem to be of an employability activity threshold. This list runs to 20+ items based on responses from our focus group consultation, and we are waiting for our survey to tell us more about other best practice examples (e.g., Role Play, e-Portfolios). This matrix will be comprehensive and a living document allowing new innovative employability activities, especially those which develop digital capacity or are technology-driven.

The lecturers, programme leaders and programme directors should familiarise themselves with the graduate attribute framework and this matrix to self-assess graduate attribute development to provide annual feedback via Microsoft Forms (or similar), when reviewing curricula employability for School or Careers &

Employability Services. A success chart and self-assess process to enable oversight and measurement of graduate attribute development success is underway (See Steering Committee slides June 03, 2021).

Some pointers on quality assurance when embedding graduate attributes in the curriculum: student feedback is essential; annual programme reviews should attend to relevant attributes and attribute development; constructive alignment against industry standards should be assessed; online or in-person course accreditation for staff/faculty should be available; incentives for successful deployment are an option; and finally, the most successful applications (e.g., Video Work Placements DkIT), should be documented in a shared practice space to celebrate and inspire those who wish to champion employability in their curricula.

A 'General Discussion' section will be added once the survey results are analysed and added to the report's results section.

Conclusion

A key reason to develop a graduate attribute framework is to provide a means to align with a national university-led agenda. To standardise Graduate Attributes as a key performance indicator as well as set ourselves apart from the competition, the exercise is worthwhile.

It is appropriate to next consider how assessment will be key to developing, or renewing, curricula with Graduate Attributes in mind. We have worked on a potential integration of graduate attributes with curriculum activities denoted as employability savvy, and we will present on this topic shortly corresponding with Consultation II.

Educators have recognised the potential for Graduate Attributes if properly conceived to inspire constructively aligned curriculum renewal, when the curriculum is thought of in terms of a diverse set of learning outcomes. That said, we can promote employability enhanced continuous assessments, but we cannot replace teaching reflective practice aiding authentic take-up of training and guidance to enhance teaching via assessment or innovative activities. A major challenge is that curriculum renewal is a complex process; and there must be provisions to support staff and development. The alternative is to increasingly see employability activities as presenting lecturers with the freedom to enhance learning beyond assessment.

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