1. Introduction: setting the scene

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This compendium offers insights into the ways in which universities have taken data-informed approaches to Careers and Employability strategy and operations based on an approach which is fundamentally about seeking to understand students' own perceptions of their career development starting points and journeys at scale and to respond by meeting students where they are with appropriate support and resources.

This is an output from an informally constituted international practice exchange group called "CR+" organised by the University of Huddersfield.

The universities participating in the CR+ group all operate in higher education systems where graduate employment outcomes are significant factors in government policy and institutional strategies.

In all the Higher Education systems represented here, external indicators (such as graduate outcomes data) used in regulation and policy making are often lagging indicators. The data generated through the Careers Registration process comes directly from current students and as some of the case studies demonstrate, it can be used to create internal, leading indicators of student needs, interests and graduate outcomes.

Policy frequently links graduate employment to access and participation and thereby to equity, inclusion and social mobility. Examples include the Australian Universities Accord (Australian Government, 2024) and the regulatory frameworks and activities of the Office for Students in England, notably Access and Participation Plans and the Teaching Excellence Framework (Office for Students, n.d.). In

turn, this is connected to Careers and Employability work in universities, in the spirit of "getting in and getting on" (The Bridge Group, 2017; Hewitt, 2020).

The Careers Registration approach described in this publication enables gathering of information on the self-declared career readiness of all students (the response rate is typically >90%), not only those who are already engaged with opt-in careers provision or other employabilityenhancing activities. Linking this to other student data can help to target careers and employability support to where it might make the most difference. The comprehensive coverage of the student population, the capability to provide leading indicators and the linkage to other important data sets, enable the Careers Registration approach to play a part in devising and delivering inclusive, student centred approaches to engagement, opportunity and outcomes.

This publication should be of interest to a broad range of people in and around higher education who may be interested in how universities try to engage with and support their students to create fulfilling futures - hopes and expectation which are shared by all stakeholders.

Careers Registration: the common approach to data-informed careers and employability strategies and operations

The contributing institutions are all adopters of the Careers Registration approach to gathering and using self-report data on career thinking and planning, provided by students through institutional enrolment processes. Careers Registration was instigated at the University of Leeds in 2012 and disseminated at the Association of Graduate Careers Advisory Services (AGCAS) conference in 2013 (Daubney, 2021; Gilworth & Thambar, 2013). Since then, it has been the core of a national learning gain project in the UK (The Careers Group, n.d.; Cobb, 2019; Gilworth & Cobb 2017; Office for Students, 2019). The UK Careers Registration learning gain project has been replicated in Australia (Edge, 2021; NAGCAS, n.d.).

The Careers Registration approach has been implemented in many universities in the UK and in universities in Ireland, Portugal, Australia, and New Zealand. This publication results from the establishment of a mutually supportive network to foster shared learning from experience

and the exchange of good practice. There is no intention to suggest that the members of the CR+ project group have a monopoly on innovation based on the Careers Registration approach. Other mechanisms, such as the Careers Registration Fora hosted by the University of London (The Careers Group, 2024), illustrate the scope of the broader community and showcase interesting work taking place in other institutions, though there is overlap with CR+.

The CR+ group process revolved around presentation and discussion of examples of practice based on themes agreed by the group at the outset. The operation of the group had some of the characteristics and benefits of collaborative enquiry or action research (McNiff, 2013). Essentially, the earlier elements of action research as described by McNiff, such as identifying issues to investigate, asking focussed questions and imagining a way forward could be done collectively, but the trying out (of potential solutions shared with the group), modification, evaluation and reconsideration elements were left to local action by the individual institutions. The themes which guided the topics for group meetings also underpin the structure of this publication.

In the professional and policy discourse, it is not unusual for the terms "Careers Registration" and "Career Readiness" to be used interchangeably. For example, Advance HE in its summary of successful Teaching Excellence Framework (TEF) submissions (Advance HE, 2024, p.11) states that "Careers registration/readiness data was being used to target employability support to those in need." However, for the purpose of using this guide (and more generally), it is probably useful to consider Careers Registration as the name of the process through which data is gathered. The word "Registration" arises from the fact that the process is embedded in enrolment or registration.

Career Readiness on the other hand, can best be understood, in this context, as describing the thinking of individual students about their career development starting points and journeys represented in the data which is produced by the registration process. Typically, the data can be aggregated and analysed at numerous levels, often categorised in line with the career stage or career readiness models which institutions and Careers Services use to visualise, share and act upon the data (Gilworth & Stanbury, 2024). The data may be referred to as Careers Registration

data, based on how it is generated, or Career Readiness data based on what it represents.

The Careers Registration process was set out in in detail in "The Careers Registration Practical Guide" (Cobb et al., 2019) and again by colleagues in Ireland in "the Career Registration Guide" (AHECS, 2022). Whilst not seeking to reproduce the detail of those earlier publications, it is important to provide enough information on how the data is obtained and analysed, to inform understanding of the case studies in this publication. Some of the case studies will also allude to the fundamentals of the process.

Briefly, the Careers Registration process involves students responding to careers and employability related statements/questions, which are embedded into the online enrolment process. The statements are usually presented in two sets. The first (which we will call CR1) is about career thinking and students are asked to indicate the one statement from a list of around ten, which most closely represents their own career thinking at the time. The second (CR2) is about their acquisition of employability enhancing experience and, in this case, students are asked to tick as many examples as apply to them to reflect the totality of their experience at that point. The exact number and wording of statements varies, but the principles of CR1 and CR2 are present in every known iteration of Careers Registration. CR1 and CR2 can be thought of as the "common core" of the approach, wherever it is in place.

Typically, the responses from CR1 are analysed into headline groupings, based on an institutional stage-based model of the career development journey. For example, the original and still widely used Leeds model was Deciding (on options to pursue), Planning (to acquire appropriate experiences, skills and networks) and Competing (for opportunities in chosen career areas). There is usually a headline category (Sorted or similar) to reflect responses from students who say that they have their next step after graduation (job, further study, business start) confirmed.

As illustrated in some of the case studies, there can be benefits in engaging students with the career development models which use the headline categories (Gilworth & Stanbury, 2024), but it is important to be clear that the headline groupings are rarely if ever, presented to

students at enrolment. The students respond to the individual statements/ questions.

Examples of statements and the ways in which the resulting data has been categorised and visualised will appear at various stages throughout this guide. Examples can also be seen in the Careers Registration Practical Guide, the AHECS Career Registration Guide and other published pieces referred to later in this introduction.

In recent years, several institutions have added a third (CR3) and in some cases, a fourth (CR4) set of statements to the Careers Registration process. By far the most common addition at CR3 has been to ask students to indicate occupational sector preferences from a list of options. In the UK, there is widespread usage of the Prospects job categories for this purpose (Prospects, n.d.). In the small but growing number of cases where a CR4 is in place, this is being used to gather data on students' location preferences, by asking students to choose their preferred locations for work or further study after graduation. For obvious reasons, the location options are locally defined.

The potential of CR3 and CR4 will be considered in the "next steps" section of this guide, but the focus of the examples in most sections of this guide is on the common core of CR1 and CR2, with particular emphasis on CR1.

Students engage with Careers Registration when they enrol as new students and every time that they re-enrol as continuing students. This means that the data generated can be both cross-sectional and longitudinal. It is common for an opt-out option to exist in enrolment processes, but very uncommon for the opt-out to be used. Amongst the CR+ members, the Careers Registration response rate is typically > 90% and in some cases close to 100%. This reflects the experience of the UK Learning Gain project.

All the members of CR+ are established users of Careers registration. Several of them have multiple years of data. Of course, the University of Leeds, where it all started has most of all. The publication benefits from the expertise of Leeds colleagues as they reflect on the insights that they have derived from over a decade of Career Readiness data. One of the benefits that has arisen from significant time series data at several institutions has been the capability to examine and understand

the strong and enduring association between Careers Readiness data and Graduate Outcomes. This has established Career Readiness data as a leading indicator in careers and employability strategy. This will be explored in more detail in the institutional strategy section of the book.

To position this compendium in its chronological context, it is useful to know that the Careers Registration Practical Guide was published in 2019, as an output of the UK Careers Registration Learning Gain project (2015-2018). Other important and related outputs were Fiona Cobb's (2019) article "There no Going Back: The Transformation of HE Careers Services Using Big Data" and David Winter's (2019) book chapter "The Rise of the Practitioner-Researcher: How big data and evidence-based practice requires practitioners with a research mindset". Both highlight the impact of Careers Registration/ Career Readiness on accelerating the move to data-informed strategy and operations which was a major departure at the time but in just a few years, has become the norm in HE Careers Services. Career Readiness is just one of the key data sets which have driven the impact of data analytics and interpretation on the operation and in several cases, the staffing structure and professional networks of higher education Careers Services (Blunt, 2024).

The AHECS guide was published in 2022 as was the book chapter "Starting Points and Journeys: Careers and Employability in a Data-Rich Environment" (Gilworth, 2022). This was published in between the conclusion of the UK Learning Gain project and the establishment of the CR+ project from which this guide is an output. The chapter sought to distil feedback on the impact of Careers Registration/Career Readiness on Careers and Employability strategy and operations from a community which had built up from and beyond the learning Gain project. This chapter paved the way for the establishment of CR+ which effectively began from the point at which the chapter finishes.

Then and now: "data that we didn't have before"

The starting point for the CR+ project was this question: How do institutions develop and deliver their careers and employability strategies and operations now that they have data that they didn't have before? The

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data in question is that which is generated by the Careers Registration process.

At this point, it is important to explain the idea of "data that they didn't have before" Absolutely central to this is the nature of the data and its source, namely a declared sense of career thinking/career readiness obtained directly from (more or less) all students enrolled with the institution at the time. If students' career development is conceptualised as a journey and universities seek to offer some direction on that journey, Careers Registration provided the answer to the key question "where are you now?"

The title of the original presentation at the AGCAS Conference was "Careers Registration: A Data Revolution." The idea was to try to convey what the presenters felt was the unprecedented nature and potential utility of what could now be available through Careers Registration. As the presentation said, "we needed data that we had never had before (and neither has anyone else)." Essentially that data was the answer to the question "where are you now?"

Prior to the inception of Careers Registration, UK institutions had substantial data on the employment situation of the most recent cohort of graduates from the Destination of Leavers from Higher Education (DLHE) survey. The survey was carried out six months after graduation and had a high home student response rate (c80%) (HESA, 2018) The data would typically be available in a useable form approximately one year after graduation. The DLHE was replaced by the Graduate Outcomes survey in 2018. Graduate Outcomes has a longer census date (15 months after graduation) and a lower response rate. Destinations data is always useful to careers and employability professionals and institutions. It has been used to inform higher education careers guidance for much longer than it has been used as a regulatory metric and continues to be so (Prospects, 2023). However, destination data is essentially retrospective and forms the basis of lagging indicators.

There was also data from Careers Service Management Systems on the presenting needs of and interactions with the minority of students who are active users of opt-in careers service. This had the advantage of being current but the disadvantage of not representing the whole student

population. Institutional data on the acquisition of work experience tended to be limited to records of those activities in which the university had some involvement in the organisation, whether curricular or cocurricular. These were not held in one place.

What was not available was: 1. Data on the career thinking of *all* current students (not just those engaged with the Careers Service) in an actionable time frame, while they are still at university. 2. A comprehensive picture of the scale and nature of work experience acquired by all students across the whole of the university, whether it was organised by the university or not. Careers Registration, through CR1 and CR2 respectively, provided the required data. Of course, gathering this data was not the strategic purpose, rather it was an enabler of the ultimate purpose, which was to understand where students were on their career development and employability journeys and to meet them there with careers support based on the insight gained from the data. This was indeed, "data that we had never had before."

The widespread adoption of Careers Registration means that many other institutions have data that they didn't have before. Kate Daubney (2021, p.xiv) suggests that Careers Registration "transformed the HE Careers landscape permanently." Certainly, for adopter institutions, there was a time before Careers Registration and a time after. If there has indeed been a data revolution, we would not expect the before and after situations to be the same. It seems reasonable to ask what difference does it make?

Through the case studies, this publication seeks to illustrate the journey from the *Data* itself, through the *Information* - this is what the data tells us, to the *Insight* derived from the data in its broader context and how that combination informs strategy and operations.

The structure of the book

As the title suggests, this is a practice-based publication. Its primary purpose is to share examples of innovative strategy and practice through the case studies. There has been no imposition of a "house style", rather the contributions are shared by the authors in ways that they felt to be most relevant and helpful to the audience. Relevant references are

included at the end of each chapter; the number of references varies between chapters depending on the style and content of each contribution.

Generally, the contributions are placed in the section of the book according to the main themes to which they relate. However, there is bound to be a degree of overlap, where contributions assigned to one theme have things to say about others.

The themed sections are as follows: 1. Making it Happen and Making it Work: Critical Success Factors. 2. Configuration and Communication of the Careers and Employability Offer to Students. 3. Partnerships: The Careers and Employability Ecosystem. 4. Working with Institutional Strategies and Key Performance Indicators. Following the four main themed sections, there is a section which looks ahead to potential future developments in Careers Registration-related practice.

The Themed sections:

1. Making it Happen and Making it Work: Critical Success Factors

It could be said that the capability to gather Careers Registration data is necessary but not sufficient, to enable the approach to inform careers and employability provision for and engagement with, students.

If the establishment of the data gathering process through enrolment is seen as making Careers Registration *happen*, then all the other activities around analysis, presentation, interpretation, communication, action and evaluation could be seen as making it *work*.

Both making it happen and making it work, depend on the interaction of numerous actors, resources and priorities within universities as large, complex organisations. Over a decade or so, across the community of practice, there have been examples of Careers Services in institutions where the capability to make it happen is in place, but there has been a hiatus between that stage and making it work. There are also examples of colleagues who have paid much attention to the development of practice and feel that they could rapidly make it work, if only they could get the making it happen piece over the line.

Higher education Careers Services are departments of their universities. To achieve their objectives and to play their part in achieving institutional objectives, they need to navigate organisational opportunities and constraints. They need to work in partnerships with other parts of the university, with which their priorities will overlap. In Careers Registration, this is true of making it happen and making it work.

There is an ever-present need to align the forces of E-the external Environment and V-internal Values with understanding, development and deployment of R-Resources (Thompson & Martin, 2005). For example, the organisational response to the policy, regulatory and market factors in the external environment (E), which relate to careers and employability, will be influenced by institutional identity and ethos – a sense of "how we do things around here" and this combination will manifest itself in institutional strategy. In this context, resources will be allocated, deployed, developed and connected across departmental boundaries. The strategic positioning of the Careers Service and its connections to the broader institutional ecosystem, will both influence and be influenced by, EVR alignment or misalignment (Gilworth, 2019).

These matters of alignment and essential partnerships are picked up in the case studies throughout this book and feature strongly in the two items in this section. The first item in this section is a reflection on the origin of Careers Registration by the presenters of the original "Data Revolution" session at the AGCAS conference in 2013. This piece illustrates the alignment which was essential at the time to make Careers Registration happen and to begin to make it work in a situation where there was no precedent. This is included here because it is useful to reflect on the idea that the original Leeds approach was not just about the data. It was a holistic approach to student engagement, recognised as such by national awards at the time. The account also highlights the importance of the congruence between the student-centred approach inherent in Careers Registration and the prevailing ethos informing institutional strategy.

The second item is based on a research project, which looked at two institutions which had experienced the hiatus between making it happen and making it work.

Having Career Readiness data is one thing and doing something useful and impactful with it is another. Following the AGCAS presentation and alongside the UK Learning Gain project, there was rapid expansion of the adoption of Careers Registration. There was something of a "dash

for data." Feedback from the community suggested that this did not universally or automatically translate into impact.

Several Careers Service leaders felt that they had run into a hiatus in which they had obtained the data but were not really using it. In this section, Sandie Townsley shares her research based on two Careers Services that have experienced the hiatus, through which she identifies Critical Success Factors for moving through and beyond this into creating meaning and impact. It is hoped that anyone reading this, who feels that they are currently in the hiatus situation will be reassured by the fact that they are by no means alone and will gain from the examples of what can be done to move towards greater utility and impact.

2. Configuration and Communication of the Careers and Employability Offer to Students

This section is concerned with the ways in which new insights into the career development journeys and needs of all students shape the configuration of the central Careers and Employability Service offer. What has been the impact on the ways in which the offers are structured, targeted and communicated? How are services using data gathered *from* students to shape their offers *to* students?

This is not the story of data alone but is also the story of the crucial role of the underpinning stage-based conceptual models that the Careers and Employability Services are using to visualise and share the data.

In this section, there is a contribution from Kathy Ryan and Jane Black on the continuing re-invention of the central offer and related student communications and engagement at the University of Melbourne. Andy Blunt discusses the evolution of the conceptual model at Leeds and Dave Stanbury does likewise in relation to developments at Huddersfield.

All the contributors to this guide operate in mass higher education systems. Typically Careers Service staff: student ratios create the need for a substantial amount of group based one to many, delivery of provision to students. In all cases, gathering and acknowledging the answers to the question "where are you now?" consistently shows that students in the Exploring/Deciding phases of career thinking are the largest single group at any time (Gilworth & Cobb, 2017; Kathy Ryan and Jane Black in this volume).

This combination of factors raises the challenge of providing individualised careers guidance, as distinct from "how to" careers education sessions, through one-to-many delivery mechanisms (Edwards, 2024). In this section, Cerian Eastwood and Matthew Howard, from the University of Leeds, provide an insight into the impact of Career Readiness on group-based careers guidance.

The University of Exeter has been sharing its career development model and the rationale for the Careers Registration process, with students for some time and Oliver Laity explains what this means in practice at the University of Exeter. He also explores the link to the careers and employability ecosystem, which connects to case studies in the following section, as well as reviewing the measurement of impact of employability interventions, particularly for students from Widening Participation backgrounds. The impact measurement element could be read in conjunction with contributions in the strategy section.

3. Partnership: The Careers and Employability Ecosystem

Partnership working between professional Careers Services and academic units is an important feature of the careers and employability landscape. Often this extends to other professional service units, particularly where there are employability-related functions which might be organisationally part of the Careers Service in some institutions and not in others. The extent to which the Careers Service/Faculty relationship or alignment is formalised and embedded varies with the institutional Careers Service model, but some level of Faculty alignment is the norm in modern higher education Careers Services (Gilworth, 2019). Some form of an "employability ecosystem" which involves the professional Careers Service and academic units in the shared endeavour of supporting students on their career development journeys is common across the institutions represented in this guide and across the national higher education systems to which they belong.

This section looks at the impact of Career Readiness models and data on the operation of those partnerships and ecosystems. Academic partnership working might be in-curriculum and/or co-curricular. Manchester Metropolitan University (Manchester Met.) has adopted both in-curriculum and co-curricular approaches. This section contains

a contribution from Bea Carter and Stephen Boyd at Manchester Met. Leoni Russell, Luella Leon, Anna Branford and Julian Lee provide an insight into the application of Career Readiness data in and around the curriculum at RMIT University, including the important connection to Work Integrated Learning (WIL). The RMIT approach to Career Readiness is from the perspective of "career educators" (Branford & Leon, 2023). The value of dashboards in visualising and communicating Career Readiness data, features strongly in both the Manchester Met. and RMIT accounts.

Abi Blower describes a pilot project at the University of Huddersfield in which the CR1 statements are embedded into the Virtual Learning Environment (VLE) and used in "real time" with undergraduate students before and after placement experience on a degree programme in the School of Education. Career Readiness data at scale can only be captured once per year through enrolment. This is an example of gathering the data and reflecting on the responses "in the moment" with a coherent subset of the student body and linking this directly to plans for and reflection on work experience. This naturally connects to the discussion about group careers guidance in the previous section of the guide.

Also at Huddersfield, Sal Crosland and Gabriella Holt provide some insight into their research into a relatively under explored area of the use of Career Readiness in institutional ecosystems, namely careers support for Post Graduate Research students. This work is based on a programme which links the Career Readiness data gathering approach and stage -related careers resources, with the PhD supervision system.

4. Career Readiness and Institutional Strategy.

At some level, the decision to implement Careers Registration in any university is a strategic choice. For Careers Registration to happen, the institution must agree to embedding the collection of careersrelated information from students into what is often seen as the most fundamental and closely guarded of university business processes, namely enrolment.

The process is closely guarded for understandable reasons. There may be quite reasonable concerns at the prospect of any addition to the process deflecting students from completing their enrolment. So

far, there has been no evidence to suggest that this has happened with Careers Registration. Getting Careers Registration "over the line" into enrolment often requires backing at the institutional senior leadership level. This is needed to show that there is sufficient belief in the strategic significance of the data and resulting insights and actions, to allow for inclusion in enrolment when in many cases, requests for inclusion are routinely turned down. Inclusion has happened in many institutions now, but it would be naïve to expect that its continuation is a given. To remain in place, the process and it outputs need to demonstrate their strategic value.

This responsibility typically sits with the leadership of the Careers Service. This task is very often connected to the idea that Career Readiness provides a leading indicator of external metrics which are important to the institution, such as Graduate Outcomes. It is important to avoid the assumption that institutional leaders are not also interested in and supportive of, the fundamental idea which underpins Careers Registration, which is better understanding of students' needs and striving to meet them.

As reflected in the Critical Success Factors section of this guide, the origin of Careers Registration at Leeds was rooted in an institutional values-driven approach in which understanding students' needs and meeting them was a strategic aim, linked to the view that achieving this would also better serve institutional performance in relation to the employability component of its own education strategy and the related external measures.

The direct connection between the Careers Registration process and the systems which gather and manage other student data enables insights into equity, inclusion and social mobility in the careers and employability context. As mentioned earlier, these are key features of institutional and professional values, university strategies and the policy and regulatory environment.

The strategy and values connection continues at the University of Leeds. In this context, Karen Burland and Jane Campbell provide a case study which offers a very strong link to the previous section of the guide through strategy based on understanding of the ecosystem, whilst also addressing strategic Key Performance Indicators (KPIs). Also at Leeds,

Andy Blunt provides further insight into the links between Careers Readiness data and institutional KPIs.

Manchester Metropolitan University is a leading player in using Career Readiness data in strategy planning and monitoring at various levels throughout the institution. Stephen Boyd and Bea Carter provide illustrations of how that works. The monitoring element links to impact evaluation content in some of the other case studies.

As some of the examples will show, the leading indicator connection to Graduate Outcomes is important. Over the years this has most commonly been based on an association with Career Readiness data for undergraduates at the beginning of their final year. There is an argument that capturing the same data at the end of the final year might provide an even more useful picture. The problem here is the lack of a systemic equivalent to enrolment at the point of course completion/graduation. This was a commonly voiced frustration among the participants in the UK Learning Gain project.

Since then, several institutions have found solutions to this problem. One of those is the University of Leicester. Jason Hardman manages that process and mentions it in this section. Whilst Jason's contribution sits in this section, it is important to note that it also contains information on the Faculty business partner approach which is linked to the partnerships and ecosystem section of the guide.

Looking Ahead

The final section of the guide will look forward to future developments. This section is necessarily speculative, though it is largely based on ideas which are already emerging from the professional community.

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