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A mapping of graduate attributes: what can we expect from UK university students?

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Wong, B. ORCID: https://orcid.org/0000-0002-7310-6418, Chiu, Y. L. T., Copsey-Blake, M. and Nikolopoulou, M. (2022) A mapping of graduate attributes: what can we expect from UK university students? Higher Education Research & Development, 41 (4). pp. 1340-1355. ISSN 1469-8366 doi: 10.1080/07294360.2021.1882405 Available at https://centaur.reading.ac.uk/95474/

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To link to this article DOI: http://dx.doi.org/10.1080/07294360.2021.1882405

Publisher: Taylor & Francis

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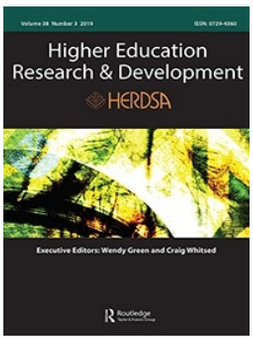

Higher Education Research & Development

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/cher20

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To cite this article: Billy Wong , Yuan-Li Tiffany Chiu , Meggie Copsey-Blake & Myrto Nikolopoulou (2021): A mapping of graduate attributes: what can we expect from UK university students?, Higher Education Research & Development, DOI: 10.1080/07294360.2021.1882405

To link to this article: https://doi.org/10.1080/07294360.2021.1882405

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HIGHER EDUCATION RESEARCH & DEVELOPMENT
https://doi.org/10.1080/07294360.2021.1882405

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A mapping of graduate attributes: what can we expect from UK university students?

Billy Wong [a], Yuan-Li Tiffany Chiu [b], Meggie Copsey-Blake[a] and Myrto Nikolopoulou[c]

[a]Institute of Education, University of Reading, Reading, UK; [b]Centre for Higher Education Research and Scholarship, Imperial College London, London, UK; [c]Ellinogermaniki Agogi, Pallini, Greece

ABSTRACT

The higher education market has prompted universities to justify their value and worth, especially to students. In Australia, New Zealand and the UK, it is increasingly common for universities to advertise their vision to prospective students, through Graduate Attributes, and showcase the sets of skills and competencies their graduates would develop throughout a degree. Whilst there are extensive studies in Australasia, research in the UK context is limited. This paper presents what we believe is the first national mapping of graduate attributes proposed by UK universities. Our analysis suggests four discourses that characterise the overarching qualities that UK students can expect to embody by graduation: *self-awareness & lifelong learning, employability & professional development*, *global citizenship & engagement* and *academic & research literacy*. These discourses are discussed in relation to the concept of the 'ideal graduate' as we highlight what can be expected from students who complete a UK higher education.

ARTICLE HISTORY
Received 15 September 2020
Accepted 12 January 2021

KEYWORDS
Graduate attributes; graduate outcome; ideal graduate; ideal student

Introduction

In countries such as Australia, New Zealand and the UK, the higher education market has prompted universities to justify their value and worth, which has encouraged the development of graduate attributes (Barrie et al., 2009; Normand & Anderson, 2017; Spronken-Smith et al., 2013). These attributes are often advertised and branded as the range of skills that students are expected to develop from the holistic education offered by that respective university, even though it remains questionable the extent to which staff and students share or are aware of these institutional aspirations (Oliver & Jorre de St Jorre, 2018). Whilst research in Australasia has extensively explored the purposes, types and challenges of developing and implementing graduate attributes, there are far fewer studies from the UK.

This paper aims to contribute to a gap in the UK literature by presenting what we believe is the first systematic mapping of the graduate attributes as publicised by UK

CONTACT Billy Wong b.wong@reading.ac.uk Institute of Education, University of Reading, London Road Campus, 4 Redlands Road, Reading RG1 5EX, UK

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universities. We identified four discourses that characterise the qualities that students can expect to embody by graduation. The findings provide a national point of reference and overview of the qualities that are promoted across UK higher education.

The importance of graduate attributes

The emergence of graduate attributes has been attributed to the marketisation of higher education. Due to increasing demands from graduate employers and the knowledge economy for highly-skilled labour, governments and higher education policies around the world have entrusted universities with the mission to provide an employable graduate workforce (Hill et al., 2016), even though the purpose of higher education is arguably broader and more holistic than just for employment (McArthur, 2011). Yet, driven by this momentum, graduate attributes are often developed as a way to validate such aspiration and are increasingly used by universities as markers for quality of learning, teaching and organisational culture (Bridgstock, 2009; Wald & Harland, 2019).

Graduate attributes are generally understood as 'the qualities, skills and understandings a university community agrees its students would desirably develop during their time at the institution' (Bowden et al., 2000, p. 3), which are inextricably linked to employability (Oliver & Jorre de St Jorre, 2018). Whilst other terms, such as graduate outcomes, graduate skills, graduate qualities and graduate capabilities are also used in the literature, these are more or less synonymous with graduate attributes (Barrie et al., 2009).

For students, graduate attributes are meant to indicate the range of skills and qualities that they should develop by graduation, regardless of their degree discipline (Barrie, 2004), which will help them to stand out, especially from non-graduates. These graduate-level skills are marketed by universities as desirable by employers and will strengthen their employment position (Green et al., 2009). The graduate attributes promoted by each university are often different due to the competitiveness of the higher education sector and the importance for universities to be different or distinctive from each other to attract students and build their brand (Normand & Anderson, 2017). As such, there are numerous graduate attributes, although many are often variants of similar qualities. In their review of 39 studies on graduate attributes, Osmani et al. (2015) reported that the most popular attributes are communication, teamwork, problem-solving, technological skills, creativity, interpersonal skills, leadership skills, self-management and flexibility/adaptability. Similarly, Oliver and Jorre de St Jorre (2018) mapped the graduate attributes of Australian universities and found that in addition to discipline knowledge, the most common attributes are written and oral communication, critical and analytical (and sometimes creative and reflective) thinking, problem-solving (including generating ideas and innovative solutions), information literacy (often associated with technology), learning and working independently, learning and working collaboratively, and ethical and inclusive engagement with communities, cultures and nations.

Despite their growing popularity, research has highlighted that the implementation of graduate attributes can often be difficult (Hughes & Barrie, 2010). Although it is generally agreed that students' development of graduate attributes should be embedded into the curriculum, staff have reportedly struggled with the lack of time, resource and confidence to embrace this approach (Barrie, 2004; Oliver, 2013). Staff have found it difficult to translate these 'top-down' policies on graduate attributes into the context of their own

discipline, since the learning and teaching of graduate attributes are, after all, situated within disciplines, despite the aspiration of graduate attributes to be applicable for all (Barrie, 2007; De la Harpe & David, 2012).

For instance, Jones (2009a, 2009b) explored the application of graduate attributes across five disciplines (economics, history, law, medicine and physics) and found that discipline-specific interpretations and meanings for the same attribute (e.g., 'critical thinking') are not always the same. Other scholars have called for graduate attributes to have a stronger emphasis on employability (Bridgstock, 2009) and personal literacy (Rust & Froud, 2011), highlighting different opinions, or even disagreements, about the constituents of graduate attributes. As such, the development and implementation of graduate attributes ought to be discussed and contextualised within respective disciplines for relevance and effectiveness.

Typically developed and driven by senior management or a special sub-committee, each university's graduate attributes would represent an institutional mission, aspiration and branding. However, the extent to which graduate attributes are adequately consulted or agreed with staff and students is debatable (Osmani et al., 2015). A 'top-down' approach to graduate attributes risks being irrelevant or inconsistent with the views of staff and students, which hampers the enactment of such policy into practice (Ball et al., 2012). Thus, Su (2014) reminds us of the importance for students themselves to have a vested interest to develop graduate attributes, rather than to see it as detached from their degree programmes. The potential mismatch and breadth between institutional expectations of students, via graduate attributes, and the expectations from staff and students themselves, are revisited later through the concept of the 'ideal graduate' (Ingram & Allen, 2019).

Graduate attribute research in the UK is scarce, with two notable exceptions in the Scottish context. Normand and Anderson (2017) discussed ten discrete attributes (learning, adaptable, self-aware, resilient, agile, empathic, ethical, professional, digital and reflexive), whilst Hounsell (2011) identified eight common threads that are considered critical in the twenty-first century. These include lifelong learning; research, scholarship and enquiry; employability and career development; global citizenship; communication and information literacy; ethical, social and professional understanding; personal and intellectual autonomy; and collaboration, teamwork and leadership. This article contributes to the literature with a national mapping of graduate attributes from UK universities.

The study

We used official membership of *Universities UK* – the largest body of university representative in the UK – as our scope to map graduate attributes. As of January 2020, there are 137 university members. Our approach to the mapping activity is qualitative and interpretive as we aim to collate and cluster together themes and perspectives that have similar intended meanings.

To begin, we searched for the name of each university as listed in the *Universities UK* membership in Google, alongside the keywords of *graduate attribute*, *graduate skills*, *graduate qualities* or *graduate capabilities*. If the search returned with a university webpage(s) that documents their institution's expectations of students, then details of these online content, or graduate attributes, were saved for analysis. The desk research

began in summer 2019 and finalised in January 2020. Of the 137 universities that were searched, we recorded 76 universities (55%, see Appendix 1) to have at least one publicly accessible website that advertises what graduates are expected to have developed from their university education.

We note that some universities included more attributes or detailed descriptions than others and thus we recognise our analysis would inevitably favour documents that are richer and more descriptive. For example, some universities have a main webpage about graduate attributes, with various subpages and further explanations, whilst others only have one webpage that lists their graduate attributes. Despite these differences, the key content provided by each university with graduate attributes are all sufficiently clear and comprehensible, which is unsurprising, given the primary purpose of these texts is to promote the university. We note that universities are mostly vague in how their students can attain these attributes, typically stated as 'over the course of your degree'.

We used the software *NVivo* and its *NCapture* function to record these online contents for inductive thematic analysis. The contents collected from these 76 university websites were thematically coded. Here, initial codes were created through the identification of relevant themes (i.e., nature of graduate attributes) that emerged in the earlier stages of data analysis as we moved 'back and forth' between the data and analyses in an iterative process through which the dimensions of concepts and themes were expanded through the comparison of data (Corbin & Strauss, 2014). A provisional coding framework was established after the authors independently coded the same data (three university websites) by similar themes, which was then discussed and compared, with any differences on the application of codes debated until a consensus was reached. These codes were subject to an iterative process of gradual coding refinement, with the themes being revised and collated into higher-level themes. Over 30 subcodes were generated from the initial and inductive reading of the data (see Appendix 2) and refined into four broad discourses of graduate attributes. As discussed below, there is some occasional overlap in the terminologies used across university websites, even though their definitions are more varied and reflective of the unique cultures or assets of particular institutions.

Self-awareness & lifelong learning

The most popular discourse of graduate attribute is what we call *self-awareness and lifelong learning*, which is characterised by 89% of UK universities that listed graduate attributes (n = 67). This discourse embodies and continues to develop personal qualities such as *self-awareness*, *emotional intelligence*, *adaptability, effective communication,* and *organisation and time management*. In other words, graduates are able to think critically and manage their behaviours, actions, thoughts, and emotions in ways that align to their values, while staying inquisitive and perceptive of others and their environments throughout their lives. *Self-aware and lifelong learning* therefore involves the use of skills and resources that are at students' disposal, such as talents, strengths, energy and time, to master their personal effectiveness and achieve their goals.

Graduates are described by 55% of universities as being able to maximise their potential through their development of *critical self-awareness*, including qualities such as 'self-

directedness', 'self-regulation', 'self-reflection' and 'self-improvement'. Some universities (25%) specifically draw on *self-improvement strategies* and *personal literacies*; that is, for students to recognise their *strengths and weaknesses* by writing for learning and reflection. Others (20%) draw on the idealised, *future-facing self* as graduates are expected to commit to goals, targets, aspirations and opportunities, which aligns with intrinsic motivation. For instance, the *Universities of Bristol and Derby* describe this as being consistently 'driven' and 'willing to learn', while others such as *Birmingham City* and *Wrexham Glyndwr Universities* describe qualities such as 'perseverance', 'determination' and being 'motivated by achieving goals'. The following example from the *University of Glasgow* articulates some of the skills described here:

> [Graduates are] motivated, conscientious and self-sufficient individuals capable of substantial independent work … managing their personal performance to meet expectations, [and] demonstrating drive, determination and accountability.

Several universities described *emotional intelligence* which we suggest is another characteristic of the *self-awareness and lifelong learning* discourse. This appears to be more subjective and is subsequently defined and qualified differently. For example, the *University of Gloucestershire* suggests graduates should recognise 'origins and biases of assumptions and beliefs', while graduates from the *University of Huddersfield* are said to 'understand and assess behaviours, attitudes and interpersonal skills'; yet those from the *University of West London* 'question [their] own perspective and those of others'. Emotional intelligence also tends to overlap with other terminologies and definitions, as the *Universities of Huddersfield and the Arts, London* describe *resilience* as staying 'driven and resolute' while dealing with 'ambiguity, uncertainty and rejection'. It then seems that graduates' ability to identify and manage their emotional responses to their environments, while being receptive and sensitive to others, is considered by universities as important for future life success.

Another desirable quality includes *adaptability* to change and diversity, especially in unfamiliar or uncertain contexts. This is similarly described by *Anglia Ruskin* and *Edinburgh Napier Universities* as being 'autonomous' 'accountable' and 'agile', and by *University of the Arts, London* as keeping an 'open mind' and 'embracing change'. Others, such as *Imperial College London*, suggest being adaptable requires an understanding of different cultures and perspectives. Furthermore, 49% of universities suggest they train graduates to apply *problem-solving* to new/complex situations so they can adapt to challenges and find solutions by using their personal skills or resources. *The Universities of Sheffield* and *Glasgow* describe their graduates as 'imaginative', 'innovative' and able to apply 'lateral thinking', while *Ulster* and *Keele Universities* list 'flexibility and creativity' and being critically reflective through 'planning and evaluating'.

Other personal qualities include *effective communication*, such as the ability to 'negotiate', 'engage in critical debates', 'articulate complex ideas' and 'defend views and opinions'. For example, *Newcastle University* promotes pragmatic, interpersonal skills such as 'listening and adapting behaviour (… facial expression and gestures) to relate to others', as well as 'relationship building, taking time to develop and maintain connections by taking their needs into consideration [and] sharing ideas'. This may also involve external resources, which we describe as *information and digital literacies*, referring to the use of technologies to communicate in a range of personal, professional, academic, and

onscreen contexts. Over a third of universities (36%) expect graduates to be agile users of digital devices and online platforms, although there were fewer instances of the terms 'social networking' or 'social media'. For example, the *Universities of East Anglia* and *Reading* suggest graduates 'effectively build networks of contacts' by 'communicating in an increasingly digital world'; *Oxford Brookes University* similarly describes effective communication as 'engaging productively in online communities'. This focus on digital fluency as a mechanism for communication and more broadly, lifelong learning, highlights the demands of the new global economy on higher education, as technology seems to be increasingly prioritised across multiple disciplines and institutions, and in most occupations.

Lastly, and perhaps surprisingly less common than expected, is the emphasis on students' *organisation and time management*, which mostly include the ability to *meet deadlines*, as well as *personal targets and life goals*. For instance, *Prifysgol Bangor University* and *Trinity Conservatoire of Music & Dance* expect graduates to work 'efficiently and effectively under pressure'; the *University of Bristol* suggests 'managing tasks by prioritisation, planning, scheduling, delegation, and organisation'. It is worth noting that some examples above were mentioned as a lower level requirement but have nonetheless been included in the universities' lists of graduate attributes.

The discourse of *self-awareness and lifelong learning* therefore embodies graduate attributes including *critical self-awareness, emotional intelligence, adaptability, effective communication* and being able to capitalise on personal skills and resources such as *problem-solving, time management and organisation*. Such an array of subthemes suggests the breadth of qualities that students are expected to develop as they prepare for life after university. This requires students' commitment to 'continuous development' of the self, leading to 'confident, lifelong learners who are career-driven, skills-focused and adaptable in expanding knowledge and understanding context through their working lives', as suggested by *Robert Gordon University*. While universities tend to draw on the broader benefits for employability, some examples take ownership of this concept through persuasive phraseology, for example, *Bournemouth University* suggests that 'graduates will continue to form part of the … community through their commitment to lifelong learning'.

Employability & professional development

The second discourse epitomises what we describe as *employability & professional development*, as 75% of universities (n = 57) mentioned students' *professional development and employability* in their lists of graduate attributes. This includes *working effectively with others* in groups and teams, demonstrating *leadership* by inspiring *shared organisational goals*, *managing conflict* and *building strong rapports with colleagues*; and utilising *specialist knowledge and commercial awareness*, such as *financial* and *numerical skills*, to increase business acumen and promote occupational attainment. In other words, this discourse embodies a range of qualities that foster employability and represent key, transferable skills that are valuable for the workplace.

At least twenty universities (27%) describe *working well with others* in terms of 'teamwork', 'groupwork', 'team-player' or 'collaborator', and another twenty (27%) include similar descriptions in their lists of graduate attributes. However, characteristics of *the*

employable graduate vary between institutions, and definitions of team or group work are expressed differently. For example, the *University of West London* advertises the successful running of their institution by stating their graduates 'work effectively … in teams' and this incites 'organisational success'. Similarly, *Birmingham City University* refers to the use of 'organisational contacts' and the advantages of 'foster[ing] networks as a means of drawing on organisational knowledge'. Universities such as *Cardiff Metropolitan University* and the *University of Portsmouth* focus on the importance of working with others, especially across interdisciplinary boundaries.

Another interesting comparison of team or group work lends itself to the *University of the Arts, London*, who uses the term 'connectivity' to describe 'the ability to collaborate with others, create networks and develop and contribute to communities of practice'. *Newcastle, York St John and Buckinghamshire Universities* refer to 'peer-assessment', 'peer-review' and 'giving and receiving constructive feedback', while *Queen's University, Belfast,* and the *Universities of Roehampton and Exeter* suggest graduates are 'employer focused', able to 'network effectively' and 'professionally', and 'in an enterprising way'. Graduates are therefore expected to build strong networks and relationships with colleagues and empathise with others in a professional context.

By contrast, albeit less commonly listed, *leadership* (28%) is another attribute of *employability and professional development*, which aligns to definitions in educational literature (Bush et al., 2010). As opposed to 'effective followership', suggested by the *University of Huddersfield* as 'taking direction well … and delivering what is expected of you', leadership denotes the ability to: 'positively influence', 'persuade', 'inspire', 'assert' or 'motivate' others. *The University of Northampton* suggests this entails 'perseverance to reach consensus and obtain commitment to a shared vision'.

In an education context, students are encouraged to demonstrate *leadership* in various ways. For example, *Anglia Ruskin University* suggests graduates take part in the 'Student Union's democracy and representation process', who are also able to 'negotiate in a professional context' and 'manage conflict'. Moreover, institutions such as the *Universities of Southampton* and *Cumbria*, and *London Metropolitan University*, suggest their graduates are 'ethical leaders' of 'people and places', who appropriately 'support the development of others'. *Distributed leadership* is also defined by the *University of East Anglia* as the capacity to 'delegate and assign responsibility' to group members in a 'tactful' and 'diplomatic way', as allocating tasks to others maximises efficiency but requires collegiality and trust.

Finally, drawing on *specialist knowledge and commercial awareness,* several universities (9%) directly include *financial or business skills*. *Birmingham City University* draws on the ability to 'determine the amount of information or data needed to resolve business questions and problems, and propose solutions and decisions accordingly'; *Edinburgh Napier* and *Glasgow Caledonian Universities* focus on qualities of 'entrepreneurship' and 'intrapreneurship', that is, the ability to build a business and the *University of Bristol* suggests graduates use 'knowledge to develop new enterprises'. Attributes of this kind therefore denote having specialist knowledge and commercial awareness, where graduates are expected to develop business acumen.

Universities therefore aspire students to develop the qualities related to *employability and professional development*, such as *working well with others, building strong rapports with colleagues*, demonstrating *leadership*, and utilising *specialist knowledge* and *commercial awareness* to increase occupational attainment and success. Thus, graduate attributes

tend to exemplify the qualities that are considered valuable for the labour market, as they promote professionalism and foster employability.

Global citizenship & engagement

The third discourse is what we call *global citizenship & engagement* (70% of universities). We suggest this broadly refers to taking *social and civic responsibility* in the context of understanding, embracing and working towards *equality, diversity and inclusion* on local and international levels. The discourse of *global citizenship & engagement* is conscious of the roles of graduates across different societies, and embodies the skills and qualities needed to thrive in various contexts around the world.

Our findings suggest that this includes a range of transferable *interpersonal skills*, including understanding alternative perspectives to knowledge bases by acknowledging and appreciating contributions from other ethnicities, cultures and backgrounds (see also the discourse of *self-awareness and lifelong learning*). Universities therefore expect graduates to *build international networks*, learn *foreign language skills*, and understand the universal impact of their choices and actions on the ethical, social and physical worlds. We acknowledge that some of the subthemes that characterise the discourse of *global citizenship & engagement* may also be applicable to earlier discourses, showcasing the breadth, dynamism, and fluidity of discourses around the 'ideal graduate'. Nonetheless, we suggest these qualities are closely linked to *active citizenship* within local and international communities and, more broadly, engagement with the globalised workplace.

In the context of the *global citizenship and engagement* discourse, universities (15%) sometimes refer to interpersonal skills, such as having 'integrity', 'respect', 'empathy', 'sensitivity', 'care' and 'trust' in others. Seven others suggest such interpersonal skills are needed to effectively learn about alternative knowledge bases; for instance, *Imperial College London* and the *University of Stirling* suggest graduates should be able to understand and value different cultures, beliefs, traditions and perspectives in ways that improve themselves and the world around them.

Drawing more specifically on *social and civic responsibility*, five universities, including *King's College London and Oxford Brookes Universities,* and the *Universities of Cambridge and Portsmouth*, list attributes that involve being of 'service' to society in some way, whether to the 'economy' or by 'engaging with issues of equity, sustainability and social justice'. Others, like the *University of Manchester*, more generally describe being 'encouraged and enabled to confront … civic values and responsibilities as local regional and global citizens' while *Keele University* suggests that graduates are able and motivated to 'participate responsibly and collaboratively as an active citizen in the communities [they] live and work'. The consensus here indicates that graduate attributes expedite social and civic responsibility, which is similarly listed by the *University of Hertfordshire*, and reflects relatively recent changes in education policy in the UK to promote social justice (HM Government, 2012):

> Social responsibility: the university promotes the values of ethical behaviour, sustainability and personal contribution. Our graduates will understand how their actions can enhance the wellbeing of others and will be equipped to make a value contribution to society.

As mentioned earlier, universities such as *Durham University* and the *Universities of Worcester* and *York* seem to emphasise graduate contributions to their local and international 'community'. This is again closely linked to organisational culture, as universities such as the *Trinity Conservatoire for Music and Dance* suggest their graduates will have a specific 'understanding of the role dance can play within the education and community dance sector'.

Turning more broadly to *global engagement*, only six universities (8%) refer to the value of *international networking* and *foreign language skills.* This is otherwise suggested by *Bath Spa University* in terms of 'study abroad' or, by the *University of West Scotland,* as having other 'globally relevant' abilities. Three universities (4%), including the *Universities of Chester, Greenwich and Salford,* suggest their graduates have 'foreign language skills' (including 'fluency') and are able 'to communicate in more than one language'. Needless to say, this is surprising to see in lists of 'generic outcomes', as only a small proportion of undergraduate programmes have requisites in modern foreign languages. However, this is a positive finding for the growth of language learning in higher education, highlighting the need for graduates to adapt their learning to an increasingly globalised world.

A slightly more concerning finding draws on *environmental awareness*, as only eight universities (11%) mention having 'awareness' or 'understanding' of the environment and the natural world. According to *Keele University*, this refers to the 'social, environmental and global implications of studies and other activities', as well as the 'ability to appreciate a range of perspectives on the natural and social worlds'. Others, such as the *Universities of Gloucestershire and Westminster, London,* suggest their graduates understand their 'dependence on a healthy planet for life and work' and the quality of being 'socially, ethically and environmentally aware'.

In sum, the discourse of *global citizenship & engagement* embodies strong interpersonal skills including respect, empathy and sensitivity to other ethnicities, cultures and perspectives, has an interest in international networking and unity, and are aware of their impact on the ethical, social and physical worlds.

Academic & research literacy

The fourth discourse is *academic & research literacy* (66% of UK universities), which focuses on the ability of graduates to plan and develop arguments and apply extensive or specialist knowledge of literature and scholarship. Here, they are fluent with *academic literacy* and can express themselves clearly through *academic expression*. They are also familiar with *research literacy*, that is, knowing and applying research procedures, designs or models, and are aware of *ethical responsibility and sustainability*, such as respecting the moral principles of research. Graduates are therefore expected to demonstrate high levels of critical thinking in the context of academic research, making use of appropriate processes and resources, and using supporting evidence to form conclusions and recommendations for the future.

On *academic literacy* (32%), this typically refers to skills in English for Academic Purposes (EAP): the choice of language, clarity of expression, ability to write persuasively and cohesively, and other academic skills needed for strong academic outcomes. Universities generally suggest their graduates are able to develop a reasoned, well-written, clear and concise argument, demonstrating effective spoken and written skills. Others, such as

the *University of Bristol*, draw on 'understanding the importance of appropriate referencing, honesty and rigour', while the *University of Leeds* stresses the need to adapt written communication 'to the needs of others'.

Universities occasionally describe skills directly relating to *academic expression*, such as the University of Brighton, who suggests graduates are 'articulate', and Newcastle and Metropolitan Universities who refer to their 'use of [subject] terminology to explain technical information' in a 'variety of idioms and contexts'. As seen earlier in the analysis, there is some overlap here with the *self-awareness & lifelong learning* discourse. However, *academic literacy* also refers to *quantitative analysis,* which similarly refers to *numerical skills*, a characteristic of the discourse of *employability & professional development,* but defined more specifically in the context of *academic & research literacy*. *Newcastle University* suggests this entails the ability to 'understand and manipulate numerical data', while *Queen Mary, University of London*, draws on 'us[ing] numbers confidently and competently'. *Swansea University* similarly describes abilities to 'model problems mathematically and attack them quantitatively'; and the *University of Bath* suggests graduates are 'comfortable with the presentation and analysis' of numbers.

Research literacy more specifically focuses on students' ability to critically engage with their own work and the work of others. Twelve universities (16%) mention or describe *critical thinking*, *evaluating evidence, contributing new knowledge or ideas* and *forming conclusions*. The *University of Swansea* adds that graduates are expected to have 'awareness of current research within the discipline' while those at *Oxford Brookes University* are able to 'compare and contrast theoretical explanations'. Others, like *Queen Margaret University*, more broadly suggest their graduates 'understand the nature and boundaries of knowledge creation' and can apply skills in 'enquiry, critical analysis and creative thinking to investigate problems'.

A handful of universities explicitly describe the *knowledge and application of research procedures*. Those that do, tend to refer to the ability to rigorously plan, organise, undertake and use project designs. For example, *Birmingham City University* suggests graduates may use 'sources, tools and resources, and access … information data [such as] open access documents'. *The Universities of Birmingham, Bristol, Gloucestershire, Stirling* and *Swansea* similarly list the attributes of appropriately referencing contemporary literature, demonstrating subject-specific knowledge and skills, integrating methodologies, and having knowledge of theory, principles, methodological and conceptual frameworks. Most other universities that include skills in research and enquiry also mention the importance of *ethical responsibility* and *sustainability*. This includes committing to moral principles of equal opportunity and diversity, having integrity and conducting research honestly. *Anglia Ruskin University* suggests definitions for the two terms: ethical responsibility refers to 'learner awareness of personal responsibility and professional codes of conduct', and sustainability draws on the 'ability to apply knowledge and understanding and work with others to take action'.

While these are rarely distinguished by universities, relative skills are often illustrated in wider contexts. For example, the *University of Bristol* suggests their graduates can apply ethical responsibility on 'digital and other platforms' while *Newcastle University* describes graduates as 'accountable for actions which could impact on society, the University, funding or professional bodies'. *Birmingham City University* also states this

requires a level of 'risk management' while *the University of Leeds* stresses the importance of 'building relations' with stakeholders of the research. Graduates are therefore considered as highly skilled researchers and masters of their disciplines.

Going forward

Graduate attributes illustrate the visions that universities aspire of their students, irrespective of their degree discipline. In our mapping exercise, we identified four overarching discourses of UK graduate attributes: *self-awareness & lifelong learning*, *employability & professional development*, *global citizenship & engagement*, and *academic & research literacy*. These discourses are broad, fluid and occasionally overlap and interact with one another. We suggest that this showcases the breadth of skills expected from graduates in a range of contexts for various purposes and occupational or life goals. Taking a macro prospective, the ideal UK graduate might be expected to embody the qualities of these four discourses, although this seems to vary between universities, as some include more extensive or elaborated lists of graduate attributes than others. These four discourses are similar to the popular attributes as previously reported in the Australian context, especially around personal skills and global engagement (Oliver & Jorre de St Jorre, 2018; Osmani et al., 2015; Rust & Froud, 2011).

Whilst our analysis did not unveil notable patterns by university ranking or type (e.g., pre-1992 vs post-1992[1]), there were interesting differences in how graduate attributes are drawn by different universities. For instance, the *University of the Arts, London* repeats abstract nouns such as 'creativity', 'connectivity', 'talent' and 'open-mindedness', whereas *Newcastle University* tends to use financial or mathematical terms, such as 'numeracy', 'calculating', 'budgeting', 'income', 'expenditure' and the 'economy'. Universities such as *Imperial College London*, *Cardiff Metropolitan University* and the *University of Portsmouth* focus on multicultural awareness and building human relations, whilst the *University of Huddersfield* emphasises the importance of 'leadership', 'followership' and 'teamwork'. Others, such as the *University of Brighton*, highlight the value of an enterprise, as *Birmingham City University* draws on organisational success. Our findings indicate that the formation of UK graduate attributes appears quite diverse, which is likely to reflect the individual cultures and ethos of the respective university, rather than to emulate any national frameworks. More research is merited on how graduate attributes may differ according to university types, especially as higher education has seen increased marketisation and pressure to contribute an elite workforce to the global labour market. Nonetheless, our analysis provides an important systematic overview of what we can expect from UK graduates, bringing together different definitions and terminologies under four overarching discourses.

So, where do we go next? It is important to recognise that whilst the mapping exercise offered us an informative overview of UK graduate attributes, it is just a start. The challenges reported in Australia on the development and implementation of graduate attributes are likely to be similar in the UK. Although Barrie et al. (2009) offered eight interacting elements, or stages, for the implementation of graduate attributes (i.e., conceptions, stakeholders, implementation, curriculum, assessment, quality assurance, staff development and student-centred), we found limited evidence in our mapping exercise that UK graduate attributes are systematically or consistently developed, or

foregrounded by specific educational or learning theories or approaches. The formation of graduate attributes appears to be driven by senior management teams or even marketing, which may or may not reflect the values and ideologies of their staff and students.

Here, we suggest that the initial conception stage of graduate attribute implementation could be approached alongside the last two elements, namely staff and students (Barrie et al., 2009). Specifically, as key educators and learners, student and staff expectations of university students would offer a 'bottom-up' approach to interpret what it means to be a graduate (Oliver & Jorre de St Jorre, 2018). Here, the concept of the 'ideal student' (Wong & Chiu, 2019, 2020) might be a useful thinking tool to underpin how constructions of graduate attributes can be shaped through discussions and negotiations between staff and students on what is ideally expected of university students, not just during university but more specifically upon graduation (Balloo, 2018). Graduate attributes could be interpreted as a proxy for the 'ideal graduate', with a renewed emphasis that considers not only the priorities of institutions but also the expectations of staff and students themselves.

Whilst senior leaders may yet have the final say on the graduate attributes that are eventually marketed for their university, what we are advocating is a more open and inclusive discussion of what should be the 'ideal graduate' attributes at a particular university, or even discipline. In other words, the views of staff and the aspirations of students should be regularly consulted to ensure that there is a synergy between expectations of graduates from the university as well as its educators and learners. In practice, however, graduate attributes are often universally applied for an institution. As such, individual degrees and departments ought to be proactive to support students to decode and understand what these graduate attributes mean in the context of their study.

As Jones (2013) warned, it is unclear the extent to which individual disciplines/departments can successfully embed these seemingly generic graduate attributes into their curriculums and pedagogies, because in practice 'there is nothing generic about graduate attributes' due to different meanings for similar characteristics across disciplines (Jones, 2009a, 2009b). If staff can unpack and make clear links to how different aspects of their subject degrees can contribute to these graduate attributes, students can better appreciate and recognise the transferable qualities of their study, which is important as graduates enter an increasingly complex workplace. Further research is merited to fully understand the formation but also understandings of UK graduate attributes, especially from the roles and inputs of different stakeholders, such as staff and students. For now, based on institutional ideals, we highlighted that the typical UK graduate is expected to be versed in self-awareness, professional development, global citizenship, and research literacy.

Note

1. UK universities can be categorised into two types: Pre-1992 universities are typically considered to be more research oriented, especially Russell Group universities. Post-1992 universities are mostly former polytechnics, with a history of being more teaching oriented.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by British Academy: [grant number SG 170137].

ORCID

Billy Wong http://orcid.org/0000-0002-7310-6418
Yuan-Li Tiffany Chiu http://orcid.org/0000-0002-1520-5637

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Appendices

Appendix 1: UUK members with publicised graduate attributes (January 2020)

Aberystwyth	… Derby
Anglia Ruskin	… East Anglia
Bath Spa	… Edinburgh
Birmingham City	… Essex
Bishop Grosseteste	… Exeter
Bournemouth	… Glasgow
Buckinghamshire	… Gloucestershire
Cardiff Metropolitan	… Greenwich
Durham	… Hertfordshire
Edinburgh Napier	… Huddersfield
Glasgow Caledonian	… Islands and Highlands
Heriot-Watt	… Kent
Imperial College London	… Lancashire

Keele	… Leeds
King's College London	… Liverpool
Leeds Beckett	… Manchester
London Metropolitan	… Northampton
Newcastle	… Plymouth
Nottingham Trent	… Portsmouth
Oxford Brookes	… Reading
Prifysgol Bangor	… Roehampton
Queen Margaret	… Salford
Queen Mary, University of London	… Sheffield
Queen's University Belfast	… Southampton
Robert Gordon	… Stirling
Sheffield Hallam	… Strathclyde
Swansea	… Wales Trinity Saint David
Trinity Laban Conservatoire of Music & Dance	… Warwick
Ulster	… West England Bristol
University College London	… West London
University of Aberdeen	… West Scotland
… Birmingham	… Westminster, London
… Bolton	… Wolverhampton
… Brighton	… Worcester
… Bristol	… York
… Cambridge	… the Arts, London
… Chester	Wrexham Glyndwr
… Cumbria	York St John

Appendix 2: Discourses, *subcodes and (coding frequencies)*

Self-awareness & lifelong learning (480)

Adaptability (99)
(Managing setbacks and challenges; Problem solving)
Critical self-awareness (154)
(Future-facing self; Maximising potential; Intellectual curiosity; Self-directed study and independent learning; Self-improvement strategies and personal literacies; Strengths and weaknesses)
Effective communication (152)
(Information and digital literacies; Skills in technology)
Emotional intelligence (45)
(Resilience; Confidence and self-esteem)
Organisation and time management (24)
(Meeting deadlines; Personal targets and lifegoals)

Employability graduate & professional development (337)

Leadership (24)
(Building strong rapports with colleagues; Managing conflict; Shared organisational goals)
Specialist knowledge and commercial awareness (16)
(Financial and numerical skills)
Working effectively with others (142)

Global citizenship & engagement (319)

Environmental awareness (12)
Interpersonal skills (47)
(Building international networks; Foreign language skills)
Social and civic responsibility (71)
(Equality, diversity and inclusion; Engagement with local or global communities)

Academic & research literacy (311)

Academic literacy (79)
(Academic expression; Knowledge of academic structure, formatting and referencing; Knowledge of literature, scholars and specialists)
Critical thinking (51)
(Contributing new knowledge and ideas; Evaluating evidence; Forming conclusions; Creative and innovative thinking)
Research literacy (169)
(Ethical responsibility and sustainability; Knowledge and application of research procedures; Building rapport with stakeholders)
Note: Some data were coded directly into the main code.