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**GAPS IN THE STUDENT
EXPERIENCE:
UNDERSTANDING THE
IMPACT OF APPROACHES
TO BOOSTING
ATTAINMENT,
RETENTION, WELLBEING
AND EMPLOYMENT**

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Coventry University and
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report

**Bridge
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research
action
equality


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Introduction

- 1.1. Participation in higher education has often been seen as a route to social mobility and access to the professions. This conception of higher education as a social leveller has been challenged by increased scrutiny of disparity in the student experience, in terms of retention, wellbeing, and success.
- 1.2. The primary indicators of graduate success have, to-date, been degree attainment and employment rates. The literature suggests, however, that higher education providers are adopting a broader conceptualisation of impact: considering how activity can influence institutional culture and wider society, as well as students, in order to create sustainable change.
- 1.3. For instance, higher education providers are increasingly seeking holistic ways of addressing inequality, alongside discrete interventions, introducing a range of practices and system changes to transform the mainstream academic and social experience. This involves using a widening array of indicators to demonstrate impact (Mountford-Zimdars, et al., 2015).
- 1.4. This shift in higher education policy and practice to combat inequality has implications for this review and may go some way towards accounting for the limited evidence included. While it is to be applauded that higher education providers are adopting strategic approaches to address differential outcomes and embed practice, it creates significant challenges for researchers looking to identify impact. A move away from targeted interventions towards mainstream action to foster diversity and inclusion makes the methods needed for impact evaluation more complex.
- 1.5. Graduate outcomes indicators reveal the persistence of inequality along the lines of class, ethnicity, and gender (and other diversity characteristics) but also according to the status of the institution attended. Increased understanding of graduate outcomes is critically important for devising policy to address inequality in access, success, and outcomes, to narrow the gaps within and between institutions.
- 1.6. This review examines 157 studies on attainment, wellbeing, retention and employment outcomes. There is not an even distribution of studies across these themes. There is a significant absence of evidence relating to employment outcomes and we refer to only five interventions here. We provide a discussion of the relationship between education and the workplace in an endeavour to explain the weak evidence base and derive our recommendations from this wider literature along with analysis of impact evaluations.
- 1.7. Attainment, wellbeing, retention, and employment outcomes are closely intertwined in complex ways. The report examines the impact evidence currently available for each theme in turn while recognising this interdependence. For instance, improved attainment has a positive impact on employment outcomes; therefore, any interventions to promote attainment are relevant in the context of analysis of employment outcomes.
- 1.8. We adopt a broad conceptualisation of 'intervention' to encompass a range of activity and in recognition of the limited evidence of targeted programmes. The report also considers the barriers to evaluation, which go some way to explaining the weak evidence base.
- 1.9. The first part of our report proceeds as follows: in Sections 2 and 3 we set out our key findings and recommendations; in Section 4 we describe our methodology; and in Section 5 we justify how we measure and define impact in our review sources.
- 1.10. We split the body of our review into two sections, both of which focus on evidence for interventions designed to address gaps in the students experience: Section 6

focuses on interventions designed to support attainment, retention and wellbeing while Section 7 focuses on employment outcomes.

- 1.11. It is important to note that, because there was a lack of evidence on employment outcomes, we widened the scope of our review to include issues including employability, human capital theory, graduate outcomes, and inequality in higher education. Therefore, in Section 8 we provide an additional discussion of employment versus employability which provides important context to our recommendations.
- 1.12. Our review concludes with recommendations in Section 9.

2. Key findings

- 2.1. Very few existing studies have made a causal link between an activity or intervention and outcomes.
- 2.2. Many interventions conducted in practice within a live higher education setting struggle to attribute effect, given the presence of many other student engagement initiatives occurring at the institution during the same period.
- 2.3. Interventions focused on health and wellbeing, retention and attainment sometimes combine those groupings and refer to more than one of these problems as being served by an intervention.
- 2.4. There is also a strong link between degree attainment and employment outcomes, and therefore any interventions aimed at enhancing student success are relevant to subsequent graduate outcomes.
- 2.5. Higher education activity that responds to the demands of employers can support student success and graduate outcomes, for example, work experience and extra-curricular activities. But studies have so far not isolated factors to make a causal link between these activities and outcomes.
- 2.6. The majority of retention and attainment studies referenced in this review were conducted in a single-institution context – there are few studies which draw findings from across multiple sites and contexts.
- 2.7. The paucity of evidence on interventions to address gaps in the student experience may be a product of higher education providers' increased focus on universal provision and embedded practice, embracing a broader conceptualisation of impact which includes developing more inclusive organisational cultures.
- 2.8. It remains to be seen whether mainstream initiatives to bolster student success are more helpful in narrowing the gaps than targeted interventions to support those groups most disadvantaged in the institution without giving rise to a deficit approach amongst staff.
- 2.9. There is a lack of student voice in the design and evaluation of interventions.
- 2.10. There is a limited literature on the evaluation of interventions focused on closing gaps in employment outcomes, but a substantial literature on employability. In view of the array of factors contributing to a graduate's position in the labour market (societal, educational, economic, and individual), there are methodological challenges involved when seeking to associate graduate outcomes with particular interventions.
- 2.11. Measuring employment outcomes is a highly contested terrain in the context of social equality and the Longitudinal Education Outcomes (LEO) and Destination of Leavers from Higher Education (DLHE) data have received criticism. Much of the concern over the LEO dataset, for example, centres on the lack of contextualisation and the

challenges associated with making pay comparisons between higher education providers in different parts of the country with diverse labour markets.

3. Recommendations

- 3.1. Ideally, causal links between interventions and student outcomes should be identified. However, in practice this is not always achievable, and attention should also be focused on evaluating the impact of activity in relation to a wide range of student outcome indicators.
- 3.2. Evaluations of interventions which show effectiveness are found in the review, but more work is required to develop a strong understanding of effective evaluation approaches. Further, it should be acknowledged that to be effective with all students, multiple interventions may need to take place concurrently and this can be at odds with the climate required to isolate the effect of discrete activities (Bettinger & Baker, 2014).
- 3.3. Evaluations of interventions need to increase their focus on intersectionality to highlight the way that students may experience 'disadvantage' along multiple axes of inequality. This involves disaggregating data on student characteristics to observe the dynamics of inequalities (or the inequality interactions).
- 3.4. Broadly, future intervention evaluation should focus on developing what we know qualitatively into a frame of reference that has a quantitative outcome, in order to evaluate a relative impact both to the individual student and the institution.
- 3.5. Evaluation should place greater emphasis on comparative analysis of the effectiveness of different approaches to inform planning. This should involve developing frameworks that recognise higher education institutions' adoption of a more holistic 'life course' approach.
- 3.6. The review found strong positive associations between student engagement in several types of interventions and subsequent retention, attainment and/or employment outcomes. However, most studies struggled to overcome methodological constraints such as intrinsic self-selection bias. More research, seeking to evaluate the individual effects of the following initiatives, is therefore recommended:
 - Mentoring, guidance and counselling interventions
 - Work experience (sandwich and/or short-term placements)
 - Extra-curricular interventions
 - Student financial support (e.g. a meta-analysis of HEIs' adoption of the [OfS Financial Support Evaluation Toolkit](#))
- 3.7. Despite increased sector awareness and regulation there was a dearth of causal evidence as to what works to narrow deep rooted gaps in student success outcomes. More research is therefore recommended on evidencing gaps in the student experience, and in particular:
 - Gaps in degree outcomes between Black, Asian and minority ethnic (BAME) and white students
 - Gaps in non-continuation between advantaged and disadvantaged socio-economic groups
- 3.8. The review uncovered few or no studies relating to some specific groups known to have lower rates of retention and/or attainment. As such there is a gap in evidence for the following groups, for which commissioned research should be considered:
 - Mature students
 - Commuting students
 - Part-time students

- Students entering via vocational routes (e.g. BTEC qualifications)
- 3.9. The review strengthens the case that further research is needed to enable the sector to support all higher education students to reach their academic potential (Mountford-Zimdars, et al., 2015).

4. Methodology

- 4.1. The research questions for this review were:
- What is the existing evidence on what works (and what does not) in terms of closing ‘gaps’ in the student experience?
 - What is the strength of evidence for different interventions in the literature?
 - What evidence gaps need to be filled?
- 4.2. This review incorporates evidence from two sources. The first source was submissions from a TASO evidence call to UK higher education providers and associated stakeholders, of which 37 were identified as relevant for inclusion in this review. The second source was a review of the academic literature. Search terms and inclusion criteria were drawn up to discover examples of studies on the efficacy of interventions to narrow the gap in attainment for students with certain demographic characteristics (e.g. Black, Asian or minority ethnic students or those with a disability).
- 4.3. Customised searches using agreed keywords were used for each of Retention, Attainment & Wellbeing and Employment (see Annex A).
- 4.4. Papers were further limited to those published after 2012 and written in the English language.
- 4.5. The following databases were used: Academic search Complete, PsycARTICLES, PsycINFO, ERIC and Business Source Complete. The process was iterative and utilised the citation recording facilities provided by publishers (i.e. CrossRef) to validate intervention impact, influence and scope.
- 4.6. The volume of evidence is summarised in Table 1 below. The total number of items used in this review is 150, although the totals in Table 1 show an article as being counted more than once if it addressed, for instance, retention and attainment.

	Evidence base				Total
	Retention	Attainment	Wellbeing	Employment	
TASO submission	16	23	9	6	54
Wider literature	57	30	39	20	146
Total	73	53	48	26	200

Table 1: Evidence base

- 4.7. As shown in the table, the majority of submissions to TASO’s evidence call were focused on issues relating to retention and attainment. Employment outcomes were rarely mentioned and where they were it was generally without enough detail to fully understand the impact.
- 4.8. In view of the paucity of evidence on interventions to address employment outcomes, we widened search terms to include: employability, human capital theory, graduate outcomes, and inequality in higher education. Consequently, our analysis addresses evidence of what works to support employment outcomes but also why there is a weak evidence base. This diverse evidence base informs our recommendations on devising future frameworks for evaluation.
- 4.9. The evidence naturally fell into two categories: retention/attainment/wellbeing and employment/employability. Sections 8 and 9 handle these topics separately. We also present an additional decision of employment versus employability in Section 10, which provides important context to our recommendations.

5. Measuring and defining impact

- 5.1. TASO provided a typology with which to categorise the different sources according to a range of criteria (see Annex B). This typology was designed to facilitate synthesis across evidence reviews commissioned by TASO and captures the key features of studies which focus on the impact of interventions to address inequality in the student experience.
- 5.2. It is important to note that there are some studies included that do not align clearly with either of the four search categories or the typology described above. Primarily, this is because they are not typically targeted interventions, designed to create change; therefore, they do not have an intervention theory which links to institutional practice and evaluation procedures. For instance, they may be empirical studies of universal student activity (such as participation in extra-curricular activities) and not a strategically designed intervention to impact on attainment or graduate employment rates (Adele Abbasi, 2018).
- 5.3. We adopt a broad conceptual understanding of the term 'intervention' in order to assess an array of evidence of impact. This is important to recognise the work undertaken to evaluate participation in the 'student experience' in the context of differential student and graduate outcomes.
- 5.4. We classified submissions according to the 'Standards of evidence and evaluating impact of outreach developed by the Office for Students (Office for Students, 2019).
- 5.5. To be classed as narrative, studies needed to feature a narrative or a coherent theory of change to motivate its selection of activities, a clear explanation of what was done and why, and research to back any claims to impact.
- 5.6. A study was classified as empirical if data was collected and reported on impact without establishing direct causal effect. An example might be a comparison of data collected pre- and post-intervention.
- 5.7. Causal studies used methods which allowed the researchers to attribute causal impact to an intervention, for example experimental and quasi-experimental studies.
- 5.8. As a result of classifying the call submissions and research literature the following observations can be made: both the call for evidence and reviewed literature revealed limited causal evidence, with 7 of the 150 total items classified as narrative, 120 as empirical and 21 as causal.¹
- 5.9. Signs of impact were categorised as to whether reported in studies as positive, negative, mixed or none (See Figures 1a-d).
- 5.10. The extent to which empirical enquiry dominates the type of evidence available is illustrated in Figures 1a-d, and is further broken down according to whether the evidence of impact in each case is reported as positive, negative, mixed or none.

¹ Two sources were reviews which did not fit into any of these categories, so the total is lower than the total number of sources included in the review.

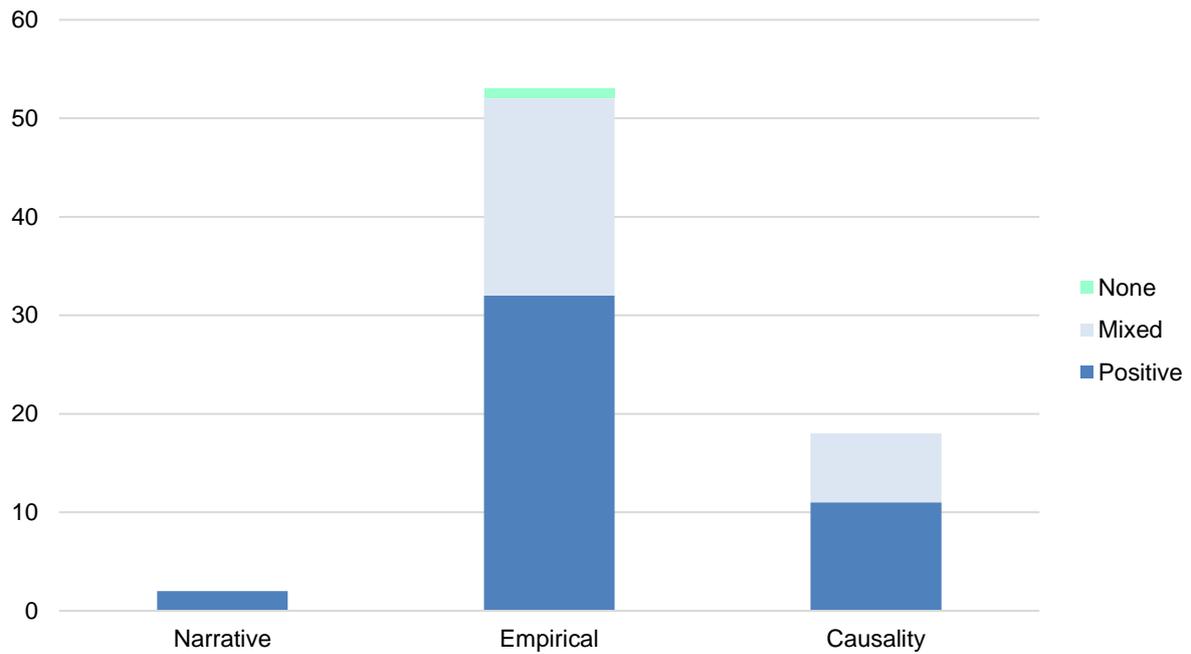


Figure 1a: Type of Evidence: Retention (by sign of impact i.e. whether the study suggested the intervention under evaluation had positive/mixed/negative/no impact).

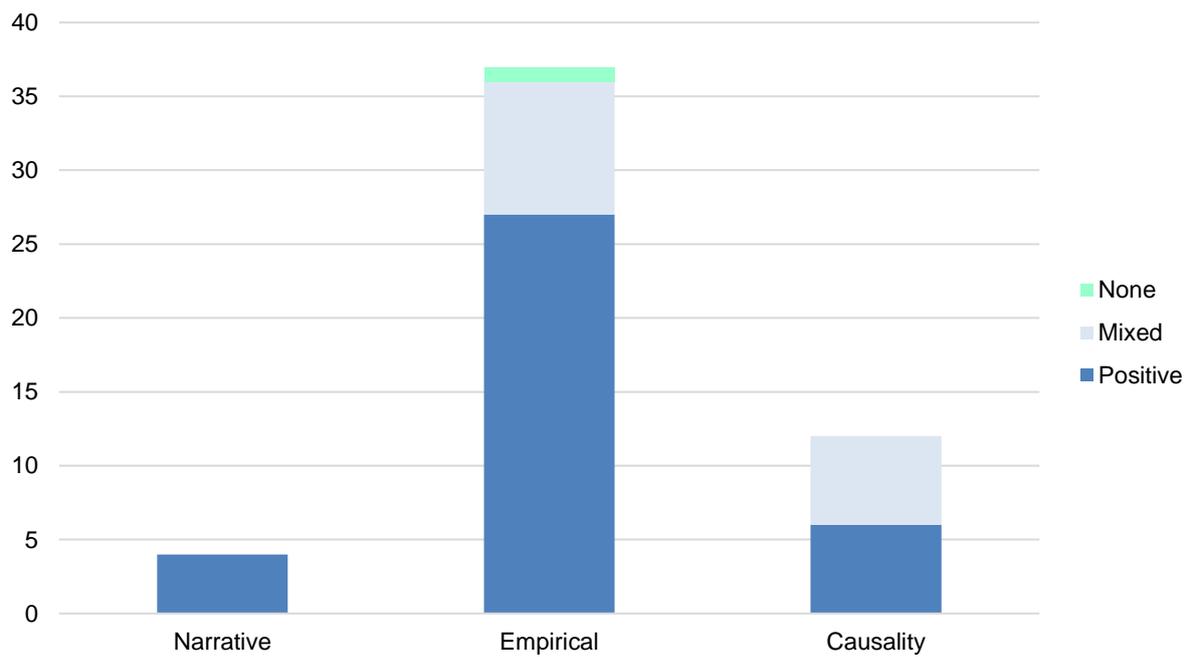


Figure 1b: Type of Evidence: Attainment (by sign of impact i.e. whether the study suggested the intervention under evaluation had positive/mixed/negative/no impact).

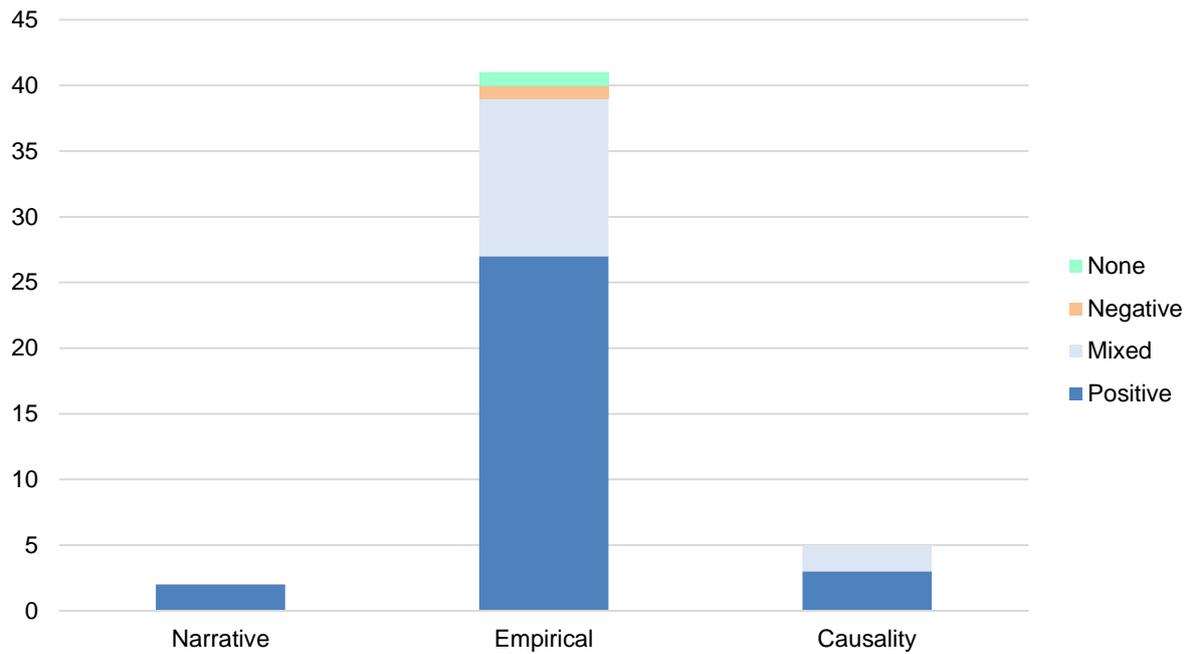


Figure 1c: Type of Evidence: Wellbeing and mental health (by sign of impact i.e. whether the study suggested the intervention under evaluation had positive/mixed/negative/no impact).

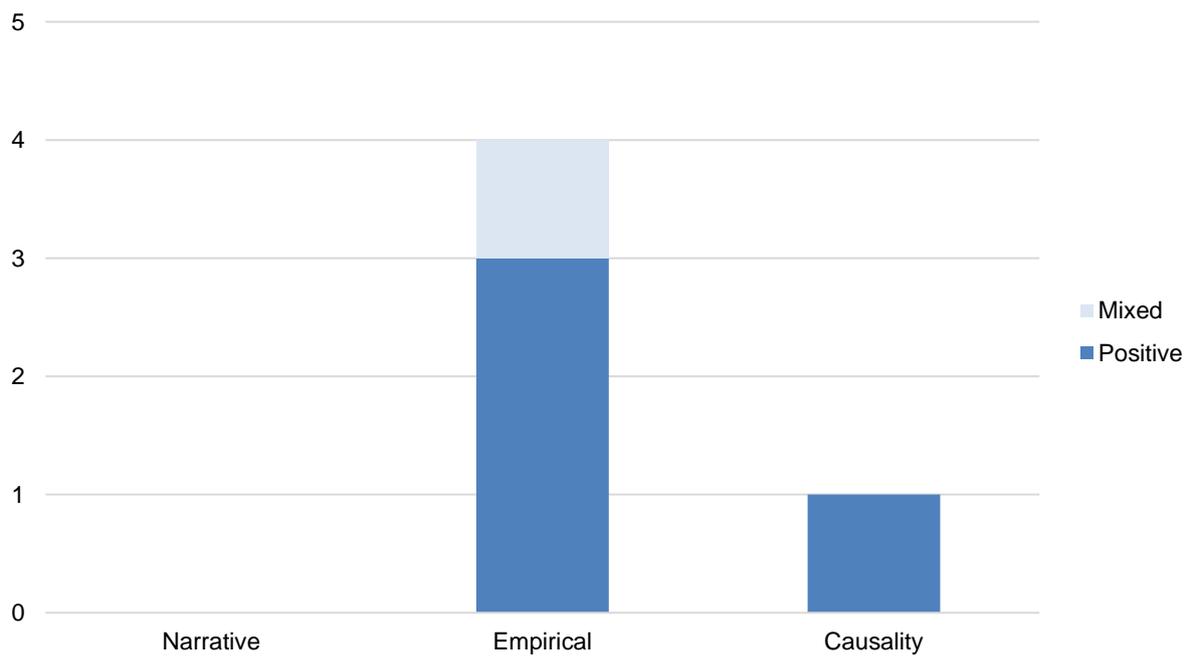


Figure 1d: Types of evidence: employment (by sign of impact i.e. whether the study suggested the intervention under evaluation had positive/mixed/negative/no impact).

	Primarily qualitative	Primarily quantitative	Mixed-methods	Other	Total
Retention	15	40	14	4	73
Attainment	4	34	14	1	53
Wellbeing and mental health	16	19	10	3	48
Employment	7	9	2	8	26
All categories ²	36	75	25	14	150

Table 2: The extent to which studies included are quantitative, qualitative or mixed methods

	Best evidence	Developing evidence	Weak evidence	Total
Retention	34	39		73
Attainment	24	29		53
Wellbeing and mental health	13	34	1	48
Employment	14	8	1	23
All categories ³	62	83	2	147

Table 3: Summarises whether the studies were considered weak, developing or best evidence

- 5.11. The studies were also reviewed according to which groups were targeted. However, it was found that many interventions are targeted at all students, rather than focussed on students from a particular demographic group. This is particularly the case for the research literature reviewed. Where demographic characteristics are explicitly targeted, BAME students are the most targeted group (19 studies). We uncovered no studies looking at commuter, part-time or mature students.
- 5.12. In terms of methods, wellbeing studies use a mix of methods (16 were qualitative, 10 were mixed methods and 19 quantitative), whereas a bigger proportion of attainment and retention studies are quantitative (57 out of 98 individual papers).⁴
- 5.13. We found it challenging to assess the quality of the sources according to the Office for Students standards of evidence (which splits evidence into three types: ‘weak evidence’, ‘developing evidence’ and ‘best evidence’). The standards define quality according to several factors: underpinning rationale; grounding in the literature; engagement in debate beyond the institution in which the evidence was created; criticality and coherence. The extent to which studies meet these criteria, can be a subjective decision, given such information might be presented indirectly. Also, the review team were reluctant to ‘downgrade’ material which had appeared in quality

² The ‘all categories’ total is lower than the total across rows because sources were counted in more than one row (e.g. relating to both retention and attainment).

³ The ‘all categories’ total is lower than the total across rows because sources were counted in more than one row (e.g. relating to both retention and attainment). Three sources were not classified according to this rating hence the discrepancy versus the total number of sources in the review.

⁴ Again, some sources sat in more than one of these categories, hence the discrepancy versus Table 2.

peer reviewed journals. The majority of the evidence was classed as developing (83 papers or submissions), 62 as best, and 2 as weak evidence. We excluded three sources as they were reviews which did not fit in this classification.

- 5.14. In the context of employment outcomes, the majority of submissions to TASO were not relevant. They had little or no evidence of a relationship between provider activity and rates of employment. In some cases, they demonstrated a link with attainment which, in turn, may have impacted on employment rates but this was not widely investigated and, hence, such studies are only considered under the theme of 'attainment'.
- 5.15. The limited availability of evidence on employment outcomes, combined with its weakness, is a product of limited data on graduates beyond DLHE (which has variable return rates by institution, course, and student characteristics). Whilst students are studying in higher education, they can be tracked, interviewed and surveyed; but, once they have left, it is difficult for providers to gather data to assess the impact of its activity.

6. A focus on attainment/retention/wellbeing

6.1. Student success has been variously defined, but to each student, success is defined by their own aspirations and goals (Kahu & Nelson, 2017; Picton, et al., 2018). The terms attainment, retention and wellbeing, are broadly defined in the papers reviewed. Sometimes studies address more than one theme, with wellbeing, for instance, being a necessary feature of attainment and/or retention (Collings, et al., 2014; Everett, 2015; Xie, et al., 2018; Schaeper, 2020). The evolving nature and lack of clarity in definitions affects our ability to create a well-defined review of the intervention landscape. In order to successfully navigate that landscape, we adopted an alternative to reviewing by topic. Instead, we thematically reviewed the literature according to the barriers or drivers that the interventions are focussed on. These themes were:

- Learning Analytics
- Financial and Other Social Barriers to Study
- Mentoring, Guidance and Counselling Interventions
- Skills Profiles, Social Interaction and Learning Communities Interventions
- Institution centred Processes and Policies with Progression and Completion Focus

Key points from each theme review are summarised below.

Learning Analytics

- 6.2. Learning analytics is defined as the collection and analysis of demographic, behavioural and digital trace data of students with the purpose of improving their experiences and outcomes by enabling more personalised interventions (Francis, et al., 2019).⁵ There are 8 studies categorised under this theme, 7 academic papers and one TASO call submission (a report from the Higher Education Statistics Agency). The majority of studies aimed to evaluate data-led ways to improve student retention, attainment and wellbeing and mental health. This broad grouping includes studies that review admission practises, the use of student tracking data to increase the effectiveness of interventions and coping strategies (Ooijen-van der Linden, et al., 2017); Bijsmans & Schakel, 2018; Tran & Lumley, 2019).
- 6.3. Six of the eight documents were classified as empirical with the other 2 studies evidencing causality (Mayer, et al., 2019; Bijsmans & Schakel, 2018). All papers bar one used primarily quantitative methods which is unsurprising considering this theme's focus on data driven interventions. Mayer et al (2019), is the only exception to this, using both data analysis of student attainment records and data gained through interviews with intervention administrators.
- 6.4. Like Mayer et al (2019), the majority of studies utilised administrative student data for research (Higher Education Statistics Agency, 2019) to assess student attainment and retention rates. Meanwhile, two studies assessing the effect of student wellbeing and mental health (Tran & Lumley, 2019) used self-report questionnaires to gain quantitative data.

⁵ A detailed examination of learning analytics to guide interventions was not part of this review but will form the subject of further work by TASO.

- 6.5. The only study that explicitly used a control group used a randomized control trial research design (Mayer et al, 2019). This research design alongside the large sample group (8,011 students from three different American Colleges) and the use of interviews, aligned with the OfS description of best evidence. Ooijen-van der Linda et al (2017), and the HEAT-HESA (2018) tracking report were the 2 other studies rated best evidence. Both these studies used data analysis via HEAT tracking data.
- 6.6. Gaps were identified. Firstly, the use of primarily quantitative methods means we do not have an insight into student's thoughts, views and experiences with Learner Analytics. Secondly, the majority of the studies in this theme (5) are internationally focussed rather than based on a British HE experience. Lastly, only two studies are targeted at a disadvantaged student group. The HEAT-HESA (2018) tracking report focused on economically disadvantaged students and Tran et al (2019) looked at the experiences of university students with documented health issues.

Financial and other social barriers to study

- 6.7. There were 21 studies categorised under financial and other social barriers. The literature for the most part, focused on investigating the effects of financial aid (such as bursaries, fee waivers and scholarships) or the effect reforms of financial aid systems had on retention, attainment and the wellbeing and mental health of students. Broadly, the literature supports bursaries as an effective method to alleviate financial disadvantage and thus mitigate the negative association between financial disadvantage and student success. As well as facilitating students to apply for and continue to study at higher education providers, financial aid was also found to boost attainment and the wellbeing of students by reducing finance related anxiety and increasing a sense of 'belonging' (Hoare & Lightfoot, 2015; Clark & Hordosy, 2018; Hordosy, et al., 2018; Kerrigan & Shaw, 2018).
- 6.8. Fee waivers have been found to be an ineffective method of overcoming financial disadvantage, particularly for those students with the lowest family income (Kerrigan & Shaw, 2018; Fack & Grenet, 2015). Several studies concluded that financial aid works most effectively in combination with pastoral support. These findings support Farenga (2015) and Hoare & Lightfoot (2015) assertions that financial matters are often not the only factor in student's decision to drop out of higher education.
- 6.9. The scale of research ranged from case studies of interventions at individual higher education providers to country wide reviews studying financial aid system reform in Sweden (Avdic & Marie, 2015), in addition to studying France's largest financial aid package (Fack & Grenet, 2015). Sample sizes varied from 20 students (Cosh & Tully, 2013) to whole American states (e.g. Castleman & Long (2016) researched the Florida Student Access Grant, and Bettinger (2015) reviewed financial aid reform in Ohio).
- 6.10. Most studies drew conclusions from analysis of 'administrative' data. This data included school records, entrance exam scores and retention and attainment rates whilst in higher education. The large-scale studies utilised public records from government sources. Additionally, studies used information on a student's demographic background and financial situation through information the students disclosed as part of application to higher education providers and financial aid applications. Several of the American studies used information gained through the Free Application for Federal Student Aid (FAFSA). Every student who wants to be considered for financial aid in America must complete the survey and it is a prerequisite to applying for state scholarships or the Federal Pell Grant Award. Likewise, Fack & Grenet (2015) used information from the Bourse sur critère sociaux (scholarship on social criteria). From these sources, information regarding student's family income was available as well as demographic information. Finally, in single

institution case studies, literature is often based on the institution's own administrative records. However, information is also collected directly from the students through surveys and follow-up focus groups or interviews conducted by the institutions themselves.

- 6.11. Due to the nature of financial aid interventions, it is unsurprising that methods focus primarily on quantitative or mixed methods. Studies use a range of appropriate analysis methods once data had been collected. The primarily quantitative studies all used advanced statistical analysis, with regression as the most common method. Many of the studies focusing on individual British institutions used Binary Logistic Regression which is the method recommended by the Office for Students (2019). Of the primarily qualitative studies, the qualitative thematic analysis developed by Braun & Clarke (2006), was most frequently used.
- 6.12. The limited availability of financial aid enabled the creation of 'natural' control groups in some cases, in that aid packages could abruptly change and provide naturally occurring groups of students receiving differential support (Bettinger, 2015). Broton, et al. (2016), Byrne and Cushing (2015) and Agasisti and Murtuni (2014) compared groups of students who were all eligible for financial aid but where only some were awarded it. Meanwhile, Castleman and Long (2016), Fack and Grenet (2015), O'Brien (2015) and the University of Liverpool (2019) made use of more indirect comparisons. These studies utilised discontinuities in the current system, comparing students receiving financial aid against students who narrowly missed the 'cut off point' for financial aid. Bettinger (2015) and Kerrigan & Shaw (2018) used changes in financial aid systems as an opportunity to assess the impact these changes had by comparing student outcomes under the 'old' and 'new' system.
- 6.13. Only two studies assess the cost-effectiveness of the interventions. In France, Fack and Grenet (2015) found that the €1,500 cash allowances for living costs was cost-effective across both undergraduate and postgraduate study. Bettinger (2015) concluded that increased generosity of the Ohio College Opportunity Grant was not cost-effective due to a lack of targeting, meaning that 'marginal' students who would be most 'sensitive' to the financial aid were not effectively reached.
- 6.14. As expected, socio-economically disadvantaged learners were the target of interventions if the interventions were targeted at all. However, more frequently interventions had no targeting.
- 6.15. Although this section reviews several case studies from the UK, all of the UK studies investigated financial barriers at single higher education providers. Studies with an international focus provide broader scale assessments of financial aid.
- 6.16. Several of the studies based in UK universities identified the need for further research. Research with a focus on targeting specific groups of students is needed. Specifically, students who are BAME, mature, disabled, part-time, commuter, carers and care-leavers are underrepresented in current literature on the impact of financial barriers. Additionally, further research is needed throughout the student life cycle. Many studies focus only on students in their first year of university; research into later stages of the student cycle, including the final year of undergraduate degrees and postgraduate degrees are needed.
- 6.17. Finally, further qualitative research is needed to assess the influence of financial support on student retention, attainment and wellbeing and mental health. Many of the TASO call submissions from UK higher education providers used robust mixed methods, integrating the student voice through interviews and focus groups. However, limited insights could be drawn from these studies due to the small scale of samples.

Mentoring, guidance and counselling interventions

- 6.18. There are 19 studies in the theme mentoring, guidance and counselling interventions. These include a range of interventions including peer mentoring, academic guidance, cognitive interventions and interventions aimed at easing the transition to university for specific student groups. Most frequently reviewed is the use of scholastic probation. Probation is a status predominantly used in America for college students who are at risk of dismissal due to poor academic performance. Five studies investigate the effect probation has on retention and attainment. Meanwhile, about half of the studies (9) focus on UK institutions and are case studies of practises at individual universities.
- 6.19. Broadly, the literature considers mentoring, guidance and counselling as an effective method of increasing retention and attainment rates and boosting wellbeing. Additionally, two studies referenced the cost effectiveness of these types of interventions with Bettinger & Baker (2014), noting that student coaching was more cost-effective at increasing the attainment and retention rates of 'non-traditional' students compared to previously studied financial aid interventions.
- 6.20. The size of the studies ranged from a case study at University College London (Odette, et al., 2018) of 10 participants to a survey conducted by the Centre for Community College (2018) with 113,315 respondents. The majority of the studies focused on case studies of interventions in single institutions with only 3 studies investigating more than one institution at a time, all of which were international studies. Fletcher and Tokmouline (2017) studied four colleges in Texas, Jenkins, et al., (2018) investigated a state-wide intervention for community colleges in Tennessee and the Centre for Community Colleges surveyed 108 community colleges in America.
- 6.21. Quantitative methods dominate (11 documents). For the most part, studies using primarily quantitative methods evaluate an intervention through the analysis of student administrative data, such as student grade records and re-enrolment rates, to assess the effect the intervention had on retention and attainment. Additionally, some of these studies gained data directly from intervention practitioners and managers as well as students through surveys before association analysis via forms of regression and analysis of variance took place. Meanwhile, studies using primarily qualitative methodology utilised a much wider range of research methods including: interviews, focus groups, observations, narrative inquiry and the use of Photovoice (a qualitative method where people take photographs that express their thoughts and opinions).
- 6.22. Only three studies reference the use of an explicit control group created for the study. The majority of the studies retroactively analysed student performance before and after an intervention. The intervention's success was assessed by comparing student outcomes against students who were identified as not taking part in the intervention. Of note is Kot (2014) who matches demographic characteristics of control group participants to intervention participants to assess causality between receipt of centralized advising and improved retention and attainment rates.
- 6.23. Retention was the most commonly targeted outcome of the interventions reviewed, with attainment being included in only five of the 19 studies and wellbeing and mental health being included in four.
- 6.24. There is a distinct lack of targeting throughout the literature with only three of the studies targeting an identified disadvantaged population. These studies suggest that the effects of guidance and counselling interventions are mediated by demographic characteristics such as ethnicity and whether the student is a first generation learner. The three targeted studies are The University of Derby (2015) which reviewed a programme of transition support for students with Autism, Hope (2016), a case study

of the experience of first generation learners at a British University and Odette, et al., (2018), who investigated the promotion of psychosocial wellbeing of refugees at University College London.

- 6.25. There is very limited discussion of the cost-effectiveness of interventions. Furthermore, there is a notable lack of studies targeting identified disadvantaged student groups. Studies focusing on UK institutions remain limited to case-studies that involve small numbers of students. There is limited assessment of guidance and counselling initiatives and their capacity to improve student wellbeing and mental health. Many of the studies use re-enrolment and an improvement in academic performance as success indicators, limiting other assessments of success, including the student interpretation.

Skills profiles, social interaction and learning communities

- 6.26. A total of 63 documents (9 call submissions, 54 academic papers) were categorised according to a goal of developing skills profiles, social interaction and learning communities. These goals were bundled together as several case studies of interventions attempted to address all of these elements holistically. An example of this holistic approach is the evidence submitted to TASO by the University of Huddersfield about its Flying Start programme. This takes an inclusive approach to an enhancement programme for all first-year undergraduate student – especially those in widening participation groups – by focussing on instigating early relationships with peers and academics to develop an academic community, alongside developing excitement about the subject of study and developing good study habits (University of Huddersfield, 2018).
- 6.27. The majority of documents in this theme were categorised as empirical, referenced better mental health and wellbeing, belonging retention and academic achievement as goals and were frequently focussed on all learners rather than specific target groups (though some had the capacity to also focus on groups identified within their datasets, e.g. according to ethnicity and gender (Dagley, et al., 2016; Soria & Taylor, 2016; Kampf & Teske, 2013) of the learners).
- 6.28. While it is routinely the case that the focus of interventions is not on a particular student demographic, there is clear focus on the phase or aspect of student experience targeted. Targets include the impact of extra-curricular activity such as sports (Chu & Zhang, 2018), the first-year experience (Everett, 2015), a focus on psychological wellbeing as a driver of success (Baik, et al., 2018), and the development of study skills (Whiteside, et al., 2017).
- 6.29. Many studies do not use control groups to help identify the difference between the support an intervention offers, and not receiving that support (Whiteside, et al., 2017). Where control groups are used, they are frequently not created using randomisation. Students who self-selected to a programme to boost STEM capabilities had their grades compared against a reference group of students who had similar prior attainment but did not select to undertake the programme (Dagley, et al., 2016). Students in Minnesota, U.S. were offered the opportunity to take part in an exercise to help them identify their strengths and apply them when interacting with fellow residents in halls (Soria & Taylor, 2016). Those who could demonstrate that they had developed an awareness of their own personal strengths were found to be more engaged than their peers, but without any control for whether students who took advantage of the training were in any way different from those who did not.
- 6.30. This means that such research cannot show conclusively that any higher achievement is a direct causal result of participation in these interventions. As is

acknowledged in some of the documents, Kerrigan and Manktelow (2019) state that there is need for further research to build causal evaluation methodologies into evaluations attempting to identify clearly the value of discrete interventions.

- 6.31. An example of randomisation is found in Chicago where 2,740 disadvantaged young people living in a high crime area were randomly assigned (or not) into a programme to encourage different thinking about possible behaviours (Heller, et al., 2013). The randomisation was done at school level so that there was participation and non-participation in each school, eliminating school as a factor. Researchers identified reduced instances of violent crime and gains in schooling outcomes. They were also able to undertake a cost-benefit analysis comparing the cost of the programme compared with the social cost of increased crime in its absence. While not a HE example, it contains the level of best evidence this study seeks and many of its methods (e.g. block randomisation) are feasible in a multi-site study looking to evidence generalisability. Indeed, its authors point to the extent to which they were able to apply randomisation methodology associated with an 'efficacy trial' to an 'effectiveness trial' of a large-scale programme. Heller et al. (2013) is an example of a document classified as 'best evidence' defined by TASO as featuring treatment groups and control groups, clear outcome measures measured in the same way for both participants and non-participants, clarity of method so that the work might be replicable and identifying change which is statistically significant. Other documents in this category tended to meet this criterion, but the lack of random assignment to the participant or non-participant groups leaves evidence at the correlation rather than causation level (Kampf & Teske, 2013).
- 6.32. This theme is characterised by two extremes - practice which is deliberately holistic and potentially 'messy' in order to reflect the diverse needs of the student body, and methodologically driven randomisation which potentially omits the individuals institutions would normally target but provides evidence of impact.

Institution centred Processes and Policies with Progression and Completion Focus

- 6.33. A submission from Kingston University (Mcduff, et al., 2018) is an example of a study which can demonstrate results of an activity, but which cannot be categorised as an efficacy study. The document is a review of the implementation of a 'multi-faceted' range of activity to combat the university's BAME attainment gap. While the study carries evidence of activity and also a reduction in the gap, the link evidenced is strictly correlational. Kingston University is represented twice in this category, also submitting an evaluation of a project to allow disadvantaged students to have factors taken into account when deciding admission (Butt & Woods, 2016). Attendance at support interventions prior to starting or identification with certain criteria (e.g. care leaver status) is taken into consideration at different stages of the application cycle. Evaluators analysed data on students on the programme across three years and assessed whether the support available to them impacted on academic success and progression to employment six months after graduation. Academic success was measured via the proportion of good degrees (1st and 2.1) obtained and employment via data from the DLHE survey. Performance was compared with that of peers not in receipt of admission consideration. Results showed that over time and as the scheme developed, students offered contextual admission performed increasingly well and overtook their peers. They were also just as likely to be in employment after graduation. As with other studies in this review, this 'live' roll-out is unable to ensure the comparison group is matched or randomly assigned, and cannot exclude external threats to validity such as other changes in the HE environment over the comparison years.

- 6.34. Two studies look at a new policy in Dutch universities of dismissing failing students, by reviewing after its introduction the drop-out rate (which increased) and the success rate of those 'survivors' (which also increased). In the first study by Arnold (2014), the increases were assessed relative to students on courses where the new policy had not yet been introduced. While not strictly a randomised control group, field of study and university were controlled for in the statistical analysis pointing to the new policy having a strong positive effect on overall completion rates. A second study by Cornelisz, et al., (2019) into the same policy argues that a better comparison is to compare dismissed students with peers close to the cut-off for dismissal, thus comparing students with more like-for-like ability levels.
- 6.35. Mountford-Zimdars et al (2015) have been referenced elsewhere in this report for their observation that institutions with deep institution-wide approaches that engage staff and students at all levels are those most likely to reduce attainment gaps according to demographics such as ethnicity. This finding is based, not on an evaluation of a particular intervention, but on a review of the empirical data on student progression in UK higher education according to demographic factors and an analysis of the current state of knowledge about what features of the HE experience are likely ways to reduce or eliminate this disparity.
- 6.36. Finally, Shields & Masrado (2018) looked at the vocational qualification, the BTEC, and found that students who enter UK HE as undergraduates with this type of qualification (albeit at the same broad level of attainment as their peers as indicated by UCAS tariff) were less likely to leave with a first or upper-second class degree than peers with other qualification types, such as A levels. They used Higher Education Statistics Authority (HESA) data for the whole of the UK and controlled for demographic factors.
- 6.37. A commonality of this theme is that while documents can offer large datasets or compelling narrative, they are less likely to feature a clear single intervention or the characteristics of an efficacy evaluation. As a result, most of the evidence is strictly correlational and informative for future policy, rather than offering best practice as to guidance on potential evaluation models.

Characteristics of successful interventions

- 6.38. Academic skills programmes (analytical thinking, revision skills) appear to be interventions which can make a demonstrable difference to the students' success in the degree course (Taylor, et al., 2018).
- 6.39. Interventions that created social interactions and supported participation in learning activities and learning community engagement were generally effective in their outcome, and could be extrapolated as enhancing the students' wellbeing (Lambert, et al., 2019; Miller, et al., 2018).
- 6.40. Adopting holistic approaches that encompassed engagement, transition, and academic success for groups of students from underrepresented backgrounds was a key feature of successful interventions.
- 6.41. Personalised interventions, such as targeting supportive text messaging tailored to a student's needs based on data analytics, was associated with significant improvements compared with a matched control group for progression rates (Deighton, et al., 2017).
- 6.42. Outside the UK, more restrictive and regulatory policies can be an effective intervention to encourage students to complete their studies in a timely manner. However, findings are contradictory about whether these reduce study drop out or

encourage students to drop out sooner than would otherwise have been the case (Chi & Dow, 2014; Arnold, 2014; Fletche & Tokmouline, 2017; Bowman & Culver, 2018; Casey, et al., 2018; Cornelisz, et al., 2019).

Evaluation barriers

- 6.43. Existing evaluations struggle to isolate interventions from the array of factors contributing to students' and graduates' outcomes, including happenstance and individual propensities. A significant theme emerging is that many interventions conducted in practice cannot attribute effect, given the 'noise' of all of the other student engagement initiatives occurring at the universities during the same period (Collings, et al., 2014; Jackson & Wilton, 2016; Guilmette, et al., 2019; Miller, et al., 2018).
- 6.44. Many studies used in this review are not laboratory-based tests, but 'live' evaluations of the results of interventions designed to improve outcomes for current cohorts. If based on change over time with genuine students, studies struggle to rule out the 'history' threat to internal validity, namely that things may change in the participants' environments other than those which are the subject of inquiry. If run in real time, there are practical and ethical issues associated with withholding or delaying receipt of an intervention which must be carefully considered during evaluation design.
- 6.45. There is a lack of reference to student perceptions of effective interventions that would support their progression (Baik, et al., 2019). Instead, interventions are largely identified by the institution (Arnold, 2014; Mountford-Zimdars, et al., 2015; Casey, et al., 2018; Kahu & Nelson, 2017; Owens, 2019).
- 6.46. It is sometimes difficult for institutions to target and segment students according to student characteristics both practically and ethically. As noted elsewhere, there are few interventions which target particular student groups. This may be a result of institutions wanting to avoid stigmatizing students and influencing their expectations of their performance along with those of staff. Instead, emphasis is given to universal or mainstream activity.

7. A focus on employment

- 7.1. The Office for Students has a key regulatory objective to ensure that all students in higher education are able to progress into employment or further study. This informs Access and Participation Plans and the process of evaluating the impact of programmes designed to support the success of students from under-represented groups. HESA data and analysis on employment outcomes is harnessed to benchmark institutional performance against the regional and national picture. In a report by HEFCE in 2015, the early career employment outcomes of UK students who qualified from a full-time first degree course in the academic year 2008-9 are examined. It looked at the differential outcomes of students from different backgrounds and the extent to which they persist over time (using DLHE and LDLHE) (Higher Education Funding Council for England, 2015).
- 7.2. By specifically analysing the differential employment outcomes of equality groups, the data enables the sector to focus its efforts on those most in need of additional support to narrow the gaps. Although, there is a considerable time lag in the data that creates difficulties for policymakers and, significantly, HEFCE's report does not analyse the outcomes of part-time students.
- 7.3. The continual development of sophisticated analyses of the outcomes achieved by students from diverse backgrounds is instrumental for effective targeting and intervention design. But while there is a strong and robust evidence base for what works to foster *employability skills* in higher education (driven largely by Advance HE and AGCAS), there is little available evidence of what works for higher education interventions with regard to *employment outcomes*. This is primarily because of the difficulty of making a suggestive or causal link given the dynamic and complex factors determining individuals' career trajectories, including structural inequalities and regional labour market variation along with factors even harder to quantify, such as happenstance. A more detailed discussion of employability versus employment is given in Section 8.
- 7.4. Nonetheless, there is a limited amount of existing evidence which seeks to demonstrate the impact of specific activities or programmes on graduate outcomes in the labour market. It is important to note that, under the theme of 'employment outcomes', the majority of evidence relates to institutional activity rather than to specific interventions that were designed, delivered, and evaluated by student success teams. For example, in one study, students' voluntary participation in extra-curricular activities is treated as an 'intervention'. Significantly, in most cases, the institutional activity was not specifically designed to support employment outcomes, and was not targeted at specific student groups, but it was reviewed to observe its effects on employment outcomes.
- 7.5. In this section we provide a summary of the evidence which falls into three categories:
 - Work experience
 - Extra-curricular activity
 - Holistic approaches

Work experience

- 7.6. In their large scale study of differences in employment outcomes in 2015, HEFCE found that students taking sandwich placements had a significantly higher probability of progressing to further study or employment; and, of those in employment, a higher probability of gaining graduate level employment. This is born out in the Bridge Group's work on social mobility and careers services (Bridge Group, 2017). We

found strong evidence of the benefits of participation in sandwich placements for students' employability. Students gained soft skills and valuable networks through undertaking funded placements as part of their course. More recently, Kerrigan's submission to TASO for NTU, provides evidence of the enhanced employment outcomes for graduates of sandwich placements (Kerrigan, et al., 2018). The study combines a large-scale analysis of graduate employment outcomes with qualitative data from recent widening participation graduates, focusing on the impact of a full sandwich year within a range of courses using the DLHE survey. It encompasses the outcomes for NTU students as well as all UK university mission groups.

- 7.7. Kerrigan's key finding is that the effect of socio-economic background on progression to graduate level professional occupations is negated by widening participation students' participation in sandwich placements. For NTU students, the gap in professional employment rates between widening participation and non-widening participation students disappeared if they had undertaken a sandwich placement.
- 7.8. It was not within the scope of the study to compare outcomes between paid and unpaid placements or to examine the effects of self-selection. For, crucially, the study finds that "opportunities are taken up by students with existing social capital and the evidence suggests that mandatory schemes are more likely to level the playing field and ensure disadvantaged students receive some work experience" (Kerrigan & Manktelow, 2019). More research is needed to understand the barriers to participation on sandwich courses; and the optimal duration of a work experience placement to positively inform outcomes. Qualitative studies are also needed to examine the quality of the experience, particularly for diverse groups.

Extra-curricular activity

- 7.9. Nottingham Trent University (NTU) provides an analysis of a longitudinal study of the success rates of participants, and non-participants, of a variety of extra-curricular opportunities. The aim was to observe if there was a relationship between participation and differential outcomes.
- 7.10. Participants of all of the extra-curricular activities were more likely to have higher attainment across all years of study. The evidence of the impact of NTU's extra-curricular interventions on 'graduate prospects' was indicated by progression rates to further study or professional employment using DLHE survey data. Only NTU sport demonstrated a statistically significant higher rate of 'graduate prospects'. But although there was limited direct association, given that extra-curricular activities raise students' attainment, which has been proven to be a strong predictor of successful employment outcomes, 'they are also likely to improve their prospects of progressing to further study or professional employment upon graduation (Kerrigan & Manktelow, 2019).
- 7.11. NTU's impact evaluation is underpinned by a strong evidence base on the benefits of participation in extra-curricular studies for successful graduate outcomes and has helped to inform institutional policy, for instance, by discounting the cost of sport opportunities for low income students. However, the analysis is limited as there is no consideration of commuter or part-time students who are known to be less likely to engage in extra-curricular activities. As a consequence of charting links between very specific outcomes, attainment and 'graduate prospects', the study does not address *how* or *why* variations in participation exist. This is a key issue given that it recognises that participation in the activities is voluntary and there is no way of isolating the impact of a 'predisposition effect'. It is likely that individual motivation will have produced some self-selection bias. The strikingly low rate of participation in NTU sport by BAME students is also largely overlooked and does not feature in the recommendations derived from the findings.

Holistic approach

- 7.12. Kingston University provide an evaluation of their 'compact scheme' over the past three years (Butt & Woods, 2016). The scheme adopts a holistic approach and provides additional support to eligible students from pre-entry to graduation, including financial aid. Attention is given to the policy and institutional context which helps to explain the reasons for the creation of the intervention and its evolution. The study looks at 709 students eligible for the compact scheme between 2013 and 2016. It assessed whether the support available to compact students impacted on their academic success and progression to employment 6 months after graduation (using the DLHE survey).
- 7.13. The chi-squared test of association was used. Student degree outcomes were assessed over three years to evaluate the longer-term impact of the compact scheme on student success. It found that being part of the scheme was significantly associated with better degree outcomes. And, it impacted positively on rates of continuation. Chi square test association, using combined three-year DLHE data, confirmed that employment outcomes were not statistically different between compact students and the non-compact student population.
- 7.14. This research helps to explain why the University continues to expand the scheme and refine it to increase targeting of specific groups of students, such as mature students. But it is limited in its success due to lacking a control group or any historic data on the performance of eligible students prior to the existence of the scheme in comparison to other students/graduates. It would be interesting to learn the effect size. Discussion is also required into interventions that have changed over the past three years to better support all students and graduates at Kingston University. It is hard to isolate the support associated with the compact scheme from that of university-wide initiatives to improve student success.

Evaluation barriers

- 7.15. Measuring employment outcomes is a highly contested terrain in the context of social equality. This has implications for the validity and value of institutional efforts to assess progress in supporting employment outcomes. LEO and DLHE have received considerable criticism. Much of the concern over the LEO dataset, for example, centres on the lack of contextualisation and the unfairness of making unadjusted pay comparisons between institutions in different parts of the country with diverse labour markets.
- 7.16. In the following section we provide a discussion of employment versus employability to demonstrate the complexity of this issue and highlight barriers faced in evaluating interventions on this topic.

8. Employment versus employability

Defining employability and employment

- 8.1. In the UK, employment outcomes have largely been indicated by results of the DLHE survey, conducted six months after graduation. While this has been a hotly contested metric (focusing on relatively short-term success), it has provided a way of objectively measuring outcomes and making comparisons between groups of graduates, disciplines, and higher education providers. For higher education providers to

contribute to the success of graduates in the labour market, many have invested significantly in embedding employability into the curricula and student experience.

- 8.2. However, employability implies the capacity of the graduate to function successfully in a job and should not be confused with the simple acquisition of a job. The provision of employability experiences, such as work experience, does not necessarily mean that a student gains 'successful' employment. Individual and structural factors play a part in the process of securing a job.
- 8.3. Prior attainment remains a key determinant of graduate success (Crawford, et al., 2017); 'employers' recruitment practices can contribute to the reproduction of inequalities in graduate outcomes (Ingram & Allen, 2018); and regional economies vary hugely along with the availability of jobs (Thomas, et al., 2017). It can therefore be problematic for higher education providers to demonstrate a causal link (or even a correlation) between employability activity and employment outcomes.
- 8.4. Employability – conceived as a set of achievements, skills, and personal attributes that make graduates more likely to gain employment – is intended to enable graduates to succeed in their careers over the long-term (Thomas, et al., 2017). Strategies aimed at improving employability are intended to support students to gain employment, but are also concerned with sustaining a successful career and being flexible to adapt and move to new situations as circumstances dictate.
- 8.5. Employability is complex to measure, since it involves examining employment choices and activity over a sustained period of time, unlike currently used employment metrics. According to Christie, 'DLHE can only be very loosely considered a measure of the employability of a university's graduates' as it is more of an indicator of available jobs and the capacity of individuals to equip themselves with the social capital to secure a job (Christie, 2016). And, definitions of employability shift depending on perspective: for example, with employers elevating different attributes to those valued by students (Lowden, et al., 2014), and with varied focus on either supply- or demand-side factors (McQuaid & Lindsay, 2005).
- 8.6. Robust and influential research has been conducted as part of the Office for Students' Learning Gain pilot projects to measure students' employability in higher education. This involved examining mainly behavioural measures through registration data (Howson, 2019). Data from career readiness can be linked with emerging data from Graduate Outcomes for institutional planning and performance with regard to employability. This research places emphasis on the value of the data for institutional purposes rather than for use in league tables and for making comparisons between institutions.
- 8.7. There is an extensive literature examining differentiation in employability by social background. For example, research conducted by the Bridge Group, on social mobility and the role of careers services highlighted a number of factors contributing to unequal graduate outcomes with respect to socio-economic background, such as information asymmetries and more limited social networks (Bridge Group, 2017). Students from lower socio-economic backgrounds typically attach less value to the development of employability skills while in higher education than their peers from higher socio-economic groups. For instance, they are less likely to participate in activities that are valued by employers, like membership of university societies and accessing alumni advice and networks.
- 8.8. Bridge Group interview data uncovered the challenges faced by careers services in engaging students from lower socio-economic backgrounds. This research was underpinned by a strong evidence base in the existing literature, such as the longitudinal study, the Paired Peers project, which examined the process of capital acquisition and mobilisation by students to enhance social positioning. Bathmaker, et

- al. (2013) describe the shift to the strategic enhancing of graduate employment opportunities as 'having a feel for the game'.
- 8.9. Students from lower socio-economic backgrounds are typically less aware of the rules of the 'game' and therefore were not positioning themselves effectively to compete for jobs. Notably, studies of students from different social backgrounds uncover variation, not only in their engagement in extra-curricular activities and work experiences, but in their capacity and motivation to utilise their additional experience into valuable capitals in the labour market (Tomlinson, 2008).
- 8.10. The literature on the subject of employability reveals a complex terrain – mediated by individual, socio-cultural, and economic effects – which has implications for both the practice of measuring employment outcomes and for the status they hold.

Relationship between education and work

- 8.11. Human capital theory exerts a strong influence over policy relating to higher education and the labour market (Marginson, 2017). It suggests a direct and linear path between higher education and employment and earnings. Students are regarded as rational actors who make ‘economically informed decisions (...) and aim for the best employment outcomes, whilst universities are increasingly required to demonstrate their capacity to impact on rates of graduate employment and earnings’ (Hordósy & Clark, 2018).
- 8.12. Higher education is widely understood as valuable preparation for work and a key vehicle for improving life chances. But, increasingly, this social mobility narrative is being challenged for its neglect of structural barriers, such as social class (Marginson, 2017) and consideration of the “temporally-contingent nature of career choices’ and the effect of ‘happenstance” (Hordósy & Clark, 2018; Christie, 2016). The literature surveyed here highlights the prominence of issues relating to positional competition and status and the effects of social background on access, success, and outcome.
- 8.13. Hordósy and Clark (2018) make an important contribution to a growing body of literature that takes a ‘whole lifecycle approach’ to examine how undergraduates experience career planning over time, as they move into, through, and out of higher education. Their study draws on qualitative data taken from a four-year longitudinal case study that followed a sample of 40 students in an English red-brick university between 2013 and 2017.
- 8.14. One of the key findings is the way in which career planning amongst students from lower socio-economic backgrounds can become disrupted, particularly after graduation. Far from suggesting a linear progression from higher education to work, the picture that emerges is of graduates feeling constrained by financial factors to get a job as quickly as possible, ‘more often than not, this meant a non-graduate role’. Additionally, these constraints and the sense of urgency meant that the potential location of jobs was more limited; moving to cities with strong graduate job markets is not always an option.
- 8.15. While the study has limitations because of its focus on a very particular type of higher education provider, its findings chime with those of other studies (Pemberton & Humphris, 2018; Purcell, et al., 2012). It provides further evidence that:

“The relationship between education and work is not linear in nature, nor is it underwritten by a rational, economic imperative. Instead, it demonstrates how, within a neoliberal imaginary, lower income students can become disadvantaged by the continuing relationship between human capital theory and higher education policy. More specifically, the paper further reveals how post-graduation employment outcomes are likely to vary by familial income, and why such groups are particularly vulnerable to underemployment after graduation.” (Hordósy & Clark, 2018)

- 8.16. There is a substantial literature on the factors affecting earnings: differential status of higher education providers and the professions; family background; prior attainment and school (Crawford, et al., 2017). Given these dynamic factors it is therefore highly complex to measure or compare the success of interventions on the basis of the rates of graduate employment (Marginson, 2017).
- 8.17. In 2020, the DLHE was replaced by the Graduate Outcomes Survey that offers a longer-term view (surveying graduates fifteen months after graduation) and the

possibility of capturing the perspectives of graduates. Its stated aim is to assess whether the student experience delivered what was 'promised' to students from a learning and potential employment perspective (HESA, n.d.). It is a more nuanced measurement: employment is not the only successful outcome and space is given to gather data on graduates' experience of fulfilment.

This change in approach is important in light of a survey of recent graduates, conducted by ComRes for Universities UK, which suggests that students are not making purely economic decisions when they choose to participate in higher education (ComRes and Universities UK, 2019). For example, 84 percent of students and graduates agreed that their future salary was not the only factor they considered when deciding to go to university; instead, they regard higher education as offering a broad array of benefits.

- 8.18. These findings add weight to the research that challenges the emphasis given to a linear relationship between higher education and the job market. Human capital theory obscures the importance of wider economic and social trends which impact on graduate prospects, whilst also thwarting the emergence of a more nuanced discussion of career pathways (Christie, 2016; Ingram & Allen, 2018; Marginson, 2017).
- 8.19. Once graduates leave higher education, it is difficult to measure their progress in navigating the labour market in a nuanced way. Longitudinal studies, such as those by Waller and Purcell, are valuable in supplementing DLHE data with interviews to expose the precarious trajectories of new graduates, particularly from BAME and lower socio-economic backgrounds, and the 'temporally contingent' nature of career choices (Hordosy, et al., 2018).
- 8.20. It is difficult to isolate the effects of higher education activity supporting employment outcomes from the array of factors informing outcomes: prior attainment, structural inequality, individual propensities, social capital, labour market and happenstance. Longitudinal studies combining quantitative and qualitative analysis are better able to expose the complexity of the relationship between education and work.

9. Recommendations

- 9.1. The following recommendations are derived from close analysis of TASO submissions and wider literature relating to the themes of attainment, wellbeing, retention and employment outcomes. They are focused on the steps required to support the work of higher education in addressing differential student and graduate outcomes. They are designed to:
 - improve the quality of research relating to the evaluation of higher education activity;
 - improve understanding of effective practice;
 - grow the evidence base.

Research context

- 9.2. Student success and careers teams should make effective use of research expertise within the institution, particularly residing in Education and Social Science Faculties, in order to design robust methodologies. The evidence suggests that the evaluation component of programmes may be accorded a low priority and is insufficiently funded. Resource needs to be applied effectively to develop expertise, promote

innovation, and ensure sustainable approaches are taken to map the web of concurrent activity underway in institutions to support equal outcomes.

- 9.3. Researchers need to give greater attention to the contextual conditions in which the data were generated, for example: institutional culture; institutional hierarchy; and region and locality. In part, this is to recognise shifts in the policy and economic contexts informing intervention design, but also to highlight the extent to which it is specific to an institution or might be considered to be transferrable. Additionally, it is important to observe the variety of factors contributing to student and graduate outcomes that extend beyond campus.
- 9.4. Too often in the studies analysed, students are treated in homogenous terms for ease of gathering impact evidence. This is reductive and greater attention should be given to disaggregating data to understand patterns of student participation in interventions by equality and diversity groups but also by subject studied, residence and mode of study. This is vital to better understand the complex and nuanced relationship between higher education activity, individual choices, and socio-cultural factors. Strategies that may be effective for some groups and individuals may not be so for others. At present, this complex picture is not being evidenced with any degree of rigour.
- 9.5. Related to the above recommendation, increased focus should be given to intersectionality and to the way that 'disadvantage' may accumulate in and beyond higher education. This has implications both for programme design and evaluation.

Comparative and multi-layered analysis

- 9.6. Our literature review reinforces the existing literature (Mountford-Zimdars, et al., 2015) and shows that further research is needed to enable the sector to support all higher education students to reach their academic potential. This would ideally focus on institutional support to encourage both academic and social integration. This review does include some evaluations which demonstrate the efficacy of certain interventions, but there is scope to encourage more work of this sort. Further, it should be acknowledged that to be effective with all students, multiple interventions may need to take place concurrently. And this can be at odds with the climate required to isolate the effect of discrete activities) (Bettinger & Baker, 2014).
- 9.7. Evaluation should place greater emphasis on comparative analysis of the effectiveness of different approaches to inform planning.

Conceptualising impact

- 9.8. Institutions should weaken the focus on a narrow range of graduate outcome indicators, such as employment outcomes, and develop indicators to recognise a broader understanding of impact. This is in order to work towards achieving a more sustainable and inclusive approach that considers institutional cultures and workforce composition as vital elements in activity to improve student outcomes.
- 9.9. Researchers should evaluate the impact of employability activity in relation to a wide range of outcome indicators and adopt diverse methodological approaches. Evaluators should also explore how to measure and monitor employability, drawing on findings of the Learning Gain project, instead of measuring impact using employment data alone.
- 9.10. Studies need to incorporate the student's perspective of success, which may not be conceptualised as attainment (e.g. of a 'good' 2:1) or employment income, and research should reflect on whether institutional efforts are meeting student goals.

- 9.11. While data-based interventions and skills profile interventions are well documented, and there is some evidence of a link to positive outcomes (Dagley, et al., 2016; Bowman & Culver, 2018; McElveen & Ibele, 2019), further work is required in the area of mentoring, guidance and counselling interventions, where causality appears more difficult to evidence (University of Chester, n.d.). The research provided through the call for evidence could largely be interpreted as being evaluated retrospectively and in an anecdotal fashion (Newcastle University, n.d.; Richardson & Tate, 2012). A further limitation of the evidence is that the majority of submissions involved single-institution case studies with limited peer review (Brown, 2017; Moores, et al., 2017; Wyness, 2017; McNeil, 2019).
- 9.12. Several submissions feature a qualitative research methodology to indicate success, but without a matching quantitative metric beyond headline retention and attainment data (such as HESA). As noted earlier, success in the eyes of a student might not be being measured by these metrics. We perhaps need further metrics to define success, as perceived by the student (Richardson & Tate, 2012; Kahu & Nelson, 2017; Picton, et al., 2018).
- 9.13. Recent student surveys, such as that conducted for Universities UK show that students do not make purely economic decisions when they choose to participate in higher education. Indicators of success, particularly around wellbeing and employment, should recognise students' perspectives.
- 9.14. Broadly, future intervention evaluation should focus on developing what we know qualitatively into a frame of reference that has a quantitative outcome, in order to evaluate a relative impact both to the individual student and the institution.

Longitudinal studies

- 9.15. Higher education providers should increase support for long-term studies to understand variations in career trajectories and the intersection of factors, including the contribution made by the practices of employers.
- 9.16. Longitudinal studies permit greater scope for combining quantitative and qualitative approaches and looking at the effects of self-selection on outcomes.

Annex A: Search terms

Area of Focus	Possible Search Term
Institution	Higher education; Tertiary; Universit*
Affected population	Postgrad*; Undergrad*; Student*; Lecturer*
Retention Terms	Retention; Attrition; Success; Attendance; Persist*; Completion; Re-enrolment
Attainment Terms	Attain*; Achiev*; Success; Acquir*; Accomplish*; Outcomes; Classification; Degree
Wellbeing Terms	Mental Health; Anxiet*; Depress*; Emotion*; Wellbeing; Self-esteem; Lonel*; Illness*; Belonging
Employment Terms	Employability; Graduate outcomes; Income inequality; Human capital theory
Intervention Terms	Evaluation; Intervention; Early warning/Alert; Targeting; Academic support; Promot*; Support; Improv*; Prevent*
Attitudes/Other	Learning analytics; Inequality; Perception; Inequality, Data mining; Decision; Information systems; Data visualisation; Dashboard
Delivery	Distance learning; Remote; Technolog*; On-line; Policy; Integrat*; Standalone; E-learning; Engagement; 'Whole institution'
Evidence	Evidence; Evaluation; Intervention; Effect analysis; Review.

Annex B: Typology for categorising impact evidence

Category	Option
Provenance	Peer-reviewed article
	Non peer-reviewed article
	Book / book chapter
	Report
	Brief
	Other
Methodology	Primarily qualitative
	Primarily quantitative
	Mixed-methods
	Other
Pre/post entry	Pre-entry
	Post-entry
Student life-cycle stage	Undergraduate
	Post graduate
	Academic staff
	No specific stage
Outcomes	HE student retention
	HE student attainment
	HE student skills development (including cognitive)
	HE student social/cultural capital
	HE student wellbeing/belonging
	Progression to further study
	Progression to employment
Target population	All learners (no targeting)
	Commuter students
	Part-time students
	Mature students
	Socio-economic / demographic disadvantaged learners
	Female learners
	Male learners
	Black, Asian and minority ethnic learners
	White learners
	Disabled learners
	Vocational learners
	First generation learners
	Overseas learners
	Carers
	Care leavers
	Intersectional group
Other	
Sign of Impact	Positive
	Negative
	Mixed
	None
Strength of evidence	Weak evidence
	Developing evidence
	Best evidence
UK focus?	Yes
	No
	Only in part

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