TASO

Transforming Access
and Student Outcomes
in Higher Education

Summary report:

Evaluating multi-intervention outreach and mentoring programmes

May 2023

CONTENTS

EXECUTIVE SUMMARY

Multi-intervention outreach and mentoring is a resource-intensive widening participation (WP) activity. It requires a significant investment of time and effort from higher education (HE) providers and students alike. Programmes usually offer a combination of activities, including mentoring, coaching, information, advice and guidance; campus visits; subject tasters and summer schools, and these activities often engage hundreds of students over a year or more. An evidence synthesis commissioned by TASO (Robinson & Salvestrini, 2020) identifies multi-intervention outreach as one of the most commonly used approaches among HE providers and shows that multi-intervention outreach programmes are associated with positive aspirations and attitudes towards HE. More recent evidence demonstrates a positive association with enrolment in HE (The Access Project, 2021; Burgess et al., 2021).

However, the existing literature provides correlational and contextual evidence on the efficacy of this approach, rather than demonstrating a causal link between intervention and outcomes for students. That is, there are other important differences between students who do and do not participate; thus, assessing the true impact of the programme rather than the pre-existing differences between these groups is difficult. There is a need to establish clear causal evidence around this issue.

A further challenge is understanding the most effective design for multi-intervention outreach. There is wide variation in how such programmes are conducted, which components are incorporated, and what the outcomes are. Developing a better understanding of these issues is key to developing a stronger body of evidence that pools learning from across different programmes and HE providers.

To address these issues, TASO commissioned and oversaw a series of evaluations, partnering with three HE providers (HEPs) to explore the different ways in which multi-intervention outreach and mentoring programmes could be evaluated. The partners were:

- The University of Birmingham's Forward Thinking programme

- King's College London's K+ widening participation programme

- Aston University's:
  - Pathway to Healthcare programme
  - Pathway to STEM programme

In addition, a collaborative evaluation of online mentoring as part of multi-intervention outreach was conducted.

This report begins with a short review of the evidence available on the impact of multi-intervention, outreach and mentoring programmes on student outcomes. It then briefly describes the structure of multi-intervention and outreach programmes and presents the interim findings from the evaluation of three programmes in the following section. The local evaluations of the programmes revealed mixed results. One study showed that participation in a multi-intervention outreach and mentoring programme increased students' likelihood of progressing to a research-intensive HEP, compared to a matched comparison group who were assumed not to have participated in the programme. However, due to data access limitations, this study did not control for prior attainment and presents exploratory, rather than causal, analysis. The three pilot randomised controlled trials (RCTs) showed that the relevant multi-intervention outreach and mentoring programmes did not have an effect on student enrolment in HE. However, these interim results are based on proxy measures and should be treated with caution until final outcome data is available. The findings from the evaluation to investigate whether the use of personalised communication could be an effective strategy for increasing parental/guardian engagement with the Forward Thinking programme showed evidence of promise. A parent/guardian who received a personalised invitation was 2.1 times more likely to attend the event than one who received a standard invitation. The report then moves on to discuss findings from the Implementation and Process Evaluations.

Although these local studies provide a valuable contribution to the emerging evidence base and will help the sector to design rigorous evaluations, the broader aim of this project was to develop a tool which would enable a more consistent and robust evaluation of this type of programme. The Mapping Outcomes and Activities Tool was developed in collaboration with the project partners. Its aim is to support the sector in conducting a robust evaluation of multi-intervention programmes, and to improve our understanding of how specific elements of multi-intervention outreach and mentoring programmes lead to particular outcomes. This tool will act as a foundation for TASO's evaluation of WP activity in our next phase of work.

We finish the report with conclusions and several recommendations for the sector.

Recommendations

Elements and outcomes of multi-intervention outreach

- HEPs and widening participation teams should adopt TASO's Mapping Outcomes and Activities Tool (MOAT) as part of their evaluation planning and implementation. This will not only aid consistent and more rigorous evaluation practice at the provider level, but will create a bank of evidence to improve understanding of how specific elements of multi-intervention outreach and mentoring programmes lead to particular outcomes.

- Multi-intervention outreach incorporates multiple elements. To rigorously evaluate the impact of these programmes, HEPs should identify the value of each element by using TASO's Enhanced Theory of Change tool to map how it is anticipated that individual activities will influence outcomes. The tool is designed to explore more complex, non-linear pathways to impact, where loops or interactions between multiple activities, change mechanisms and outcomes are observed.

- Although based only on interim data, the local evaluations provide some evidence that these multi-intervention outreach programmes may be reaching students who are already highly likely to enter HE and highly selective universities. They further suggest that the true value of the programmes may lie in informing student choice about where and what to study, rather than whether to attend. Better pre-entry preparation may also result in higher rates of continuation and success once on the course. HEPs should scrutinise the rationale and assumptions behind their programmes to ensure that evaluation outcomes are well-matched to the activities they run.

Data collection

- For multi-year programmes, low response rates are a key risk, as engagement with students can drop off over time. To mitigate the impact of low response rates and small sample sizes, HEPs should use behavioural, as well as survey, outcomes where possible, such as tracking students in the Higher Education Statistics Agency (HESA) dataset using the Higher Education Access Tracker (HEAT).

- Proxy measures are a valuable method of measuring intermediate student outcomes when there is a delay in accessing longer-term primary outcome data. Proxy measures are indirect indicators, often self-reported, that relate to the primary outcome of interest. For example, students' self-reported first-choice university in their UCAS application can be used as a proxy measure for progression to HE. Proxy measures should be used alongside tools to measure longer-term behavioural outcomes.

- HEPs should also build survey questions into existing touchpoints throughout the programme, such as the application process and event/activity sign-up forms. This reduces the number of requests and communications flowing from programme staff to students and encourages them to respond. Survey data can also be used to assess the impact on intermediate outcomes, such as academic self-efficacy, which can help us understand the ways in which the programmes are effective.

- To improve response rates, HEPs should offer appropriate compensation to thank students for their time, such as entry into a prize draw or a small value voucher. Appropriate ethical approval must be obtained for this – see Section G of TASO's Research Ethics Guidance.

Implementation and Process Evaluation (IPE)

- The Implementation and Process Evaluation (IPE) has been crucial in helping to explain the results of the local evaluations, and in providing data on how and why the programmes did or did not achieve their intended outcomes. When HEPs conduct evaluations of their interventions, impact evaluation and IPE should be integrated, rather than seen as distinct activities.

Creating a control group

- HEPs should use local evaluations as a blueprint to explore randomised controlled trials and quasi-experimental designs as part of their evaluation approach for multi-intervention outreach.

1. INTRODUCTION

1.1. Background and existing evidence

Multi-intervention outreach programmes combine two or more activities into an ongoing programme of support for students at different stages of their education, with a focus on widening participation (WP) to HE. Typical activities include university campus visits, subject tasters, information, advice and guidance (IAG), summer schools and mentoring. Multi-intervention outreach is resource-intensive and requires a significant investment of time and effort from HE providers and students alike. It is therefore imperative that we understand whether, and how, these programmes work.

In their review of the evidence on WP interventions, Robinson and Salvestrini (2020) identify a range of studies that demonstrate an association between participating in multi-intervention outreach programmes and positive attitudes towards HE. For instance, Simms (2015) evaluated the effect of the University of Sheffield's 'Heads Up' programme, which includes several events each year, such as a summer school, regular visits from HE student ambassadors, careers interviews and social/cultural activities. Using pre- and post-intervention surveys, Simms (2015) found that students exhibited a higher self-reported understanding of university and greater confidence in their ability to 'fit in' after taking part in the programme.

The national multi-intervention outreach programmes 'IntoUniversity' and 'Aimhigher' yield further evidence. Using a combination of case studies, observations, interviews and surveys, White, Eames and Sharp (2007) found evidence of increased motivation, self-esteem and confidence in students who participated in IntoUniversity. Morris and Rutt (2005) evaluated the Aimhigher Excellence Challenge, a specific programme which included campus visits or visits by university delegates to schools and colleges, summer schools at various universities and opportunity bursaries – small amounts of money to help cover university expenses. The authors found t hat participation in these activities was associated with a greater likelihood of expressing the intention to go to university.

Whilst the majority of this evidence looks at the impact on WP student groups as a whole, some research indicates a positive impact of multi-intervention outreach programmes on particular student groups. Laing and Mazzoli Smith (2015) evaluated the 'Choices Together' programme, specifically aimed at supporting looked-after young people.[1] Participants reported that they left the programme with more knowledge and confidence, and a feeling that university could be a positive experience. Research by Clague et al. (2019) shows that providing white working-class boys with visits to universities, sessions with role models and graduate interns, and one-to-one career advice can have a demonstrable impact on their confidence to apply to university and their sense of belonging in the HE environment.

More recent evidence derives from an evaluation of Uni Connect, a national outreach programme funded by the Office for Students (OfS). Harding and Bowes (2022) review the evidence submitted by Uni Connect partnerships, and summarise that participation in a sustained programme of activities is associated with learners being better informed about HE, with improved knowledge of the subjects offered, course types, entry qualifications, student life and potential careers. With regard to the intention or likelihood of applying, the previous review of Uni Connect evidence (OfS, 2021) showed a positive relationship. However, the evidence in the latest review (Harding & Bowes, 2022) is mixed: one strong empirical study indicates that the intention to apply to HE increases as learners progress through their school career, while another source reports that the desire to continue to HE decreases with age.

Going beyond attitudes and intentions, several studies show an association between participation in multi-intervention outreach programmes and increased acceptance to and enrolment in HE. Much of this research comes from the United States (US); for example, Le et al. (2016) found the 'College Bound' programme to be positively correlated with college enrolment. Similarly, Millet and Kevelson (2018) evaluated the Princeton University Preparation Program (PUPP), an intensive three-year outreach programme. By comparing PUPP pupils with similar students – in terms of gender and ethnicity – who

---

[1]   Also referred to as 'children in care'. A child who has been in the care of their local authority for more than 24 hours: https://learning.nspcc.org.uk/children-and-families-at-risk/looked-after-children

were not accepted, the authors showed that the programme is successful in increasing enrolment and helping students to attend more selective colleges. This evidence cannot go beyond demonstrating a positive association between the programme and HE enrolment, as the authors were not able to examine the records of the students in the comparison group to determine whether they had similar academic references, motivation, standardised test scores and pre-college grades.

UK evidence stems from evaluations of Uni Connect in addition to other national outreach programmes, Realising Opportunities (RO) and The Access Project. RO targets Year 12 and 13 students and offers a programme of support including academic tutoring, university skills development, university events and activities and online support. Williams and Mellors-Bourne (2019) tracked an RO cohort and compared their outcomes with a matched comparator group obtained using data provided by the Universities and Colleges Admissions Service (UCAS). Analysis revealed that RO students were significantly more likely to enter HE, and attend a research-intensive university than the comparator group. Here the comparator group comprises students who have participated in any form of outreach activity, while also being matched to the RO group based on socio-economic background and prior attainment. These findings may indicate a greater benefit from participating in a structured outreach programme, such as RO in the two years prior to HE enrolment, over more sporadic outreach activity.

The Access Project works with a range of age groups delivering tutoring, peer mentoring and information sessions to support a transition to HE. Their latest impact report (The Access Project, 2021) shows that students participating in the programme are more than twice as likely to attend a 'top university'[2] than a matched comparator group, again identified by UCAS. Whilst the comparator group is described as 'statistically similar' to the Access Project students, it is not clear what this similarity relates to (e.g. prior attainment, school background and/or demographic characteristics).

Burgess et al. (2021) conducted a quasi-experimental evaluation of Uni Connect involving a large sample of students accessed via the Aimhigher West Midlands database. Students who engaged with the Uni Connect programme were compared with a natural control group of students who were offered but did not engage with the programme, whilst controlling for certain variables. The analysis showed that students who engaged with the programme (even at a minimal level) were more likely to achieve a place at an HE institution than those who did not engage at all (58% versus 39%).

Although the above studies used a quasi-experimental design with comparator groups that were often matched in terms of factors such as prior attainment, they cannot make causal claims because the students' degree of engagement with the outreach programme was not random but determined by their own or their schools' choices. For instance, in the Burgess et al. study cited above, engagement was through self-selection (therefore those less interested in HE likely did not engage) or selection by school (schools may put certain students forward and some schools may have limited access to the programme). Care is, therefore, needed not to overestimate the impact of these programmes as they may simply highlight differences in student characteristics, such as motivation to attend HE, rather than demonstrating the impact of the outreach programme.

Those studies better able to demonstrate a causal link show mixed evidence on the impact of multi-intervention outreach programmes. Emmerson et al. (2006) evaluated the Aimhigher Excellence Challenge programme by comparing individuals in Local Education Authorities (LEAs) where the programme was introduced, to individuals in LEAs where the programme was not implemented. The study utilised a difference-in-differences methodology to allow the comparison of educational outcomes in Aimhigher and other LEAs before and after implementation of the programme. LEAs were matched through propensity scores which predict the probability that an LEA will implement the Aimhigher programme, based on a set of characteristics before the introduction of the programme. The analysis showed that the outreach programme did not have a statistically significant impact on HE participation rates. However, when examining results among students across socio-economic status (SES), the study found that students from lower SES backgrounds who were from an Aimhigher LEA were more likely to enter HE than their peers from higher SES backgrounds. It is important to note the limitations of LEAs as a unit of treatment; this produced great variation within the data and limited the analysis of averages between groups.

The remaining causal evidence derives from the US. Bergin et al. (2007) carried out a small randomised controlled trial (RCT) on the 'Excel Programme' which offers students a scholarship, alongside seminars, tutoring and mentoring. Whilst participating students were more likely to enrol at the sponsoring university than students in the control group, there was no difference in terms of overall HE enrolment.

Page et al. (2017) evaluated the 'Dell Scholars Programme', which targets motivated low-income students in their final year of high school and provides them with financial aid and ongoing transition support. The study employs a regression discontinuity design by making use of the cut-off in the selection process for applicants, and estimating the impact of programme selection on HE enrolment. The authors also carried out a difference-in-differences analysis to compare programme attendees with a matched comparison group. Both analyses revealed that the programme had little to no effect on HE enrolment but it did have an impact on degree success and completion.

Finally, Bowman et al. (2018) again used a difference-in-differences design to evaluate 'GEAR UP', an intervention offering a mix of scholarships, tutoring, test preparation, career and college advice, campus visits and financial aid counselling. The findings indicated that GEAR UP has a small but positive effect on HE enrolment.

A key issue with the existing evaluations of multi-intervention outreach programmes is that they assess the effects of the overall programme, rather than attempting to unpick the impact of specific activities or combinations of activities within the programme. Multi-intervention programmes, as demonstrated by the range of studies above, differ significantly in the number and types of activities they offer. Thus, while evidence of a positive impact in one study is helpful, we should not assume that the results transfer to different contexts.

It is, therefore, important that evaluations can further our understanding of which elements of multi-intervention programmes are the most effective, and this evidence is still very much emerging. Evaluations of standalone initiatives that may be incorporated in a multi-intervention outreach programme can provide some insight,[3] but the context of these interventions differs when they are part of a larger programme, so we must be cautious when using this evidence.

One study that seeks to compare multi-intervention approaches to individual interventions is reported in Herbaut and Greven's (2019) review of the quasi-experimental literature on outreach and financial aid. Ford et al. (2014) conducted an evaluation in Canada on the impact of the 'Expand your Horizons' programme, which combines after-school outreach activities, focused on HE and careers, with financial aid. The authors found that the combined outreach and financial support had a greater impact on HE enrolment than either approach in isolation. This supports the notion of the multiplying effect that can be achieved through multi-intervention approaches, a key benefit over delivering a single intervention.

Burgess et al. (2021) looked to disentangle the impact of specific activities delivered as part of Uni Connect outreach programmes. The Uni Connect activities, whether alone or in combination with other activities, that were most strongly linked to receiving a place from an HE provider were summer schools, campus visits and IAG. Furthermore, not all combinations of activities were equally effective. A combination of summer schools, IAG, campus visits and subject masterclasses were the most predictive of receiving an HE place.

Regarding the number of activities in which students need to participate in order to reap the desired benefit, analysis by Burgess et al. (2021) showed that the more frequently learners engaged with Uni Connect, the greater their chances were of HE acceptance. However, the individual marginal benefit of additional engagements appears to decrease after five or six activities. The OfS (2021) report on Uni Connect partnerships suggests that multi-intervention programmes are particularly effective when students engage in seven to eight sessions for a minimum of three hours in total over the course of an academic year. It is clear that we need further evidence on the cumulative impact of the activities included in multi-intervention outreach programmes.

---

[3] See TASO's evidence toolkit for existing evidence on interventions such as summer schools, IAG and mentoring.

Although activities that constitute a multi-intervention programme cumulatively aim to increase HE enrolment, they may individually also address specific intermediate outcomes. The review of evidence submitted by Uni Connect partnerships (OfS, 2021) outlined that particular interventions appear to support the achievement of specific outcomes: workshops and masterclasses can develop study skills and confidence; mentoring and summer schools support the development of self-efficacy and interpersonal skills; and campus visits increase knowledge of student life and the benefits of HE. These short-term outcomes likely then contribute to the overall programme aim – increasing the participation of underrepresented groups in HE.

The existing research demonstrates that we lack causal evidence from the UK on the impact of multi-intervention outreach programmes, and we do not yet understand how many and which specific elements or combinations of elements are most effective. This TASO-funded multi-partner evaluation sought to contribute to the causal evidence, as well as to develop a tool to support the consistent evaluation of multi-intervention programmes in the sector, including through unpicking the effects of the individual activities involved.

1.2. Background to the TASO project

This TASO-funded multi-partner project combines a series of local evaluations with a parallel strand of collaborative working in order to map the commonalities and differences observed across different types of multi-intervention outreach and mentoring programme – as shown in Figure 1 below. The learning from the local evaluations and wider mapping of outreach programmes has been used to develop the Mapping Outcomes and Activities Tool (MOAT) presented below.

For the local evaluations, TASO partnered with three HEPs to explore the different ways in which these outreach programmes could be evaluated. The breakdown of local evaluations, and the methodologies used, is shown in Table 1 below.

Figure 1. The multi-intervention outreach and mentoring (MIOM) evaluation project
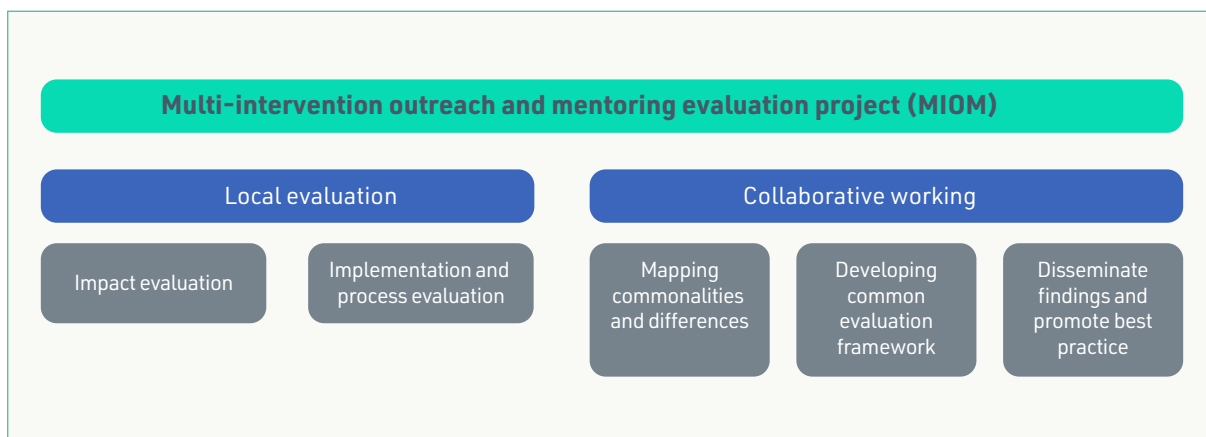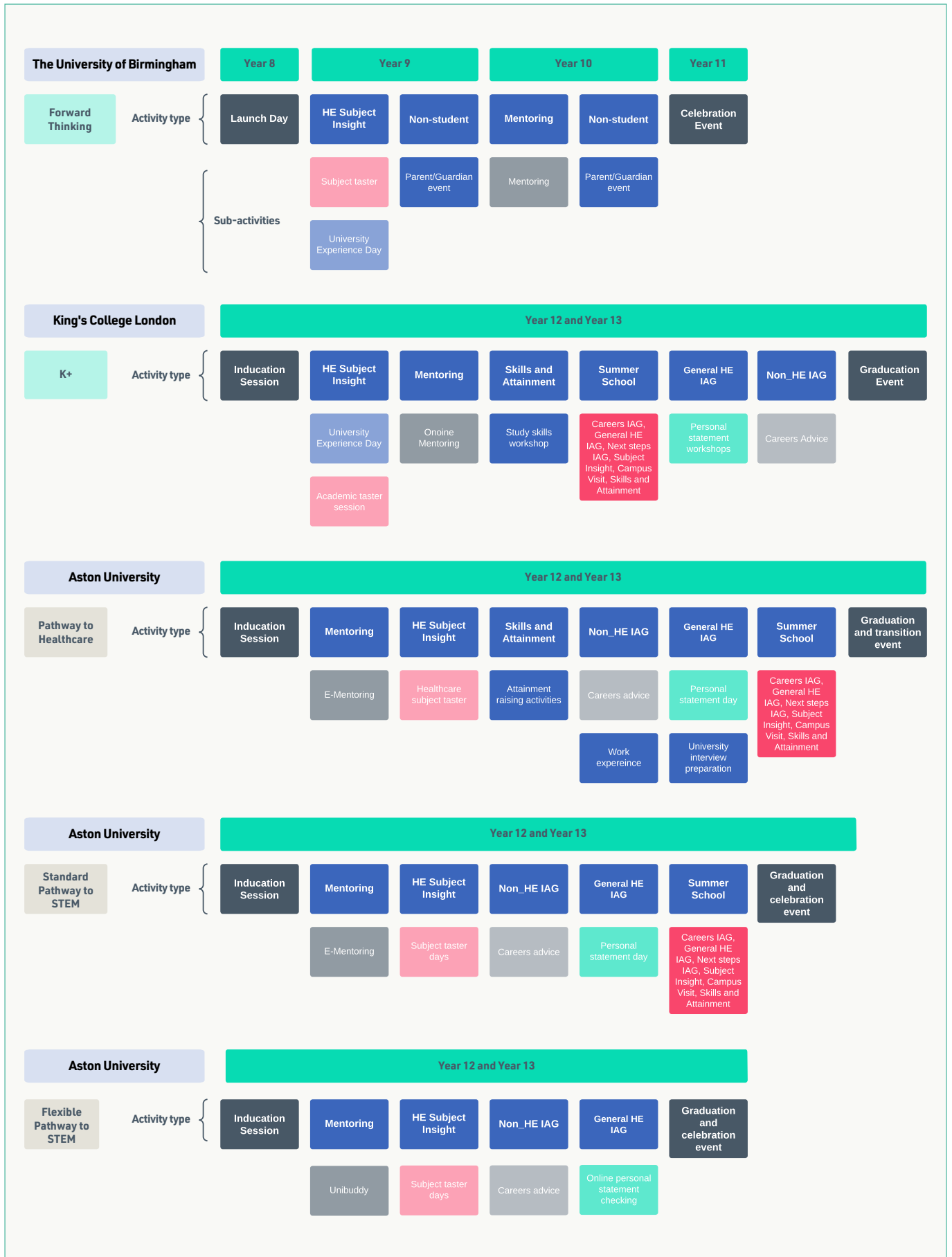

2. THE STRUCTURE OF MULTI-INTERVENTION OUTREACH AND MENTORING PROGRAMMES

Although the structure of each intervention differs between HEPs, a multi-intervention outreach and mentoring programme usually involves a combination of multiple outreach elements. Moreover, while each programme has specific aims pertinent to its local context, the shared goal of the programmes is to enable students from a WP background to successfully progress to HE. The diagram on the next page (Figure 2) maps the different elements of the programmes, showing that some elements – academic or subject tasters – are common across all programmes. Four of the programmes also include mentoring; however, the mentoring element of Forward Thinking is usually delivered face-to-face, while K+ and the Pathways to Healthcare and STEM (standard) are delivered online. The Forward Thinking programme includes parent/guardian events which the other programmes do not. The programmes for older students (Years 12 and 13) include a number of common elements including career advice and personal statement workshops. The diagram also illustrates the different sub-activities that HEPs deliver within the activity type. For example, the Forward Thinking and K+ programmes include University Experience Days as a way of developing HE subject insight. For other HEPs, the main aim of a University Experience Day may be to introduce students to the social aspects of HE life. Further layers of complexity are added when considering the specific content of activities, when and how they are delivered, the age range of the students and the length of the programme.

Figure 2. MIOM mapping

3. EVALUATING MULTI-INTERVENTION OUTREACH AND MENTORING PROGRAMMES

Multi-intervention outreach and mentoring programmes are complex interventions: they combine multiple elements that interact with one another to create change in specific contexts. Depending on the local context and the HEP delivering the interventions, these programmes can be delivered over a series of months or years, to a range of year groups. Evaluating these interventions can also be complex due to the number of interacting elements, the number and variability of outcomes, the size of the sample participating in the programme, and the degree of flexibility or tailoring in the programme delivery. All these different elements need to be considered when designing a robust evaluation methodology.

Table 1 below outlines the evaluation methodology that was employed to explore and further understand the impact of the programmes. It also includes a brief summary of the findings. The evaluation methodologies and project findings are detailed in the individual reports.

Table 1. Evaluation methodology

Name and aim of programme	Year groups	Key activities	Evaluation aim and methodology	Impact evaluation key findings
University of Birmingham Forward Thinking programme To encourage and support students from disadvantaged and underrepresented backgrounds to access HE and, specifically, to apply to 'research-intensive' HEPs	Years 8, 9,10 and 11. Selected student cohorts participate in activities over a four-year period.	• Year 8 Launch Day • Year 9 Subject Taster Day • Year 9 University Experience Day • Year 9 and 10 parent/guardian event • Year 10 Mentoring • Year 11 Celebration Event	• To investigate the Forward Thinking programme • To compare student outcomes for Forward Thinking participants with those of a matched group from the HESA dataset who are assumed not to have participated in the programme • Exploratory analysis to understand the Forward Thinking programme using a matched-group design • Pilot randomised controlled trial of a parent/guardian engagement initiative • Implementation and process evaluation	• The proportion of Forward Thinking students who were enrolled at a research-intensive and/or high tariff HE provider was significantly higher than that of non-forward thinking students in the matched comparison group. • Similarly, the proportion of Forward Thinking students who were enrolled on a STEM subject course was significantly higher than that of non-Forward Thinking students. • There was no effect on continuation from the first to the second year of study or on progression to postgraduate study. However, the proportion of Forward Thinking students who completed their first degree course up to and including five years was significantly higher than that of non-Forward Thinking students. • The pilot RCT found that receiving a personalised invitation had a statistically significant effect on attendance at the parent/guardian event. The parent/guardian was 2.1 times more likely to attend following a personalised invitation than a standard invitation.

Name and aim of programme	Year groups	Key activities	Evaluation aim and methodology	Impact evaluation key findings
King's College London K+ widening participation programme To encourage and support students from disadvantaged and underrepresented backgrounds to increase access to highly selective HEPs	Years 12 and 13	• Induction session • University experience day • Careers advice • Academic taster sessions • Online mentoring • Summer school • Personal statement workshops • Study skills workshops • Graduation event	• To investigate the impact of the K+ programme on progression to highly selective universities. [4] • Pilot randomised controlled trial of the K+ programme. • Implementation and process evaluation	• The results of the study suggest that the K+ programme had no effect on progression to highly selective universities. In other words, there was no statistically significant difference in the rate of progression (as measured by a self-reported proxy) between those enrolled on the K+ programme (treatment students) and those not enrolled (control group students). • The survey findings indicated that participation in K+ is positively associated with students' self-reported levels of academic self-efficacy. There was no effect on the sense of belonging or levels of social capital.
Aston University Pathway to Healthcare programme To empower students to make confident decisions about their progression to HE, and to assist students considering a career in healthcare or medicine	Years 12 and 13	• Induction session • Healthcare subject taster days • Attainment-raising activities • Careers advice sessions • University interview preparation • Work experience • UCAS personal statement day • Summer School • Graduation and transition event	• To investigate the impact of the Pathway to Healthcare programme on students' progression to healthcare and medicine-related courses in HE. • Pilot randomised controlled trial of the Pathway to Healthcare programme • Implementation and process evaluation	• The study found no evidence that the Pathway to Healthcare programme improves the likelihood of students attending HE in Autumn following the programme end. However, a large proportion of the students who did not hold a firm acceptance to begin their studies have indicated they will apply in the next academic year.

[4]   To operationalise the concept of 'highly selective', this study uses high tariff providers and aligns with the Higher Education Access Tracker's (HEAT) classification of high tariff.

Name and aim of programme	Year groups	Key activities	Evaluation aim and methodology	Impact evaluation key findings
Aston University Pathway to STEM programme To empower students to make confident decisions about their progression to higher education, and to assist students considering a career in STEM courses	Years 12 and 13	This programme has two pathways The standard pathway comprises: • Induction session • Structured e-mentoring • Subject taster days • Careers advice sessions • UCAS personal statement day • Summer school • Graduation and celebration event. The flexible pathway comprises: • Induction session • Student-demand-driven mentoring platform (unibuddy) • Subject taster days • Careers advice sessions • Online UCAS personal statement checking • Graduation and celebration event.	• To investigate the impact of the Pathway to STEM programme on students' progression to STEM-related courses at HE. • Pilot randomised controlled trial of the Pathway to STEM programme • Implementation and process evaluation	• There is no evidence that the standard Pathway to STEM programme was more effective than the flexible pathway in improving students' chances of applying to or firmly accepting an offer to study STEM subjects at university. • The survey data indicated that students were more confident that they could successfully apply to and fund university by the end of the programme. • At the beginning of the programme, students were highly likely to report that university was a place for them and that they would fit in. There was no significant improvement in their attitudes by the end of the programme. • The flexible programme may offer a less expensive, but equally effective, alternative to the in-person approach.
A collaborative evaluation of online mentoring as part of multi-intervention outreach			• To understand how engagement with online mentoring can be measured and evaluated. The mentoring report is here. • Exploratory analysis was conducted on the mentoring programmes delivered as part of Pathway to STEM and K+.	• Analysis showed a positive relationship between engagement with mentoring and overall attendance on the multi-intervention outreach programmes.

4. IMPLEMENTATION AND PROCESS EVALUATION (IPE)

The purpose of the implementation and process evaluation was to understand how the programmes were implemented, what the barriers and facilitators to implementation were, and whether and how the intended outcomes were achieved. The IPE also helped to ascertain whether the programmes worked as theorised and to identify the key factors that had an effect on these processes. Some elements of the IPE are common to all evaluations. We synthesise these points here to provide important context to the impact evaluation.

Methodology

The HEPs conducted interviews and focus groups with students and staff involved in developing and delivering the activities in order to gain a deeper understanding of how the programmes were implemented and their perceived benefits and impact.

The interviews and focus groups were recorded and transcribed verbatim. Data were analysed thematically using a hybrid deductive and inductive approach. Secondary data was also collected and analysed, including attendance records, event reports and annual reports.

Findings

The impact of COVID-19

All MIOM programmes included in this project were disrupted by the COVID-19 pandemic. Events are usually run in-person and on campus, but due to the restrictions in place, they were either delivered online or cancelled. None of the programmes was therefore implemented as originally planned, and all activities were amended in some way. Providers had to move quickly to plan how activities that were usually interactive and face-to-face could be delivered online. Events either had to be completely reworked or cancelled altogether. Moreover, few events took place on campus and overall contact time with students was reduced. Programme staff had varying levels of experience in online delivery. For example, staff involved in one of the Aston University programmes stated that providing outreach online was a new experience for them, while staff at KCL stated that moving an established programme such as K+ online caused difficulties for the implementers:

> *We had never planned to have an online K+. We had no Theory of Change for an online K+. At no point did we plan for that. The whole year was basically cobbling together events that we could have online because we were just having to react to what was going on with the pandemic.*

(K+ Implementer)

Staff also had to support students in navigating technology issues, such as access, shared devices and connectivity issues. Moreover, there was concern that students may not have access to the technology required to continue with the programme, given that they were selected from disadvantaged backgrounds. Access to laptops and technology to continue with activities such as mentoring from home was not always available, due to personal circumstances.

Attendance levels varied across the programmes but seemed much lower for one in particular (Forward Thinking) than in previous years, although it is worth noting that it was either not possible or difficult to record attendance levels at some online events. The activities most affected were those held in-person soon after lockdown restrictions were eased. Motivation levels were also affected for one programme where informal discussions with staff indicated that the move to online delivery seemed to result in a demotivated student population, although the exact reason for this is unclear. Some implementers reported concerns that the shift to online delivery may have affected students' ability to increase their sense of belonging:

Stuff that we think is such an important part of K+ normally, they totally missed out on. They had really limited access to student ambassadors, so they didn't hear much from current King's students, or far less than they would during a normal year. The normal hallmarks of the K+ experience, like being on campus, meeting ambassadors and meeting each other, thinking about London student life, meeting our academics. They didn't do any of that. So yeah, I think it would hugely impact that [belonging].

(K+ Implementer)

The Mentoring element of the Forward Thinking programme was a face-to-face offer and was severely disrupted by the pandemic. Some sessions never started; others started and were then stopped after a couple of weeks due to the lockdown; some moved online; other schools were unable to accommodate online mentoring. In some cases, where schools were not able to accommodate online learning, mentors were asked to send resources to the schools. Some schools were reluctant to allow students to attend one-to-one sessions due to the consequent loss of learning. In these cases, group mentoring sessions were offered, with mixed results. The main drawback of group mentoring was that the sessions were intended to be tailored to the students' needs, which is not always possible when multiple people have to be accommodated during a session. Where in-person mentoring was permitted, students sometimes missed sessions due to the need to self-isolate. In contrast to the Forward Thinking experience, K+ students spoke positively about the mentoring they received through K+ which was delivered online through Brightside:

They told us what the process will be like before it even started, which helped, at least me, to mentally prepare for the stress that will come with UCAS applications and filling out all the details.

(K+ Student, Treatment Group)

Perceptions of online delivery

As described above, a major change to programme delivery was the move to online activities. Feedback from students was that online delivery worked well for shorter workshops, particularly where sessions could take place after school and students had no need to travel to the campus. In addition, students identified the greater degree of flexibility to concentrate on their A-Levels and other outreach commitments as positive:

During your A-Levels, time is of the essence. You want to be spending most of your time revising and actually getting those high grades in the subjects you are studying.

(K+ Student, Treatment Group)

Longer activities or events that ran over several days were considered better delivered face-to-face. However, much of the interaction between students was missing, and student engagement was described as being 'more passive' (K+ programme). One implementer stated:

In my mind, one of the biggest differences was that an in-person compact scheme became more of a distance learning program. You could have been on the programme with anyone. At no point did the young people see each other or hear each other. They were all recipients of an intervention in a purely absorbing way. They didn't contribute anything beyond emojis in the chat.

(K+ Implementer)

Comments from students from earlier cohorts highlight that on-campus activities were regarded by students as key to learning more about HE and life at university, allowing them to experience both the academic and the social aspects of university life:

I really enjoyed just being able to learn more about the university campus itself and getting to experience that, you know, because walking there I could picture myself as a student and walking around it was just something that boosted my confidence, you know, knowing that this could be part of my future someday.

(Previous FT Student 4)

The campus days enabled students to strengthen their social connections, bond with other FT students and staff and share experiences. A few of the school coordinators also discussed how the campus visits promoted an improved relationship between them and the FT students because the student was taken out of the school environment and had more confidence to communicate with their teacher. It also allowed them to bond over their shared experience of attending the event. The loss of the face-to-face element of the programmes was keenly felt by both students and implementers. The social element was one that both students and implementers felt was affected by the shift to online delivery, particularly the ability to 'meet like-minded people' from similar backgrounds and 'have really cool discussions about the subject that I love' (K+ Student, Treatment Group).

Contact time with students was also very reduced:

All of the interventions we ran over that period were significantly shorter in length than they would normally be. We would never run a day of online events for students. The summer school was half a day at most each day. Partly because of the attention that was required on screen and that being challenging, but also devices having to be shared across the family. So the contact time that we had with those students would be far less than we would normally have.

(K+ Implementer)

The Forward Thinking programme includes events for parents and guardians to learn more about higher education. As parents and guardians were unable to attend events in person, resources were shared with them. Some parents also chose to be involved in online events offered to FT students. While the findings revealed that parents would have liked the opportunity

to visit the campus, their comments suggest that they still felt better placed to support their child to apply to go to university:

I didn't go to university and her Dad didn't go either, but I feel like I've got more knowledge now by sitting and watching the things that you've sent and things like that with her.

(Parent, Forward Thinking Programme)

The perception across the programmes is that the lack of interaction among and with the students will likely make the programmes less effective, particularly in the summer school element where staff, student ambassadors and students spend a great deal of time in each other's company over the course of three days.

A continuous programme

A key aspect of multi-intervention outreach is the opportunity for students to be part of a programme over an extended period, enabling them to acquire the information they need to be able to make informed decisions about their future. On the whole, the longer timeframe of these programmes is viewed positively, as activities can be tailored to the particular age of the students, enabling them to seek advice as their plans change. However, it was noted that there were sometimes large time gaps between activities and, in some cases, this resulted in students forgetting about certain elements of the programme, possibly losing motivation or seeing the programme as a series of standalone activities.

Some MIOM programmes involve students prior to their GCSEs. The aim is to introduce students to the idea of going to HE at an earlier age, particularly for students who are not able to draw on the HE experiences of family or friends. Comments from students indicate that they felt they had acquired the knowledge and information they needed to inform their journey to HE:

Prior to the whole programme I didn't really have a lot of information about how to get to university or higher education ... As I progressed through it, I definitely got more insight into higher education by going to the campus, by going to the University itself, by sitting in on lectures, by getting that information on financing and how it works, getting information on what to do to get to higher education, to get to university...

(Previous FT Student 7)

I was probably a little bit naive when I decided to do medicine. I didn't realise how competitive it was and how difficult the application process was going to be... school are great with supporting me, but I don't think they necessarily had the expertise of applying for medicine ... And I think that that's probably where the pathways team compensated and it was just a case of knowing actually this is what you've got to do across these two years.

(Pathway to Healthcare treatment student)

Some students on the Forward Thinking programme also felt that early exposure to university and the possibility of going to university allowed the idea to flourish and motivated some students to aim for high academic goals and to work harder at school so as not to waste the opportunity:

I think you just get to put it into perspective that I'm going to work hard and I'm going to be able to come to one of these types of universities. I think they're called research-intensive universities. So, it just motivates you to do well because you know you'll be there.

(Previous FT student 6)

Sense of belonging

The shift to online delivery may have affected students' ability to increase their sense of belonging.

Stuff that we think is such an important part of K+ normally, they totally missed out on. They had really limited access to student ambassadors, so they didn't hear much from current King's students, or far less than they would during a normal year. The normal hallmarks of the K+ experience, like being on campus, meeting ambassadors and meeting each other, thinking about London student life, and meeting our academics. They didn't do any of that. So yeah, I think it would hugely impact that [belonging].

(K+ Implementer)

Before enrolling on K+, one student spoke of feeling alienated by a university's public image in terms of its architecture and sense of place. However, participating in in-person events on King's College London's campus helped change this:

A lot of the time, when you see highly selective universities on their websites, how grand the buildings look and things like that, you don't ever think it's going to be a place for me. But then when I walked into the events, I just saw a bunch of people that were kind of like me, so I was like, "Okay, this is good. I'm supposed to be here." It was affirming. It was great.

(K+ Student, Treatment Group).[5]

One student explained that seeing other students on the K+ programme helped to increase their sense of belonging to the institution and to highly selective universities more generally:

My idea about highly selective universities changed from when I started, especially with K+, because I got to see the diversity of students from all sorts of backgrounds that were joining onto K+, who were definitely going to be applying to the same highly selective universities as me.

(K+ Student, Treatment Group)

Conversely, some students had gone through the programme and been offered a place at Oxford, but still felt that they would not belong.

Students on the Forward Thinking programme also spoke about how the programme supported them to feel that higher education was for them, particularly where they were not able to learn from the experiences of friends and family, as described above. The value of these sources of information was highlighted in comments from Pathway to Healthcare students:

I have a brother who goes to university and he tells me that there's loads of societies there. So even if [...] you don't drink. There's so many societies such as sports societies where you can make friends and still socialise.

---

[5] Students had some optional Year 13 events that took place on campus.

5. DISCUSSION OF FINDINGS AND LESSONS LEARNED

Evidence from the local evaluations

The interim findings presented in this report provide limited evidence of the effectiveness of multi-intervention outreach and mentoring programmes on programme primary outcomes. When final-outcome data (HEAT-generated HE destination information) is made available in 2024, it will be possible to more accurately assess the impact of the programmes on students.

However, even with the final HE destination data, the particular experience of this cohort will need to be taken into account. The IPE findings suggest that the students value social interaction with their peers, and particularly being able to interact with 'people like [them]'. While it was felt that some elements of the programmes were suited to online delivery, the consensus for certain activities – such as mentoring on the Forward Thinking programme and summer schools – was that face-to-face delivery was far preferable. Parents and staff also commented on the importance of spending face-to-face time on campus to experience both social and academic aspects of HE. These programmes were run amid the disruption and upheaval caused by the COVID-19 pandemic. Changes made to the delivery of activities will likely have impacted students' experience of the programme which, in turn, will have affected the benefits that students will have gained from participating in the programmes.

The findings indicate that the continuous nature of the programme is viewed favourably by students, particularly where students are involved in it from an early age. However, where programmes run over a number of years, there is a risk that students may see activities as a series of standalone events. It is important, though, to note that the student sample sizes are very small which makes it difficult to generalise findings.

The small sample sizes also make comparisons between control and treatment groups challenging using the interim data. However, the data does suggest that students felt multi-intervention outreach and mentoring programmes were able to give them the knowledge they needed to make informed decisions about their future. Particularly important are aspects that replicated the HE experience, such as speaking to university students or completing an academic assignment. The findings should still be treated with caution as it is not known whether the views expressed are representative of the sample as a whole.

A further challenge created by the small sample sizes and low rate of survey returns lies in assessing whether the assumptions underpinning the Theories of Change hold true. However, the data available seem to indicate that programmes support and enable students to make a successful application to HE. One of the underlying assumptions in the Theories of Change is that the students eligible for the programmes do not necessarily see university as a place for them. The findings from the Pathway to STEM and K+ programmes indicate that this is not the case and that students come to the programme intending to apply to HE. The results do suggest that participation in the programmes increases student confidence around applications and affirms that HE is for them. These findings are similar to those from TASO's evaluation of summer schools during COVID-19. At baseline, this evaluation found that the majority of students reported a high likelihood of attending HE, and self-reported applications by the January UCAS deadline were very high for both the treatment and control groups. As we have suggested previously, the findings may demonstrate a need to better target outreach activity and support for disadvantaged and underrepresented students. Harrison and Waller (2017) concur that WP activities tend to target disadvantaged young people who have been identified as having 'potential' and are, in many cases, already on the HE trajectory. This raises questions about the aims of WP activity and how far it is currently focused on students who display no intention of, or interest in, progressing to HE and who have yet to show any potential.

Lessons learned about how to evaluate multi-intervention outreach

The process of working with multiple HEPs to explore how different evaluation methodologies can be used to better understand the efficacy of complex multi-interventions programmes has provided a valuable learning opportunity. The key lessons learnt are outlined below.

Response rates

Response rates were especially low for students in the control groups of the pilot trials. To mitigate the impact of low response rates and small sample sizes, the following steps are important:

- Ensure the longer-term primary outcome of the impact evaluation is a behavioural outcome that can be easily observed, such as tracking students into the HESA dataset using HEAT.

- Build survey questions into existing touch points throughout the programme, such as the application process and event/activity sign-up forms. This reduces the number of requests and communications flowing from programme staff to students and encourages students to respond.

- Offer appropriate compensation to thank students for their time. This may be entry into a prize draw or a low-value voucher. Appropriate ethical approval must be obtained for this.

Feasibility of using randomisation to improve evaluation standards

When setting up the pilot RCTs, TASO was interested in meta-learning around the feasibility of introducing randomisation as an evaluation method in this context. Several key lessons have emerged over the course of the pilot trials:

- Recruitment to the outreach programmes, including the random allocation of programme places, was straightforward. The HEP research partners conducted the recruitment as usual, initially filtering out ineligible applicants in line with their internal programme eligibility criteria. Once all ineligible applicants had been filtered out, each programme was still substantially oversubscribed, and eligible applicants were randomly allocated to the treatment group (receiving a place on the programme) or control group (not receiving a place on the programme). The randomisation process was able to account for priority group students by reserving a set number of places on the programme and randomly allocating them to priority students.

- Randomisation may be a fairer way to allocate programme places than the current practice. Prior to conducting these pilot trials, students were allocated programme places either on a first-come basis or by using a ranking process. The use of randomisation in this context does not hinder the selection process as all students need to meet the minimum eligibility criteria on which they would be ranked. Removing the first-come process, in fact, aids fairness as, typically, more advantaged students with strong parental or school support may be likely to apply early and therefore receive a place on a programme.

- Opt-out consent did not adversely impact the study. The research ethics for the pilot trials required that all eligible applicants were provided with the option to opt out of sharing their data as part of the evaluation, while still having access to the programme. This process appears to have worked well: the HEP partners' Research Ethics Committees approved of the approach and the methodology did not adversely impact the number of participants included in the analysis.

- Spillover effects – caused when a student in the control group is indirectly exposed to materials from the treatment group – are not unique to RCTs but need to be considered in this context. We learned, via the IPE of one trial, that at least one student in the treatment group had shared their insights and materials from the programme with peers who were not participating in the programme. Although this was a harmless action in the eyes of the student sharing the information, it limits the validity of the study, as the control group student may have changed their behaviour as a result of the information.

Data collection tools

- Proxy measures are a valuable method of measuring intermediate student outcomes when there is a delay in accessing longer-term primary outcome data. Proxy measures are indirect indicators, often self-reported, that relate to the primary outcome of interest. For example, students' self-reported first-choice university in their UCAS application can be used as a proxy measure for progression to HE. However, such proxy measures come with limitations – the student may not receive an offer or progress to their self-declared first-choice university – and should be used alongside tools to measure longer-term behavioural outcomes.

- Long-term behavioural outcomes for students can be tracked using HEAT, and other national trackers such as Aim Higher West Midlands and EMREP. For example, for the pilot RCTs conducted as part of this project, all participants in the treatment and control groups were added to HEAT. All programme activities were also added to HEAT and, where possible, individual attendance at these events is tracked for students in the treatment groups. When HESA data becomes available, it will be straightforward to track the treatment and control group students into the HESA dataset and observe final-outcome data such as enrolment in HE and type of institution attended.

- Psychosocial intermediate outcomes, such as academic self-efficacy and sense of belonging, should be measured using validated survey scales. The pilot trials presented in this report used unvalidated survey scales. The validity of the measure is, therefore, reduced and we cannot be certain that the questions asked do indeed measure the intended outcome of interest. For example, it could be that participants did not understand the questions or interpreted them differently. Unvalidated scales were used because, at that point in the project set-up, no validated scales suitable for use in this context existed. TASO has taken the relevant steps to remedy this and is in the process of validating a Widening Participation Questionnaire, with a series of scales to measure relevant intermediate outcomes.

Adherence to the research protocol

- Ensuring that evaluators and programme practitioners alike are familiar with the research protocol at the point of project set-up will facilitate the smooth implementation of the evaluation. One of the learnings that emerged from this project is that elements of the evaluation can be incorrectly implemented if there is a change in project staff, or a disconnect in communication and understanding between evaluators and practitioners. For example, if the survey items asked as part of a scale are altered or omitted, this will limit the ability of the evaluation to sufficiently answer the pre-specified research questions. It is, therefore, important that the full project team, including delivery staff, have the opportunity to contribute to the evaluation plan and familiarise themselves with the research protocol. This up-front team planning will build an understanding of why each component of the evaluation is planned and increase the likelihood that the evaluation is implemented correctly.

Exposure to different programmes – double treatment

- A common limitation across these studies is that students from the control/comparison groups may have participated in outreach activities run by HEPs other than the institution delivering the intervention. The challenge of not being able to isolate the control group from other activities is common in WP outreach. To account for this, the final analysis of the longer-term outcome data for the pilot RCTs will match baseline and outcome data to records that show whether students attended programme activities. This matched dataset will then be used to explore whether attendance at activities mediates any effect on student outcomes. Furthermore, we are exploring to what extent it will be possible to also collect information on other outreach activities in which individuals have participated (aside from the programme interventions) using the HEAT data records. If it is possible to collect such data, we will also seek to take this into account in the final analysis.
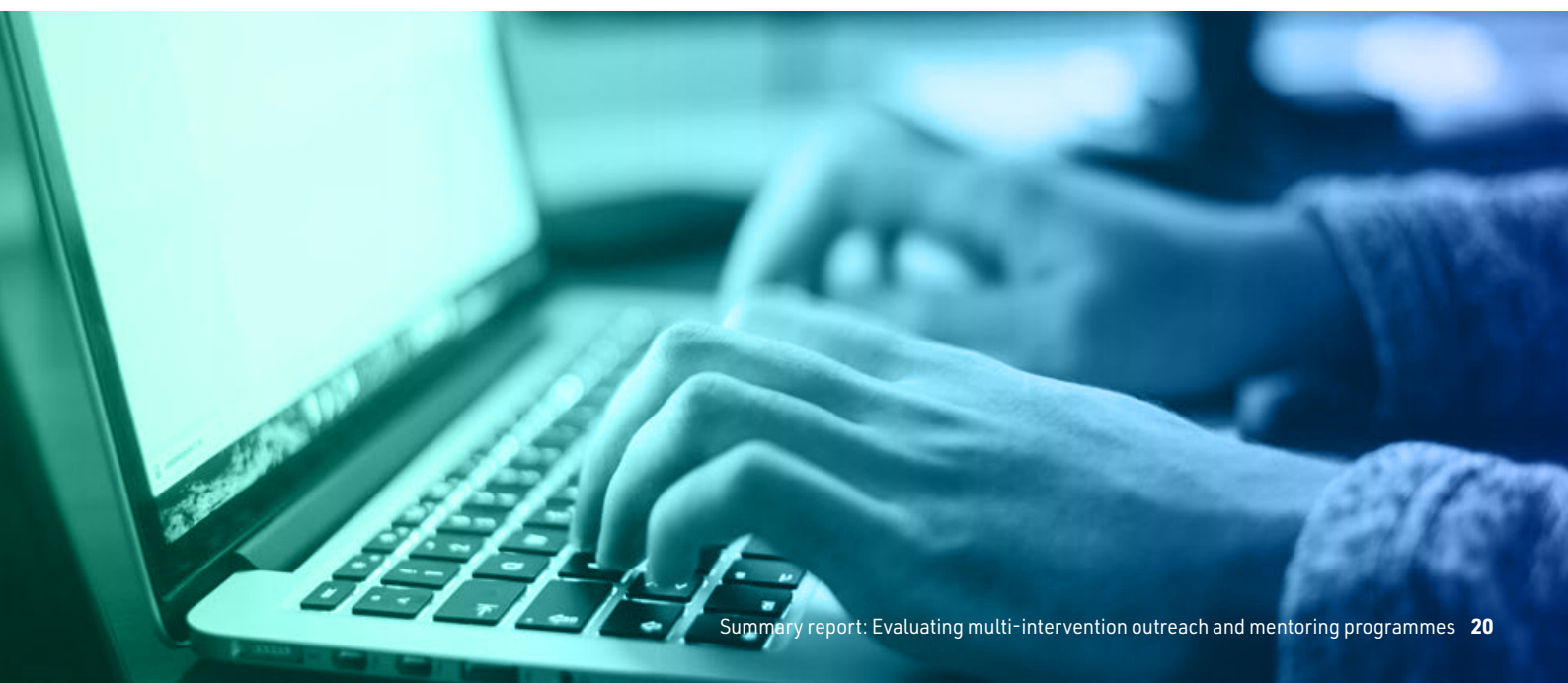
6. MAPPING OUTCOMES AND ACTIVITIES TOOL (MOAT)

Existing frameworks aim to support WP teams; one such framework was developed by the Network Evaluating & Researching University Participation Interventions (NERUPI). The NERUPI framework is based on the theory of 'capitals' (Bourdieu, 1986) and consists of five overarching aims to address social capital, academic capital, habitus, intellectual capital and skills capital (Hayton & Bengry-Howell, 2016). These are further broken down into different levels that correspond to student age, with specific objectives at each level. For example, at Level 1, students should 'understand how GCSE study relates to HE and future career opportunities'. The framework gives HE providers the autonomy to design or shape their outreach activities around both overarching and specific aims and objectives, with a multi-intervention programme designed to address all of these.

In a similar vein, the OfS guidelines outline that all Uni Connect partners must develop a 'progression framework' (OfS, 2022) which should clearly state the specific changes expected for an individual over time as a result of their participation in activities. Alongside the activities that make up individual Uni Connect programmes, the frameworks should also include short, medium and long-term outcomes in addition to an indicator bank detailing how outcomes will be measured and specifying indicators of success. A progression framework has been developed for a number of programmes, for instance, the Higher Education Outreach Network progression framework (HEON, 2022) and the Southern Universities Network interactive progression framework (SUN, 2022).

Whilst these existing frameworks encapsulate the notion that multiple aspects of an individual's journey will impact their decision to apply to, enrol in and, ultimately, succeed in HE, there is currently no clear mapping of which activities lead to which outcomes, and how each contributes to the overall efficacy of a multi-intervention programme. This, in turn, causes a lack of consistency across the sector in terms of the typology of activities, outcomes and measurement tools, which makes it more difficult to build the evidence. We are currently missing an evidence framework which can attribute what works to specific activities within a programme; categorise short, intermediate and long-term outcomes (attitudinal, skills-based and behavioural) and how these can be measured; and create a sector-wide consensus to continuously build on in light of new evidence. The tool presented below aims to fill this gap and can be

integrated into TASO's evaluation guidance. It provides a comprehensive mapping of activities and outcomes that the sector can use to plan WP interventions and programmes to support better evaluation.

In developing the tool, a mapping exercise was conducted to chart the range of activities and outcomes that a MIOM programme might cover (see Figure 3 below). This diagram further highlights the complexity of multi-intervention programmes, and the challenges involved in conducting a robust evaluation. A common perspective was that all activities link to all outcomes. Setting out the activities and outcomes in diagrammatic form, with no path charted from activity to short-, medium- or long-term outcomes, clarifies why evaluating multi-intervention programmes is a challenge.

The mapping was further refined in consultation with the project partners and sector stakeholders. Initial comments highlighted the importance of incorporating intermediate outcomes in the tool and suggested that some intervention types and descriptions were too broad. We worked with the project partners to define and refine activity types and to identify their top three outcomes linked to each activity. This process revealed the challenges involved in linking key outcomes to specific activities.

The feedback from stakeholders was that the majority of the sector uses HEAT (or other national trackers that can be mapped onto HEAT); using a different set of activities and sub-interventions could, therefore, cause confusion and a loss of continuity in terms of historical data recording. Based on this feedback, types and sub-types of activities have been aligned with the HEAT Evaluation Plans Tool to enable consistency across the sector in how programmes are developed, coded and tracked.

Due to the focus on raising attainment in the new OfS guidance, TASO has worked collaboratively with the national trackers – HEAT, Aim Higher West Midlands and EMREP – and the OfS to develop a separate typology specifically focused on activities that aim to support increased attainment. Increased KS4 and KS5 attainment are the relevant long-term outcomes here; however, intermediate outcomes observed along the journey to improved attainment – including academic self-efficacy and study strategies – are also important. A draft version of the attainment-raising typology will be added to the national tracking services, ready for Uni Connect Partnerships to start using in the Autumn

2023 term. In 2024, the attainment typology will be finalised and embedded in the national tracking services for everyone to use.

Using the MOAT

The MOAT and guidance for using the tool are available to download here and can be used as a starting point to assist evaluators and practitioners in their outreach programme planning. The tool is a foundation of TASO's Monitoring and Evaluation Framework and can be used to inform decisions about which outreach activities to deliver, as well as how to evaluate these activities.

For evaluators or practitioners engaging with the tool for the first time, we recommend using it to develop a Theory of Change model for your outreach programme or activity (see further guidance on developing Theories of Change). Alternatively, if you already have a Theory of Change, you can use the MOAT to review it, observing the existing links between activities and outcomes in the Theory of Change to ensure that they align with the mapping presented in the tool. Once a Theory of Change has been developed, providers can implement TASO's guidance on measuring intermediate outcomes, and use the WP Questionnaire to help measure progress against their Theory of Change.

The tool contains multiple activity types that commonly comprise provider outreach programmes. Along the top are the broad activity 'types', such as HE information, advice and guidance (IAG). Below these are the activity 'sub-types', which are more granular, including sessions on finance, personal statements and student life. Multiple sub-types can be selected for each activity type, and providers should choose those that are delivered as part of their own outreach programmes.

The tool contains a list of the potential outcomes that providers will be trying to impact through their outreach activities. These are split by behavioural and non-behavioural, as well as by short-, intermediate- and long-term outcomes. The temporal split is important as some outcomes may be achieved through one activity (short-term) – such as knowledge of financial support after a finance-related IAG session, whereas others – such as academic self-efficacy and a sense of belonging – will likely only be achieved based on a cumulation of activities over time (intermediate). Application to and enrolment in HE are overarching, long-term outcomes across all outreach activities and programmes. Some outcomes fit into multiple 'bins'; for example, motivation could be achieved in the short-, intermediate- and long-term. These outcomes have been refined based on those captured by the three project partners as part of the TASO-funded evaluation, through consultation with a range of sector practitioners and evaluators. Whilst the final list includes a wide range of outcomes, we recognise that it is not possible to provide an exhaustive list.

This mapping is designed to be used as a starting point for practitioners new to evaluation and aims to help users develop causal pathways, encouraging reflection on the mechanisms that underpin those pathways. TASO is keen to preserve provider/evaluator autonomy, and users are able to choose the outcomes most relevant to the programme and activities being evaluated. However, we recommend that HEPs align intervention outcomes with this list to enable greater consistency in the evaluation of activities.
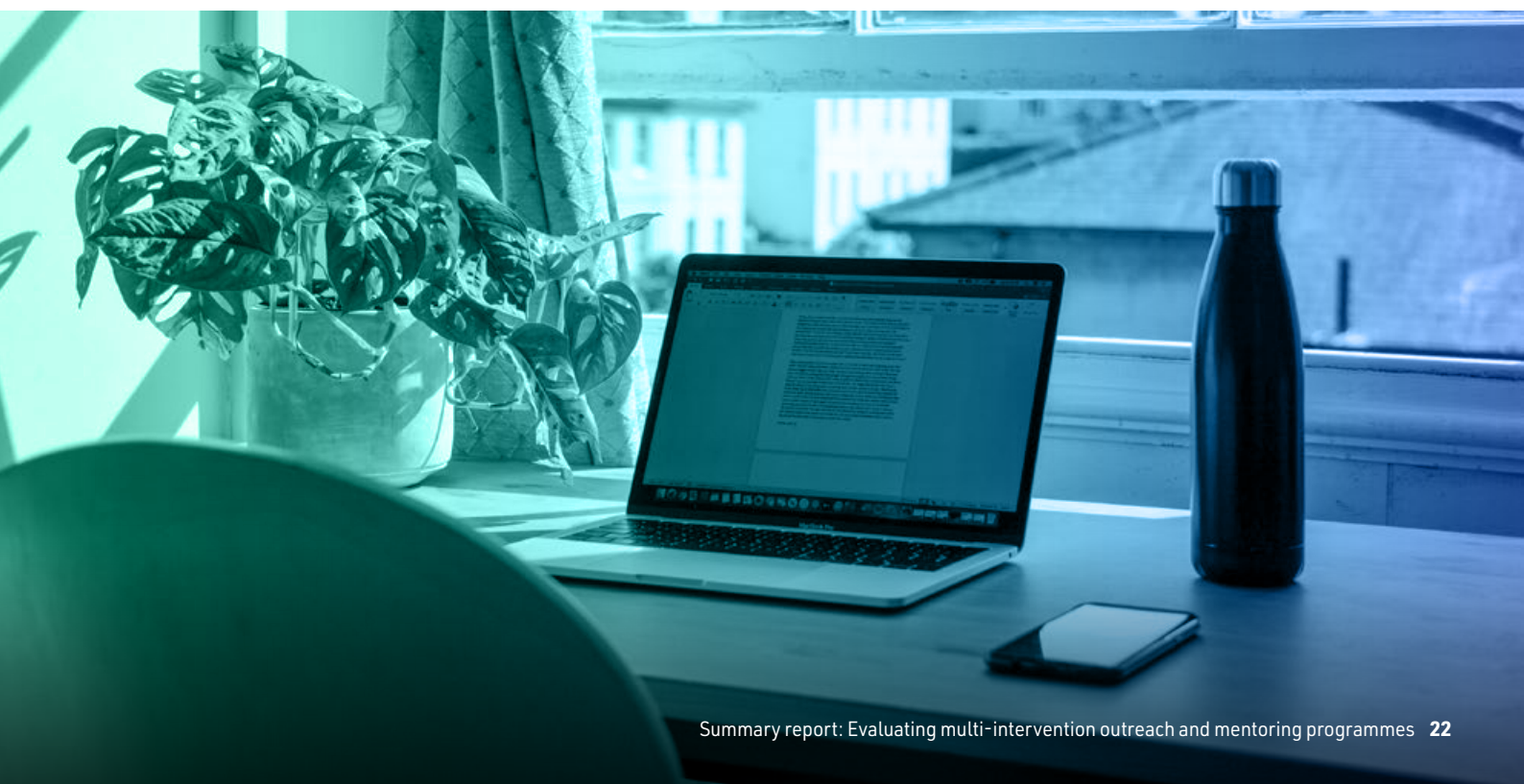
7.   CONCLUSIONS AND RECOMMENDATIONS

The local evaluations of the programmes showed mixed results. One study showed that participation in a multi-intervention outreach and mentoring programme increased students' likelihood of progressing to a research-intensive HEP, compared to a matched comparison group who were assumed not to have participated in the programme. However, due to data access limitations, this study did not control for prior attainment and presents exploratory, rather than casual, analysis. The three pilot RCTs showed that the relevant multi-intervention outreach and mentoring programmes did not affect student enrolment in HE. However, these interim results are based on proxy measures and should be treated with caution until the final outcome data is available. The evaluation investigating whether employing personalised communication could be an effective strategy for increasing parental/guardian engagement with the Forward Thinking programme found that parents/guardians who received a personalised invitation were 2.1 times more likely to attend the event than those who received a standard invitation. This shows evidence of promise for an effective strategy to engage parents in their learners' journey to HE and could be further explored in future research.

Despite the pilot nature of the local evaluations, the use of proxy measures until the final outcome data becomes available, and the fact that these programmes and evaluations took place during the COVID-19 pandemic, the local evaluations provide a valuable contribution to the emerging evidence base and will help the sector to design rigorous evaluations moving forward.

It is important to bear in mind that these results need to be treated with caution. Low response rates to surveys and invitations to participate in qualitative focus groups reduce sample sizes and limit the validity and generalisability of the evaluations. Although we cannot be certain, response rates were likely particularly low in these local evaluations due to the COVID-19 pandemic and the context of students being asked to participate in multiple online activities, including research and evaluation activities.

In general, there was a high level of enthusiasm for trialling these formal evaluation methodologies. The provision of a TASO-funded research assistant within each partner HEP enabled them to commit to the multi-year evaluation and embed the necessary data-tracking processes to observe long-term outcomes. This way of working has, in turn, enabled TASO to learn valuable lessons about how different evaluation methodologies can be used to better understand the efficacy of complex multi-intervention programmes.

Recommendations:

Elements and outcomes of multi-intervention outreach

- HEPs and WP teams should adopt TASO's Mapping Outcomes and Activities Tool as part of their evaluation planning and implementation. This will not only aid consistent and more rigorous evaluation practice at the provider level, but will enable TASO to build a bank of evidence to improve our understanding of how specific elements of multi-intervention outreach and mentoring programmes lead to particular outcomes.

- Multi-intervention outreach incorporates multiple elements. To accurately evaluate the impact of these programmes, HEPs should identify the value of each element by using TASO's Enhanced Theory of Change tool to map how individual activities are anticipated to influence outcomes and explore more complex pathways to impact.

- Although only based on interim data, the local evaluations provide some evidence that these multi-intervention outreach programmes may be reaching students who are already highly likely to enter HE and highly selective universities. They further suggest that the programmes' true value may be in informing student choice about where and what to study, rather than whether to study. Better pre-entry preparation may also result in higher rates of continuation and success once on a course. HEPs should scrutinise the rationales and assumptions behind their programmes to ensure that evaluation outcomes are well-matched to the activities they run.

Data collection

- For multi-year programmes, low response rates are a key risk, as engagement with students can drop off over time. To mitigate the impact of low response rates and small sample sizes, HEPs should use behavioural as well as survey outcomes where possible, such as tracking students into the HESA dataset using HEAT.

- Proxy measures are a valuable method of measuring intermediate student outcomes when there is a delay in accessing longer term primary outcome data. Proxy measures are indirect indicators, often self-reported, that relate to the primary outcome of interest. For example, students' self-reported first-choice university in their UCAS applications can be used as a proxy measure for progression to HE. Proxy measures should be used alongside tools to measure longer-term behavioural outcomes.

- HEPs should also build survey questions into existing touch points throughout the programme, such as the application process and event/activity sign-up forms. This reduces the number of requests and communications flowing from programme staff to students and encourages students to respond. Survey data can also be used to assess impact on softer outcomes, which can help us understand the ways in which programmes are effective.

- To improve response rates, HEPs should offer appropriate compensation to thank students for their time. This may be entry into a prize draw or a low-value voucher. Appropriate ethical approval must be obtained for this.

Implementation and Process Evaluation (IPE)

- The Implementation and Process Evaluation (IPE) has been crucial in helping to explain the results of the local evaluations, and in providing data on how and why the programmes did or did not achieve their intended outcomes. When HEPs conduct evaluations of their interventions, they should adopt an integrated approach to impact evaluation and IPE, rather than seeing them as distinct activities.

Creating a control group

HEPs should use local evaluations as a blueprint to explore RCTs and quasi-experimental designs as part of their approach to the evaluation of multi-intervention outreach.

8. REFERENCES

Bergin, D., Cooks, H., & Bergin, C. (2007). Effects of a college access program for youth underrepresented in higher education: A randomized experiment. *Research in Higher Education*, 48(6), 727–750. https://doi.org/10.1007/s11162-006-9049-9

Bourdieu, P. (1986). The forms of capital. In Richardson, J.G. (ed.) *Handbook of Theory and Research for the Sociology of Education*. New York: Greenwood Press, 241–58.

Bowman, N., Kim, S., Ingleby, L., Ford, D., & Sibaouih, C. (2018). Improving college access at low-income high schools? The impact of GEAR UP Iowa on postsecondary enrollment and persistence. Educational *Evaluation and Policy Analysis*, 40(3), 399–419. https://doi.org/10.3102/0162373718778133

Burgess, A. P., Horton, M. S., & Moores, E. (2021). Optimising the impact of a multi-intervention outreach programme on progression to higher education: Recommendations for future practice and research. *Heliyon*, 7(7), e07518.

Emmerson, C., Frayne, C., McNally, S. & Silva, O. (2006). *Aimhigher: Excellence Challenge: A policy evaluation using the Labour Force Survey*. Department for Education and Skills, Research Report RR813.

Ford, R., Grekou, D., Kwakye, I., & Nicholson, C. (2014). *Future to discover: Fourth year post-secondary impacts report*. Ottawa, Canada: Social Research and Demonstration Corporation.

Harding, S., & Bowes, L. (2022). Fourth independent review of impact evaluation evidence submitted by Uni Connect partnerships: A summary of the local impact evidence to date for the Office for Students. Available at officeforstudents.org.uk

Hayton, A. & Bengry-Howell, A. (2016). Theory, evaluation, and practice in widening participation: A framework approach to assessing impact. *London Review of Education*, 14(3), pp.41–53.

HEON (2022). *Progression Framework*. Available at: https://www.heon.org.uk/about/progression-framework/

Herbaut, E. & Geven, K. M. (2019). What works to reduce inequalities in higher education? A systematic review of the (quasi-) experimental literature on outreach and financial aid. *World Bank Policy Research Working Paper* (8802).

Laing, K. & Mazzoli Smith, L. (2015). *Supporting the progression of looked after young people to university: Evaluation of the Choices Together Programme*. Project Report. Newcastle upon Tyne: Newcastle University.

Le, V. N., Mariano, L. T., & Faxon-Mills, S. (2016). Can college outreach programs improve college readiness? The case of the college bound St. Louis Program. *Research in Higher Education*, 57(3), 261–287.

Millet, C. M., & Kevelson, M. J. C. (2018). *Positioning for college success: The evaluation of the Princeton University Preparatory Program's work with high achieving, low income students* (ETS Research Report Series). Educational Testing Service.

Morris, M., & Rutt, S. (2005). *Evaluation of Aimhigher: Excellence Challenge. Aspiration to higher education: One year on.* DfES Publications.

OfS (2021). *Uni Connect annual report: Phase two, August 2019 to July 2020*. Available at: https://www.officeforstudents.org.uk/media/213bb753-863f-45d7-814c-4d2df8e71565/uni-connect-annual-report-final-for-web.pdf

OfS (2022). *Uni Connect: Guidance on priorities.* Available at: https://www.officeforstudents.org.uk/publications/uni-connect-guidance-on-priorities/targeted-outreach/

Page, L., Kehoe, S., Castleman, B., & Sahadewo, G. (2017). More than dollars for scholars. *Journal of Human Resources*, 54(3), 683–725. Available at: https://doi.org/10.3368/jhr.54.3.0516.7935r1

Robinson, D. & Salvestrini, V. (2020). *The impact of interventions for widening access to education. A review of the evidence*. Education Policy Institute for the Centre for Transforming Access and Student Outcomes in Higher Education (TASO). Available at: https://epi.org.uk/wp-content/uploads/2020/03/Widening_participation-review_EPI-TASO_2020-1.pdf

Simms, K. (2015). *The 'Heads Up' scheme evaluation outcomes: An aspiration raising programme run by the Higher Education Progression Partnership (HEPP) for Widening Participation Students*. Widening Participation Research and Evaluation Unit, University of Sheffield.

SUN (2022). *Monitoring, Evaluation and the Progression Framework*. Available at: https://www.sunoutreach.org/re-monitoring-evaluation-and-the-progression-framework/

The Access Project. (2021). *The Access Project: Impact Report 2021*. Available at: https://www.theaccessproject. org.uk/our-impact-reports/impact-report-2021

White, K., Eames, A., & Sharp, C. (2007). *A qualitative evaluation of the IntoUniversity programme*. National Foundation for Educational Research.

Williams, M., & Mellors-Bourne, R. (2019). *Improving access for the most able but least likely: Evaluation of the Realising Opportunities Programme*. Institute for Employment Studies.

TASO

TASO is an independent charity that aims to improve lives through evidence-based practice in higher education (HE). We support HE professionals through research, toolkits and evaluation guidance on what works best to eliminate equality gaps. We inform practitioners of the best available evidence and produce new evidence on the most effective approaches. TASO is an affiliate 'What Works' centre and is part of the UK Government's What Works Movement.