

# The importance of information, advice and guidance in widening access to higher education

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DOI: <https://doi.org/10.5456/WPLL.26.2.161>

**Abstract** Despite significant amounts spent on widening access to higher education (HE), there is sparse evidence of what works. Evaluation of multi-intervention programmes is challenging because it is difficult to elucidate which elements of programmes are important (and why). Here we present results from focus groups and surveys at different time points on a multi-intervention programme based at a UK university. At the start of the programme, attitudes towards studying at – and belonging in – HE were already positive. Confidence in how to apply to and fund HE was relatively low at the start of the programme and increased significantly during it. In contrast, the perception of being able to afford to participate in HE was relatively low throughout. Focus group data also suggested that information on application and funding was helpful and additionally highlighted concerns over affordability and the social side of HE. Information, advice and guidance (IAG) elements of multi-intervention programmes therefore appear to confer significant benefit to students in understanding how to apply to and fund HE. Whilst aspiration raising seems not to be a critical aspect of widening access, focus on attainment and away from aspiration raising should not be done at the expense of excluding IAG.

**Key words** Multi-intervention outreach, widening participation, information, advice and guidance, aspiration, IAG

## Introduction

A variety of initiatives are used to encourage and enable pupils who might otherwise be less likely to participate in HE to consider

it as an option. Amongst other things, these include financial scholarships, summer schools, attainment raising activities, and information, advice and guidance (IAG). Multi-intervention programmes (or so-called 'black box' interventions), which encompass a range of different activities, are also widely employed. Despite the ubiquitous nature of these activities across HE and the amount of resource devoted to them, the evidence for 'what works' is arguably sparse (Skilbeck, 2000; Gorard and Smith, 2006; Gorard *et al.*, 2006; Gorard, See and Davies, 2012; Younger *et al.*, 2019; Robinson and Salvestrini, 2020; Austen *et al.*, 2021).

Early efforts to encourage the widening participation agenda in the UK emphasised enhancing the aspirations of young people to participate in HE (DfES, 2003). Even at the time, this approach was critiqued for locating the deficit within the individuals themselves (Harrison and Waller, 2018). Moreover, the narrative was not convincingly supported by evidence (St. Clair, Kintrea and Houston, 2013; Archer, De Witt and Jong, 2014; Green *et al.*, 2018). Although a link between aspiration and attainment was reported (Goodman and Gregg, 2010; Gorard, See and Davies, 2012) the causal direction of this was unclear (Gorard, See and Davies, 2012; Gorard and See, 2013) and any evidence that *raising* aspiration can serve to improve attainment unconvincing (Baker *et al.*, 2014). Gorard, See and Davies (2012) published a comprehensive review of evidence of any causal links between 13 identified attitudes, aspirations and behaviours and found some evidence of parental involvement being associated with participation, but little or weak evidence for any positive effects of individual aspirations, attitudes and self-efficacy.

More recently, UK policy has re-emphasised raising attainment as a key method to widen participation in HE (Office for Students, 2022). However, whilst there is a generally accepted link between attainment and participation, it is arguable whether raising attainment is a matter for HE outreach teams or should be left to schools and colleges. Harrison and Waller (2018) report that around a third of HE outreach teams felt it outside their remit and their confidence in their ability to raise attainment was low. Nevertheless, the shift away from raising aspirations and towards focusing on raising attainment, has – to an extent – dichotomised the field. This has been potentially to the detriment of activities

that do not fall squarely into either category and it has rekindled the argument that activities *other* than attainment raising may amount to little more than 'institutional marketing' (see e.g. Office for Students, 2019).

There has been increasing interest in evaluating widening participation activities in order to determine what does work (and why). However, since Higher Education Institutions (HEIs) typically evaluate success by measuring progression to the specific institution running the intervention, rather than to HEIs more generally (there are barriers to obtaining wider data), outreach success is typically tied to recruitment success (and therefore it cannot inexorably be argued to be completely independent from marketing and recruitment). This can be problematic at an institutional level – where such activities are often conflated with marketing and recruitment initiatives – and at a national level, where the impact of such initiatives is considered according to the impact each *institution* has on closing its own gaps, rather than any contribution the HEI may have made to sector-wide gaps.

Programmes containing multiple components can be challenging to evaluate meaningfully since the design of such programmes is generally complex and multi-factorial; the combination of activities typically honed over many years. Evaluation of individual elements of a programme is difficult because of the presence of the other components, whilst evaluation of the whole programme is of little benefit to the wider sector unless the contribution of the separate components is understood. One way of disentangling this conundrum is by analysing different combinations of activities in a single programme participated in by different people (see e.g. Burgess, Horton and Moores, 2021), although interpretation of such results is more complex in the scenario where participants select elements themselves rather than being randomly allocated to them.

Successful evaluation of a programme commonly rests on a comprehensive 'theory of change' (Dent, Mountford-Zimdars and Burke, 2022; Barkat, 2019). The theory of change is a model which hypothesises how and why any given intervention should work. By employing a theory of change, it is possible to measure

outputs or intermediate outcomes of a given intervention before the final outcome can be measured and infer which parts of a programme are proving to be necessary and effective at producing a change, as well as understanding how effectively an intervention has been delivered. For example, if an attainment-raising intervention is expected to increase participation in HE, a suitable intermediate outcome to measure would be whether or not attainment has actually been raised. Aims of multi-intervention programmes may have more opaque mapping to intermediate outcomes than in this example, but nonetheless still commonly have an associated theory of change. As mentioned above, aims can be multi-factorial, with sessions potentially able to change attitudes towards HE as well as knowledge of – and confidence in – how to apply to and fund HE. Measuring the success or failure of interventions to influence intentions to apply to HE alone does not provide information to practitioners on which aspects are most important in achieving this goal or provide information on how to improve.

In this study, we present the results of a survey conducted with students on two multi-intervention programmes at different time points that measured the mediating variables in our theory of change. These included whether students thought they would enjoy university and whether they believed university is a place for people like them; knowledge of how to apply for and fund university; and confidence of being able to apply for and afford university. We wanted to determine firstly if there was a need for a change in attitude towards, and knowledge of, HE prior to the intervention programme and, secondly, whether or not the programme was successful in encouraging these changes. We used a mixed methods approach for this study, using questionnaires to measure whether changes occurred across time, and focus groups to gain insight into the reasons for any changes. We have not yet measured as part of this study whether any changes were associated with an increased level of participation.

## Method

### Survey sample

The target group were 222 sixth-form students who were enrolled on one of two widening participation outreach programmes at Aston University from 2020 to 2022; the Pathway to Healthcare (October 2020 – March 2022) and the Pathway to STEM (April 2021 – March 2022). The aims of the programmes are to improve the likelihood of successful enrolment to medicine and healthcare-related courses or STEM-related courses by equipping students with the skills, knowledge and experience to apply to university and prepare them for study in HE. These aims are achieved with a programme of activities spanning Year 12 and Year 13 of their studies (ages 16–18 years and prior to the age that most students typically apply to university in the UK). These sessions included: IAG (covering the university application process, student finance and student life), subject tasters, a summer school (online for this cohort) and study skills. Healthcare students, additionally, were able to take part in academic tutoring in either Biology or Chemistry. These sustained programmes of activity aimed to raise students' aspirations, improve their motivation to progress onto HE and provide them with the knowledge, skills and experiences that would enhance their university applications. During their time on the programme, students were exposed to a range of leading experts from Aston University and key professionals from within their stream's corresponding sector. Students also had the opportunity to meet current Aston University students and ask them about their HE experiences to help them make informed decisions about their futures. Categorisation of types of intervention in a multi-intervention outreach context is not always clear-cut, but IAG activities typically refer to information, advice and guidance that is fundamental in helping students make informed decisions about their future steps. This could be guidance for the university application process, including how to write an effective personal statement, information on student finance and budgeting, or guidance on particular careers within certain sectors. The purpose of IAG differs from other common types of outreach that may instead try to raise aspirations (e.g. campus visits, master

classes) or attainment (e.g. tutoring), although in practice, different activities are sometimes combined into a single event.

This study was part of a larger project conducted at Aston University and supported by The Centre for Transforming Access and Student Outcomes in Higher Education (TASO) which involved randomised controlled trials of some of the outreach activity at Aston University. This was either in terms of whether applicants were accepted onto it, or in terms of which version of an intervention programme they received. The overarching aim of the project was to determine whether – and why – such intervention programmes were effective. As such, the project sought to gather a range of evidence using both quantitative and qualitative methods. It was considered that the quantitative data would help us to understand whether or not the intervention was able to change perceptions and behaviour, in accordance with our theory of change for the pathway. It was believed the qualitative data would help us to better understand the nature of – and reason for – that change, as well as affording the opportunity to gain further insights for improvements to the pathways. It should be noted that although the focus group facilitator was not involved in the pathways, they were a member of university staff, which may have influenced participants' responses.

At three points during the programme, students were sent a milestone survey (MS). The first survey (MS1) was sent out at the beginning of the programme in early 2021 (January 2021 for Healthcare and April 2021 for STEM). MS2 was sent out in September 2021 before the UCAS (University and Colleges Admissions Service: a shared admissions service for all UK HE) application window opened (Healthcare) or mid-way through it (STEM<sup>i</sup>) in October 2021. MS3 was sent out in February/March 2022 after the initial UCAS application window closed. These surveys comprised 20 and 30 questions, of which seven of these are relevant to determining students' self-reports concerning the application process, student finance and sense of belonging. Those seven questions are in Table 1. Three of the questions, concerning the application process, were only posed in the first two surveys since they were not relevant once the UCAS application window had closed.

In an effort to improve response rates, an incentive in the form of a prize draw for £100 of shopping vouchers was offered for all three surveys for the Pathway to Healthcare and the second and third surveys for the Pathway to STEM. The first survey for the Pathway to STEM was used as a means for students to accept their place on the programme. Overall response rates were 72% (160 responses) for MS1 but reduced for subsequent surveys to 45% (99) and 33% (73) for MS2 and MS3 respectively.

**Table 1** The seven milestone survey questions and possible responses posed to students on the Pathway to Healthcare and Pathway to STEM. ‘Don’t know’ was available as a response for each question. The right-most columns indicate those questions which were asked as part of MS1 and MS2 or MS3.

Statement	Responses	MS1/ MS2	MS3
How confident are you that you know how to apply to university?	Not confident; Not that confident; Neutral; Quite confident; Extremely confident	✓	x
How confident are you that you could make a successful application to university?	Not confident; Not that confident; Neutral; Quite confident; Extremely confident	✓	x
How confident are you that you could make a successful application to study [a STEM subject; medicine or healthcare] at university?	Not confident; Not that confident; Neutral; Quite confident; Extremely confident	✓	x
How much do you know about how to fund university?	Almost nothing; A little; Something; Quite a bit; A great amount	✓	✓
How confident are you that you can afford to go to university?	Not confident; Not that confident; Neutral; Quite confident; Extremely confident	✓	✓
How much do you agree with the following	Strongly disagree; Disagree; Neutral; Agree; Strongly agree	✓	✓

statements: I would  
enjoy university?

How much do you agree with the following statements: university is for people like me?	Strongly disagree; Disagree; Neutral; Agree; Strongly agree	✓	✓
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## Survey analysis

Analyses to determine if responses changed across milestone surveys were conducted using Wittkowski's modification to Friedman's one-way analysis of variance by rank (Wittkowski, 1988) implemented in R using the *muStat* package. Friedman's test is a non-parametric alternative to a repeated measures ANOVA and can therefore help us to infer differences between groups with ordinal level data. The modified test, when used with questions from 3 MSs (finance and sense of belonging), means that data can be included from any respondent who has completed only two of the three milestone surveys. Post-hoc tests on the data for finance-related and sense-of-belonging-related questions were carried out using the Conover test implemented in the *PCMCRRplus* R package but only on complete data for the relevant MSs. These post-hoc tests were used to help determine at which point in the programme any significant changes in response had occurred. Any 'Don't know' responses were treated as missing data.

## Focus groups

All 206 students who had responded to at least one MS were invited to take part in online focus groups. After attrition due to non-response or eventual non-availability two ~40-minute focus groups were carried out; one with 4 Healthcare students and the other with 2 STEM students. The focus-groups were semi-structured; the topics covered the support provided by outreach programmes, and physical and social belonging in the context of participation in HE. Participation in the focus groups was incentivised by a reward of £10 in shopping vouchers.

We took a phenomenological approach to the interpretation of the transcripts (Thiele *et al.*, 2018) and used thematic analysis to identify statements related to the three themes of relevance of the survey questions: university applications, student finance and



sense of belonging (in terms of understanding of academic or social aspects of student life). The statements were further characterised in terms of where their understanding arose (e.g. friends, family or from the pathway, or elsewhere) and if they supported the overall survey results or were counter to them.

## Ethics

Ethical approval for the milestone surveys was given by Aston University Ethics committee (*ref* UREC1675) in July 2020. Ethical approval to run focus groups was given by Aston University's College of Health and Life Sciences ethics committee (*ref* HLS21018) in May 2022.

## Results

The responses to the survey questions are considered below under three themes: knowledge and self-efficacy of applying to HE; perceptions of belonging and enjoyment of HE; and funding and affordability of HE. Note that the data from all respondents is presented in all figures below even if they responded to only one survey. The length of each segment in the figures is proportional to the percentage of the response and the counts for each response are displayed in the bars; numbers below seven are suppressed for reasons of space.

Table 2 shows results of a series of Friedman tests on the responses for each of the seven questions found in Table 1 over two or three milestone surveys and, where applicable, the associated post-hoc Conover tests. The p-values for the individual Friedman tests were adjusted using Bonferroni correction (a multiple-comparison correction used when several statistical tests are being performed simultaneously). So, for the three application-related questions, p-values have been multiplied by three, and for the finance- and sense-of-belonging-related questions, the p-values have been multiplied by two. Note that the p-values for the results between different MSs (columns headed MS1 vs MS2, etc.) have not been adjusted. The number of respondents, *n*, varied across questions because some students did not answer all the questions or responded 'Don't know'; the latter were treated as missing data. The results of Table 2 are further discussed in the relevant sections below.

## Knowledge and self-efficacy of applying to HE

Figure 1 shows the percentage of people responding how confident they felt regarding different aspects of applying for HE at the beginning and middle of the pathway programmes.

**Table 2** Results of a series of Friedman tests on the responses for each of the seven questions found in Table 1 over two or three milestone surveys (MSs), and, where applicable, the p-values of the associated post-hoc Conover tests.

Statement	n	$\chi^2$	p	MS1 vs MS2	MS1 vs MS3	MS2 vs MS3
How confident are you that you know how to apply to university?	77	40.727	<.001	-	-	-
How confident are you that you could make a successful application to university?	76	16.447	<.001	-	-	-
How confident are you that you could make a successful application to study [a STEM subject; medicine or healthcare] at university?	75	9.013	.008	-	-	-
How much do you know about how to fund university?	95	56.317	<.001	<.001	<.001	.349
How confident are you that you can afford to go to university?	97	9.860	.015	.049	.004	.664
How much do you agree with the following statements: I would enjoy university?	99	5.026	.162	-	-	-
How much do you agree with the following statements: university is for people like me?	98	8.745	.025	.006	.663	.150

Students reported relatively low confidence in knowing how to apply at the first time point, but over 50% more respondents were confident in knowing how to apply at the second time point. Similar – but smaller – increases were seen in confidence of being able to make a successful application. Table 2 shows that the increases across the two time points were statistically significant for all three questions regarding knowledge and self-efficacy of applying to HE.

The data provided by the focus groups were also strongly supportive of a causal nature of the programme on the improvement in confidence around university applications. For example, 'I think first of all sort of it signposted everything I needed to be doing throughout my application to medicine' and 'I definitely needed support with ... my personal statement because ... I was struggling with it'. There seemed to be agreement that the pathway helped them make better applications rather than affecting their likelihood of applying per se, e.g. 'I think I would have still applied somehow I would have gotten there, but it did help a lot'.



How confident are you that...

Q1: you know how to apply to university?

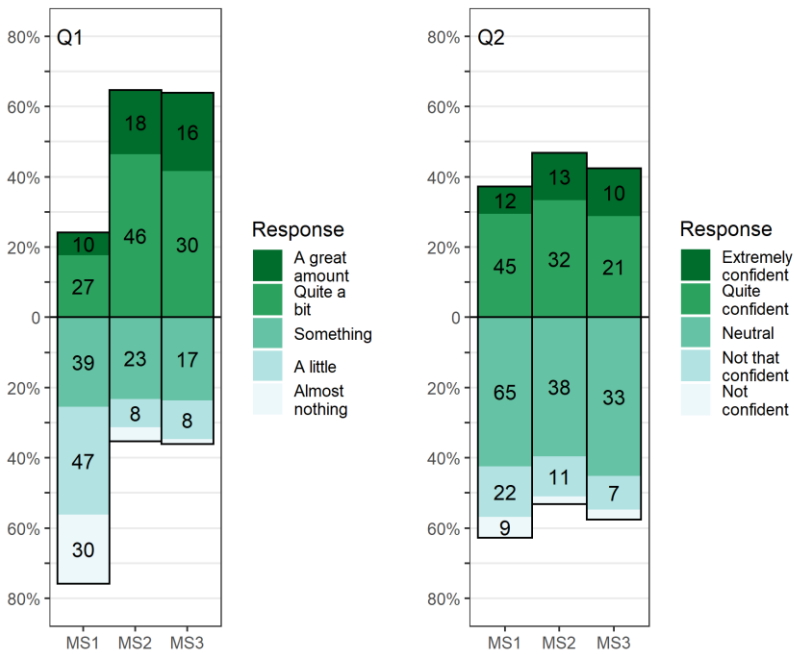
Q2: you could make a successful application to university?

Q3: you could make a successful application to study a {STEM/Healthcare/Medicine} subject at university?

**Figure 1** Diverging stacked bar charts of the responses to the three questions relevant to student applications

### Funding and affordability of HE

Figure 2 shows that at the start of the programme, students’ knowledge of how to fund university was low, but that this increased significantly during the programme. Students’ perceptions of being able to afford to go to university were also low at the start of the programme, but – in contrast to the knowledge of funding – improved only marginally (see Table 2). Although there was an increase in positive responses to both questions around student finance, 57% of respondents to MS3 were neutral about – or not confident – that they could afford university, with confidence even dropping slightly (not statistically significantly) by MS3.



Q1: How much do you know about...how to fund university?  
 Q2: How confident are you that... you can afford to go to university?

**Figure 2** Diverging stacked bar charts of the responses to the two questions relevant to student finance applications

Perhaps relevant to the lower levels of confidence in the affordability of university, one student in the focus groups, when asked about the support that they would need at university, referred to budgeting:

‘With finances and a lot of people kind of go away for university, so maybe having that support in terms of like how to budget, like how to stick to a budget and things like that’.

### Perceptions of belonging and enjoyment of HE

Figure 3 shows that students already felt that they would enjoy university at the start of the programme and that university was for people like them, and that remained the case throughout the programme. Note, however, that there was a significant increase in one measure (‘university is for people like me’, see Table 2) due to changes in the response profile between MS1 and MS2 only. This change is consistent with the programme having made positive changes to students’ perceptions of university but given the already high proportion of students agreeing with the

statement, the change is relatively small. The drop between MS2 and MS3 results in each case is not statistically significant (see Table 2).

The relatively high proportion of students who expressed the view that university was a place for them and for people like them may be driven by their friendship group. Many of the focus-group participants described hearing about university experiences through their friends, e.g.,

'From what I've heard from friends at university, they will come back having had the great time, they come back at Christmas and Easter and they can't wait to get back to university to be with their friends'

or family, e.g.,

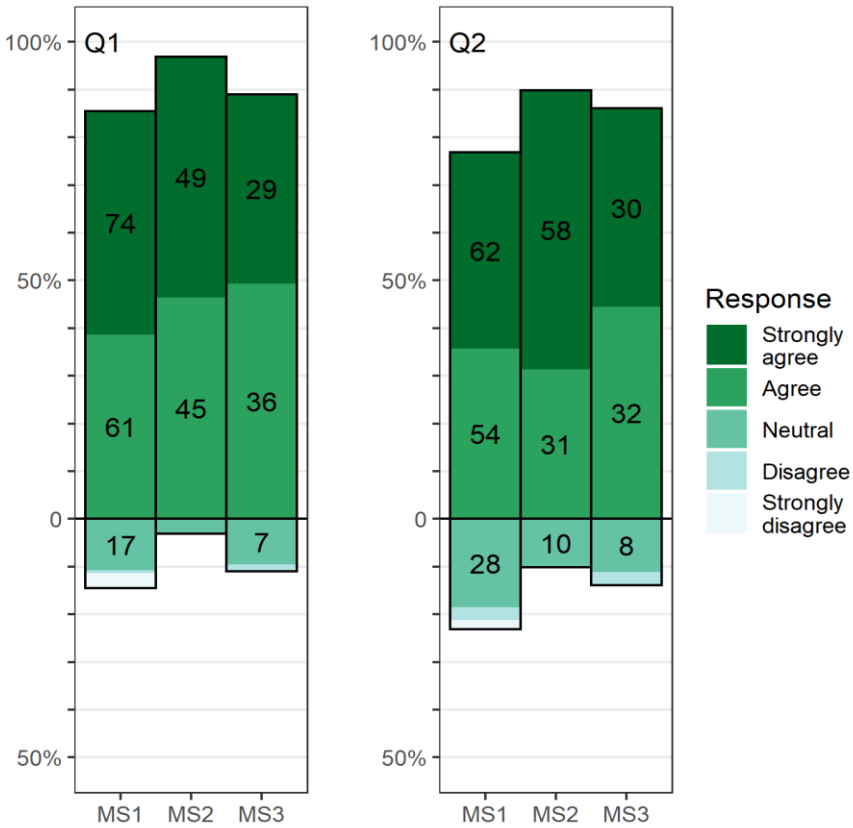
'I have a brother who goes to university and he tells me that there's loads of societies there. So even if ... you don't drink ... you can make friends and still socialise'.

However, even the pathway was acknowledged as having contributed towards knowledge about university life, both in terms of the social as well as the academic side, e.g.,

'It did really help with ... the social sides ... I didn't know ... societies like even existed ... So it was nice to actually like to understand a bit more about uni ... I think it really helped'.

Despite positive views of student life associated with information from friends, family and the pathway, one student was concerned about the prospects of fitting in due to social media posts:

'I mean, I don't know if this is true, but I've seen from [social media] that a lot of people don't make any friends in the first year and that it's especially hard for people like me because I don't go to clubs, I don't drink so, but those activities are a big part of kind of university culture. So, I'm kind of scared about whether I'd be able to find my type of people'.



How much do you agree with the following statements...  
Q1: I would enjoy university  
Q2: university is for people like me

**Figure 3** Diverging stacked bar charts of the responses to the two questions relevant to sense of belonging

## Discussion

Overall, the results showed that the IAG aspects of the programme, at least regarding understanding of applications and funding, were both required and effective in this cohort. In contrast, this cohort did not seem to need any aspect of interventions designed to convince the students that they would enjoy university or 'belong', and the programme was only marginally successful at changing perceptions of affordability of HE.

The survey results support other evidence from the UK (e.g. Gorard, See and Davies, 2012) that shows that changes to aspirations and attitudes towards HE are not critical to widen participation because scores on these measures were very positive, even at the start of the programme. However, focus group data – albeit on a small sample – did highlight that the social side of HE was important; ‘fitting in’ from a social standpoint seemed to be more of a concern than ‘belonging’ *per se*, and that mental well-being and enjoyment of time at university is important. Conversely, knowledge of how to apply for and fund HE (and – albeit to a lesser extent – confidence, or self-efficacy in doing so) had scope for change and was successfully improved in this intervention programme. The importance of IAG has previously been shown (Burgess, Horton and Moores, 2021; McGuigan, McNally and Wyness, 2016; Peter, Spiess and Zambre, 2018; Sanders *et al.*, 2018). However, some forms of information provision have also been shown to ‘backfire’ (Silva, Sanders and Chonaire, 2016) or be ineffective (Phillips and Reber, 2018). A recent analysis (Bowes, 2023b, p. 22), for example, reported ‘little evidence that engagement in Uni Connect has contributed to changes in learners’ knowledge’ (but see Bowes, 2023a). Information, advice and guidance interventions can take several forms and often involve attitude change activities as well as simple information. Here we show that the information provided is welcomed and produces a positive change in knowledge and confidence.

For our intervention, perceived affordability of HE improved only marginally. This suggests that IAG activities may be better targeted at knowledge and practical challenges, as opposed to attitude change (notwithstanding the findings of Silva, Sanders and Chonaire, 2016, which suggested that written facts alone may actually have a negative effect). Aston University, like many UK HEIs, use the ‘NERUPI framework’ (Network for Evaluating and Researching University Participation Interventions: Hayton and Bengry-Howell, 2016) to guide their outreach evaluation work. The first pillar in this framework is knowledge; meanwhile perceiving that HE study is affordable and would be enjoyable fall in the third pillar – ‘becoming’.

These conclusions have limitations. Most notably, the students on our pathway programmes had already made a positive choice



to be on the programmes, so may not be representative of the wider cohort of students that may or may not be considering HE (see e.g. Sanders *et al.*, 2018, who showed larger effects of an intervention in further education colleges vs. schools). Thus, whilst this would not change the conclusion of the importance of knowledge of how to apply and fund HE, a different group may have been less certain that they would enjoy HE, or that they would fit in. It is also possible that it was only the keenest and most committed students who participated in the focus groups and responded to all three surveys. In addition, the intervention programmes started almost 18 months before these students would be due to join HE. Thus, although we can show an increase in confidence of being able to apply for and fund HE, this is not necessarily due to the impact of the programme alone; it is highly likely that their school or college would have also made this information available, although limited data from the focus groups indicate that the pathways helped.

Further limitations include that the findings are specific to the UK context and would not necessarily apply in other contexts, and that data is not yet available on whether the changes that did take place were associated with an actual change in HE participation. In addition, for the measure where we did not observe a change, it is possible that the implementation of this particular intervention was unsuccessful. Nevertheless, our main conclusions regarding the utility of information and the lack of a requirement for change of attitudes and aspirations would still be valid in a UK context. We did not measure changes to attainment in this study. Some researchers have found that aspirations and attainment are associated, although any causal link and its direction is debated.

Our results therefore highlight the importance of practical knowledge and support of how to apply for and fund HE and we would therefore caution against moving towards an entirely attainment-based model of outreach, or conversely an entirely marketing-based approach to recruitment. The increasing dichotomisation of the field into aspiration vs. attainment risks throwing the baby out with the bathwater.

## Acknowledgements

Robert J. Summers was supported to conduct this work by a grant to Elisabeth Moores from The Centre for Transforming Access and Student Outcomes in Higher Education (TASO) as part of the MIOM (Multi-Intervention Outreach and Mentoring) project. We are grateful to Joanne Jones for carrying out the focus groups interviews.

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<sup>i</sup> A UCAS application and personal statement event for the Pathway to STEM occurred in October 2021 and MS2 was sent out immediately afterwards. Students on the Pathway to Healthcare had already attended a UCAS application event.

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