Report:

School's in for the summer: interim findings on the impact of summer schools

November 2023

CONTENTS

1.   EXECUTIVE SUMMARY

Summer schools are a widespread outreach intervention aimed at widening participation in higher education (HE) for disadvantaged and underrepresented student groups. Previous evidence indicates an association between summer school participation and positive attitudes and behaviours related to HE; however, there is a lack of evidence demonstrating the causal impact of summer schools.

To address this gap, the Centre for Transforming Access and Student Outcomes in HE (TASO) conducted a Randomised Controlled Trial (RCT) of HE summer schools, in collaboration with multiple universities and the Behavioural Insights Team (BIT). Applicants to each summer school were randomly allocated either a place at a summer school (the treatment group) or no place (the control group). By comparing outcomes across the groups, we can generate causal evidence on the impact of summer schools.

TASO's first trial evaluated summer schools across eight universities which were delivered online over the summer of 2021 due to COVID-19 restrictions (see previous report here). The second trial, the focus of this report, evaluates face-to-face summer schools that took place across five universities in the summer of 2022.

This report outlines the interim survey findings alongside the implementation and process evaluation (IPE). The behavioural findings, including those relating to attainment and enrolment in HE, will be reported in 2025 when this data becomes available.

Key findings:

- Corroborating the findings from last year's report, it is highly probable that those applying to a university summer school are already interested in attending HE. Of those students responding to the pre-summer school survey, 95% reported being either 'likely' or 'extremely likely' to apply to HE in the future.

- Of the 1,687 students randomised as part of the trial, 33% (n = 553) responded to the post-summer school survey, which assessed:

  - Likelihood of applying to HE

  - Perceived confidence in ability to apply to and succeed at university

  - Perception of fitting in at university

  - Perception of practical barriers to HE, including knowledge of HE and financial support.

- The survey findings indicate that the summer schools may have had a small positive impact on students' perceptions of whether they will fit in at university. This finding was significant at the 90% confidence level. On all other survey outcomes, the summer school appeared to have a null or very minor positive or negative effect. This finding was echoed in the focus groups where students talked about the role of summer schools in building social skills.

- An additional survey was administered in January in line with the UCAS equal consideration deadline, asking students whether they had applied to HE. Of the total trial participants (post-16 age group only), 17% (n = 206) responded to the survey. While this is a small sample, and likely to be highly motivated, the self-reported rate of application to HE was very high in both the treatment and control groups (91% and 93% respectively).

- The qualitative data reveals the difficulty of providing an experience that is both representative of university life and, at the same time, age-appropriate.

2. INTRODUCTION

The demand for places at UK universities continues to increase rapidly; the Universities and Colleges Admissions Service (UCAS) estimates that there could be up to one million applicants in a single year by 2030, an increase of 30% from the current figures (UCAS, 2023a). Despite a steady increase in the number of young people applying to HE, a disparity remains between socio-economically disadvantaged students and their more affluent peers: nationally, application and progression to HE are lower among disadvantaged students than among non-disadvantaged students across all qualification types. Indeed, despite record numbers of students from disadvantaged backgrounds applying to HE, the application-rate gap between the most and least disadvantaged 18-year-olds widened slightly this year compared to 2022 (UCAS, 2023b). Research with students from widening participation (WP) backgrounds attending a university outreach programme identifies a range of barriers to applying to HE, including financial difficulties and feeling 'overwhelmed' (McCabe & Kaya, 2022). It is important, therefore, that HE providers continue to offer activities to support disadvantaged students to overcome such barriers.

Summer schools are typically an on-campus WP intervention involving a range of activities designed to give students an experience of HE, including a residential stay, information sessions, subject tasters and social activities. An evidence synthesis commissioned by TASO (Robinson & Salvestrini, 2020) demonstrates positive correlations between summer school participation and confidence and attitudes towards HE but mixed effects on applications and entry to HE. For instance, a study evaluating Aimhigher summer schools found a positive association between the intervention and increased progression to HE, especially for disadvantaged students, yet an evaluation of another university summer school found only small and non-significant effects on application rates. The review also notes the limited quality of the current evidence, with most existing studies using no comparison group. This type of evidence can only tell us that there is a positive association between summer schools and student outcomes; it cannot tell us definitively that the intervention has an impact (causal evidence). This is because students who participate in summer schools may already be more likely to enrol in HE compared to non-participants, even in the absence of any summer school. We therefore risk overestimating the efficacy of summer schools.

More recently, TASO (2021) collaborated with the Higher Education Access Tracker (HEAT) and found that participation in summer schools is associated with higher KS4 attainment and higher HE progression. Burgess, Horton and Moores (2021) have also found summer schools to be one of the WP activities most strongly linked to UCAS application success (defined as acceptance onto an HE course). However, we lack *causal* evidence that measures the impact of summer schools on WP; we need such evidence given that these interventions are both time- and resource-intensive. An RCT is the most robust method of producing causal evidence: by comparing outcomes for a randomly assigned treatment group that attends a summer school with those of a control group that does not, we can assess the extent to which summer school interventions directly impact student outcomes. An RCT conducted in the US has provided some evidence that summer schools can have positive effects on HE pass (rather than application) rates; however, the sample comprised young people who had recently graduated from high school, 100% of whom intended to progress to HE at the end of the summer (Barnett et al., 2012). The present evaluation focuses on young people who are not as close to HE participation – those either still in secondary school or in their first year of post-16 study. One known UK-based RCT on university summer schools found no effect on participants' likelihood to apply to HE, but the sample size was small and actual application rates were not measured (Bowes et al. 2019, p.57).

To contribute to the evidence, TASO is conducting an RCT on HE summer schools. TASO's first trial evaluated summer schools that took place online in the summer of 2021, due to COVID-19 restrictions. The interim findings for this evaluation showed that the summer schools may have had a small positive effect on self-efficacy relating to HE and a smaller positive effect on self-reported applications to HE, compatibility of HE with social identity, and perception of practical barriers to HE. The second trial, the focus of this report, evaluates summer schools that took place in-person (although some still included online elements) in the summer of 2022. The project is a collaboration between:

- TASO – overall Project Lead, including responsibility for the design and delivery of the IPE

- BIT – the independent evaluator of the impact evaluation (RCT)

- Five universities running summer schools:
  - The University of Gloucestershire
  - The University of Kent
  - The University of Leeds
  - The University of Leicester
  - Nottingham Trent University.

The majority of universities recruited a research assistant/associate (RA), funded by TASO, to support them with their evaluation responsibilities. In other cases, existing staff within the evaluation/WP teams supported the project. Table 1 summarises the key project personnel for each organisation.

Table 1: Project personnel

Organisation	Name	Role and responsibilities
BIT	Dr Patrick Taylor	Principal Investigator and Evaluation QA
	Dr Laure Bokobza	Evaluation Manager
	Pujen Shrestha	Data Analyst
	Ruth Persian	Evaluation QA
TASO	Dr Helen Lawson	Research Manager. IPE Lead and responsible for the day-to-day management of the study.
	Sarah Chappell	Research Manager. RCT Lead and responsible for supporting the team in the day-to-day management of the study.
	Dr Eliza Kozman	Deputy Chief Executive. Responsible for overseeing the implementation of the study.
University of Leeds	Liz Hurley	Project Lead at the University of Leeds. Responsible for implementing randomisation and data collection.
	Blagovesta Tacheva	RA supporting data collection and analysis.
University of Leicester	Dr Charlotte Barratt	Project Lead at the University of Leicester. Responsible for implementing randomisation and data collection.
	Meghann Jones	RA supporting data collection and analysis.
University of Kent	Amy Burt	Project Lead at the University of Kent. Responsible for implementing randomisation and data collection.
	Kritty Treebhoohun	RA supporting data collection and analysis.
University of Gloucestershire	Liz Gray	Project Lead at the University of Gloucestershire. Responsible for implementing randomisation and data collection.
	Hannah Kent	RA supporting data collection and analysis.
Nottingham Trent University (NTU)	Laura Hope	Project Lead at NTU. Responsible for implementing randomisation and data collection there.
	Peter Cassidy	Co-project Lead.

Of the five universities involved, three deliver summer schools that target students under the age of 16 (Year 9 or 10), and three run summer schools that target students over the age of 16 (Year 12 or first year of post-16 education).[1] To participate in the RCT, universities needed to receive a higher number of summer school applications than they had places available, allowing places to be decided by randomisation. Those randomly allocated to the treatment group received a summer school place, and those randomly allocated to the control group did not. Both groups of students were asked to complete surveys before and after the summer school to capture their attitudes and confidence regarding HE.

This report focuses on the interim outcomes from the surveys administered, alongside findings from the IPE, which involved qualitative interviews with students. Data on enrolment in HE (our primary outcome) will not become available until 2025 and will be included in the final report. This interim report provides:

- An outline of the methodology including the impact evaluation and IPE

- An outline of the key findings from the interim survey data and IPE

- A discussion of the findings and directions for future research.

For more details on the RCT methodology, analytical approach and findings, please see the accompanying analysis report.

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1   One participating university ran two summer schools, one for pre-16 and one for post-16 students.

3. METHODOLOGY

a) Impact evaluation – RCT

Intervention

This study evaluates summer schools delivered by participating universities for students in either pre-16 or post-16 education. While each summer school has specific individual characteristics (see Appendix I for full intervention descriptions), all share the same broad aims and involve similar activities related to preparation for HE. All summer schools took place between June and August 2022.

Methodology

On application to the summer schools, students were informed that the host university was participating in a research study evaluating summer schools and were told what this would entail. Consent to participate in the research was also obtained at this stage. Staff at the participating universities compiled a list of eligible candidates, namely, those who met WP criteria. Eligible applicants to each summer school were then randomly assigned to either the treatment or control group. Those in the treatment group were offered a place at the summer school and those in the control group were not. A full breakdown of demographic data and eligibility criteria and an explanation of the randomisation procedure are included in the analysis report.

Counterfactual

To establish the impact of summer schools on student behaviour, the analysis compares average outcomes across the treatment and control groups. The counterfactual in impact evaluation is commonly defined as 'business as usual'. Defining the counterfactual for the control arm of an impact evaluation is critical to the ability to draw causal conclusions. In this case, business as usual means that the students continued as they were and did not receive the same treatment as those assigned to the intervention group. However, we recognise that it is not possible to isolate the control group from activities that occur outside the summer school intervention (for example, engagement with other outreach activities). The only variable for which the trial controls is attendance at the summer schools involved in this trial.

Given that the trial participants actively applied to a summer school, it is reasonable to assume that those assigned to the control group will apply to other summer schools and/or participate in other outreach activities. This may also be a form of compensatory rivalry, in which those not receiving the intervention actively decide to seek the benefit of the intervention independently, in this case, by applying to alternative summer schools. To minimise this threat to the internal validity of the trial, we will capture, via HEAT, whether trial participants had participated in any additional outreach activities as part of the final report.

Sample

Of the five universities involved in the trial, all were oversubscribed for summer school applications and therefore participated in the RCT. Two of these universities ran multiple subject-specific summer schools.

The size of the treatment and control groups was determined by the number of places available in each summer school after removing students guaranteed a place (as decided by the university) and those who did not consent to be involved in the research, although these students remained part of the randomisation to ensure that opting out did not inhibit access to places. Table 2 shows the final numbers in the treatment and control groups for each university:

Table 2: Total number of participants in RCT

Summer school	Target group	Treatment no.	Control no.
University A	Pre-16	67	76
University B (five different subject summer schools)	Post-16	263	261
University C (five different subject summer schools)	Post-16	194	450
University D	Post-16	30	36
University D	Pre-16	41	113
University E	Pre-16	66	90
Total		661	1026

Outcome measures

The primary outcome measure will be whether the individual enters HE in the 2023/24 academic year, with the secondary outcome measure whether they choose to study at the host university. We will not be able to obtain this data until 2025; therefore, this report covers the exploratory outcomes obtained by the survey measures, in addition to the qualitative findings. The survey questions are included in Table 3 and were devised by TASO by adapting existing scales (see analysis report for further details). Survey 1 was administered to all students both before and after they attended the summer school, and Survey 2 was administered in January 2023 to post-16 students only, to align with the equal considerations UCAS application deadline.

Table 3: Outcome measures

Outcome measure	Data to be collected	Aggregation of items	Point of collection	Pre- or post-16
EXPLORATORY 1 (PROXIMAL): Application to university	Survey 2: Have you applied to university? Binary: yes/no	NA	After endpoint (January 2023)	Post-16
EXPLORATORY 2 (PROXIMAL): Likelihood of going to university	Survey 1: How likely are you to apply to university? Likert: 7-point 'Extremely likely to extremely unlikely'	NA	Baseline After endpoint (July-Sept 2022)	Both
EXPLORATORY 3 (PROXIMAL): Likelihood of progressing to academic study post-16	Survey 1: How likely is it that you will study at school or a sixth form after you've finished Year 11? Likert: 5-point 'Extremely likely to extremely unlikely'	NA	Baseline After endpoint After endpoint (July-Sept 2022)	Pre-16
EXPLORATORY 4 (MEDIATOR): Self-efficacy relating to HE	Survey 1: 1. How confident are you that you could make a successful application to university? 2. How confident are you that you could succeed at university? Likert: 5-point 'Extremely confident' to 'Not confident at all'	Mean average	Baseline After endpoint (July-Sept 2022)	Both
EXPLORATORY 5 (MEDIATOR): Compatibility of HE with social identity	Survey 1: How much do you agree with the following: 'University is for people like me'? Likert scale: 5-point 'strongly agree to strongly disagree'	NA	Baseline After endpoint (July-Sept 2022)	Both
EXPLORATORY 6 (MEDIATOR): Perception of practical barriers to HE	Survey 1: 1. How confident are you that you could afford to go to university? 2. How confident are you that you know how to apply to university? Likert: 5-point 'Extremely confident' to 'Not confident at all'	Mean average	Baseline After endpoint (July-Sept 2022)	Both

b) Implementation and Process Evaluation (IPE)

An IPE was conducted to complement the findings from the impact evaluation. This section reports on the IPE's aims, sampling, data collection and data analysis. The findings from the IPE help to explain the impact evaluation outcomes. While the impact evaluation aims to establish whether the intervention does or does not work, the IPE seeks to demonstrate how and why this is the case (identifying the mechanisms of change). The aim of the IPE, therefore, is to understand how the summer school was implemented and to investigate the barriers and facilitators to implementing and delivering the summer schools as intended (termed 'fidelity').

An intervention Theory of Change was developed (see Appendix II) by the research team, adapted from the previous online summer school evaluation for face-to-face summer schools. The broad aims, assumptions, activities and outcomes were consistent across the five participating universities. The overarching IPE research questions (RQs) stemming from the Theory of Change are:

- RQ1: How are the summer schools implemented? What were the barriers to and enablers to implementation?

- RQ2: To what extent did participants engage with the intervention in line with the intervention's aims and assumptions?

- RQ3: How was the quality of the intervention perceived by the intervention's implementers?

- RQ4: What are the perceived benefits of the intervention according to the intervention implementers?

- RQ5: Were students' perceptions of the intervention's impact and benefits in line with the original aims and assumptions?'

Semi-structured focus group and interview schedules were developed and agreed collaboratively across all providers with TASO's input (see Appendix III for focus group and interview schedules). To aid triangulation, data were collected from multiple sources across the intervention. Focus groups and interviews were conducted with students in both control and treatment groups. Intervention implementers (staff and student ambassadors) were invited to participate in the evaluation through focus groups, surveys and interviews. One university also surveyed parents, carers and teachers about their perspectives on the impact of the summer school on their children/pupils. In the main, pre-treatment data collection with students was conducted online, and post-treatment focus groups were held on the last day of the summer school. Focus groups with the control group were held online, although universities had mixed success in securing student attendance.

Semi-structured focus group and interview schedules were developed and agreed collaboratively across all providers with TASO's input. The schedules contained a core set of questions that were also reviewed for content and applicability to the evaluation by members of the research team. In some cases, universities included additional questions pertinent to the local context for internal evaluation purposes. In addition to focus groups, universities were encouraged to employ further data collection methods to support triangulation. University C conducted observations of certain sessions to gather information on student engagement, confidence and interactions. The observations were spread across the day to enable changes to be identified. In 16 sessions across three days, observers recorded their impressions of 'engagement', 'interaction with academics', 'interactions with peers' and 'interactions with resources/materials'. In addition, students completed confidence trackers which monitored rises and falls in confidence during the day. Students recorded their confidence levels on a graph and were asked to add notes on the factors influencing changes in their confidence levels. These were mapped by day, strand and ethnicity for analysis. Further details can be found in Appendix IV.

University E also conducted observations of some sessions but the data collected did not add value to the evaluation, perhaps due to the lack of experience of the data collectors.

Delivering the intervention with fidelity

The specific make up of each summer school varied between universities but there were common elements. The summer schools were delivered by a team of specialist staff. Outreach and widening participation (OWP) staff have expertise in curriculum development and the delivery of summer schools. They developed the content and ran the programmes, supported by student ambassadors, students and academic staff. The programmes were residential, of differing durations, and included a mix of general talks (information, advice and guidance), subject tasters, campus tours and social events.

According to the researchers in the field, the implementation teams reported that the summer schools were delivered with fidelity. This means that the programme content and sessions were executed as originally planned and by the designated implementers. However, it is important to note that this assertion is not based on as full a picture as we would like. Without more detailed evaluation research, it is not possible to state with certainty that all implementers delivered the activities to the required quality across the programme, and it is likely that the experience that students received varied depending on the implementer. This may happen even though, for example, student ambassadors received training. For example, one student ambassador took the initiative to ask whether they could show their group inside certain campus buildings, after finding they had been closed during the campus tour due to graduation ceremonies. The ambassador commented:

I was allowed to go in all three buildings. And then when I did go in, you know, I did find that students were actually more engaged inside the buildings rather than outside. They don't like the idea of just having to look at a building, but going inside and seeing actual students study in the library gave them kind of a feel of how it would be like to study at university.

(Student Ambassador, University C, post-treatment)

The success of the intervention rests somewhat on participants being willing and able to engage with activities. University D (pre-16) experienced a few incidents where students exhibited hostile attitudes towards their student ambassador, and more senior staff were required to step in to resolve the situation. The researchers reported in the post-summer school interviews that they also felt uncomfortably challenged by some of the Year 10 students:

> *...[one ambassador] in the Year 12 group, she got a handwritten thank you note for being such a great ambassador from the students. But then the Year 10 group made her cry...From constantly being difficult, complaining, rolling eyes, having to thank them for doing the bare minimum, such as not complaining for about 10 minutes.*

(Student Ambassador, University D).

The challenges experienced at University D were perhaps exacerbated because the student ambassadors were less experienced than in previous years as it was the first in-person residential for three years. There was also a level of resistance and disquiet among some students at the levels of monitoring by staff. At University D, the younger cohort had less free time than the post-16 students, an issue which was discussed during the post-treatment focus groups. Furthermore, some participants had to be persuaded to continue with the summer school. Feedback from both staff and ambassadors indicates that they felt they continually had to encourage students to engage, and their perception was that few Year 10 participants seemed to know how to function effectively in a social setting. One staff member suggested that COVID-19 lockdowns may have impeded the development of their social skills but this is conjecture; we have no pre-COVID-19 pandemic data on face-to-face summer schools with which to compare findings.

The above illustrates that delivering the intervention with fidelity relies to some degree on a mix of implementers' knowledge and skill, and participants' willingness to engage. These are mechanisms of change which are currently not made explicit in the intervention's core Theory of Change.

Data analysis

Four steps were followed in the data analysis process:

1. Transcription and familiarisation with the data
2. Coding
3. Developing and applying a working analytical framework matrix
4. Interpreting the data

The analysis of data from focus groups and interviews employed a mix of inductive (allowing concepts and perceptions of experience to emerge from the data) and deductive (using existing knowledge and the RQs to guide the analysis) coding. In the first instance, the recordings were transcribed and the responses mapped manually to broad themes. The data were subsequently coded in NVivo by the person conducting the research using a line-by-line approach. The use of an inductive approach to analysis in coding the data allowed themes to be developed from the experiences and views of the participants. To increase credibility, the researchers involved not only met bi-weekly in online meetings (and one in-person meeting) with TASO to discuss emerging themes, but also used an online platform to discuss any issues with the coding and to gain consensus on meaning. Quotations from participants across all the participating summer schools have been included to provide evidence of particular themes and demonstrate both congruent and contrasting perspectives; where possible, the views of staff, student ambassadors and parents have been included.

By reviewing themes and making connections within and between categories, the project team created a mutually agreed overarching coding framework. Sub-themes were added to the existing framework to capture important data fragments; these emerged from focus group discussions at the individual providers and reflected local contexts and experiences. The IPE results section is organised according to the themes identified.

Sample

Table 5 details the IPE sample size for each university, split by students attending and summer school staff.

Table 5: Sample of participants for the IPE for each university

University	Pre- or Post-16	No. of student participants			Student ambassadors	University Staff
		Pre	Treatment	Control		
University A	Pre-16	0	21	0	0	18 (16 completed a survey, 2 participated in interviews) In addition to university staff, 20 parents and 16 teachers completed a survey
University B	Post-16	8	25	1	0	0
University C	Post-16	6	3	6	0	4
University D	Pre-16	9	23	5	1	3 (1 responsible for designing the summer schools and 2 external speakers who delivered Wellbeing and Academic sessions)
University D	Post-16	6	16	3	2	
University E	Pre-16	6	22	0	9	6
Total IPE student sample		35	110	15	12	31

4.   FINDINGS

a)   Impact evaluation – RCT

Due to attrition, the analysis of survey outcome data is based on a smaller sample than those randomised, as detailed in Table 6. Only a small proportion of the total sample at least partially completed Survey 1 and Survey 2 (33% and 17% respectively) and the findings are, therefore, likely to reflect a highly motivated sample of students.

Table 6: Summary of survey sample.

		Treatment	Control	Total
Number of Students	**Randomised for Survey 1**	661	1,026	1,687
	Analysed for outcome Survey 1 (no. and % of sample)	341 (52%)	212 (21%)	553 (33%)
	Randomised for Survey 2 (post-16 sample only)	487	747	1,234
	Analysed for outcome Survey 2 (no. and % of sample)	96 (20%)	110 (15%)	206 (17%)

Notes: We take the Survey 1 sample to be the sample of students who answered at least one of the questions in that survey. The Survey 2 sample is limited to the post-16 summer schools, as survey participants needed to be old enough to have applied for HE at the time of the survey.

Descriptive statistics:

Table 7 presents the mean and standard deviation for each survey outcome, broken down by allocated group. In general, it appears that both the treatment and control group performed similarly, with the treatment group responding more positively across four outcomes and the control group responding more positively on four outcomes.

A more detailed breakdown of each outcome by the responses on the Likert scales can be found in the accompanying analysis report.

Across the two groups, students were generally more likely to respond positively (rather than neutrally or negatively) to the survey questions. This is probably because students who apply to a university summer school are more likely to have a favourable attitude towards HE, a notion supported by the baseline (pre-summer school) survey results in which 95% of applicants reported that they were either 'likely' or 'extremely likely' to apply to HE in the future. We can also see that among the post-16 sample, the self-reported rate of application to HE by January 2023 was very high in both the treatment and control groups (91% and 93% respectively).

Table 7: Mean outcome scores by group

Outcome	Treatment	Control
	Mean (SD)	Mean (SD)
Likelihood of progressing to HE (7-point Likert scale) (N = 551)	6.44 (0.94)	6.46 (0.97)
Likelihood of progressing to academic study post-16 (5-point Likert scale) (N = 128)	4.47 (0.77)	4.62 (0.81)
Self-efficacy relating to HE (5-point Likert scale) (N = 545)	3.98 (0.78)	4.00 (0.72)
Compatibility of HE with social identity (5-point Likert scale) (N = 528)	3.89 (0.89)	3.72 (0.94)
Perception of practical barriers to HE (both survey questions together; 5-point Likert scale) (N = 543)	3.20 (0.99)	3.04 (0.99)
Perception of financial barriers to HE (5-point Likert scale) (N = 546)	3.19 (1.0)	3.03 (1.0)
Perception of knowledge barriers to HE (5-point Likert scale) (N = 548)	3.63 (0.96)	3.55 (1.05)
Applied to HE (binary yes/no) (N = 206)	0.91 (0.29)	0.93 (0.26)

Notes: Sample of students (N) per outcome included in brackets above. Survey responses for the perception of practical barriers were split between financial and knowledge barriers in order to better understand the disaggregated effects of the two.

Analysis of outcomes:

Regression analysis was conducted to estimate the effects of the summer school on each survey outcome. For the full analytical strategy and findings, please see the analysis report.

Table 8 presents the estimated average effects of the summer schools for each outcome. The likelihood of progressing to HE was measured using a 7-point Likert scale; all other Survey 1 outcomes were measured using a 5-point scale. Whether or not a student reported having applied to university by January 2023 (the Survey 2 item) was measured using a binary 'yes/no' question (coded as 1 for 'yes' and 0 for 'no').

The estimated effects are based on the main model pre-specified in the research protocol. For all outcomes, this includes the survey responses as well as variables which may impact the effect of the summer schools. These are known as covariates and include participant characteristics such as sex, ethnicity and Free School Meal (FSM) status, as well as the summer school applied to.

The results can be interpreted as follows: The mean reported likelihood of progressing to HE in the control group is 6.46 on a 7-point Likert scale. The estimated effect size in Model 1 is -0.05, which means that on average, and controlling for other variables in the regression, students in the treatment group scored 0.05 points lower on that scale (demonstrating a lower likelihood), but this difference is not statistically significant. The mean reported compatibility of HE with social identity in the control group is 3.72 on a 5-point Likert scale. The estimated effect size in Model 1 is 0.31, which means that on average, and controlling for other variables in the regression, students in the treatment group scored 0.31 points higher on that scale (demonstrating higher agreement), and the difference is statistically significant at the 10% level.

The results suggest that the summer schools may have had a small positive effect on four of the survey outcomes and a small negative effect on three of the survey outcomes. One directionally positive result – the compatibility of HE with social identity, which asks students whether they believe university is for people like them – is significant at the 10% level, indicating that we can be more confident of a positive result. The remaining estimates are not significant at the 5% or 10% levels. While this may be due in part to the small size of the sample, we cannot conclude with sufficient certainty that the results represent the true effects of the summer schools.

Effects are also presented as standardised effect sizes to facilitate comparisons between outcomes and with other studies.

Table 8: Estimated effects for each survey outcome

Outcome	Estimated effect (score on scale)	Standard error	Standardised estimated effect	P-value
	Linear regression results			
Likelihood of progressing to HE (7-point Likert scale) (N = 541)	-0.05	0.17	-0.06	0.74
Likelihood of progressing to academic study post-16 (5-point Likert scale) (N = 119)	-0.25	0.26	-0.32	0.35
Self-efficacy relating to HE (5-point Likert scale) (N = 536)	-0.10	0.14	-0.13	0.49
Compatibility of HE with social identity (5-point Likert scale) (N = 519)	0.31[+]	0.16	0.34	0.06
Perception of practical barriers to HE (5-point Likert scale) (N = 534)	0.01	0.18	0.01	0.95
Perception of financial barriers to HE (N = 537)	0.03	0.18	0.03	0.88
Perception of knowledge barriers to HE (N = 539)	0.02	0.17	0.02	0.90
	Logistic regression results [2]			
Applied to HE (binary yes/no) (N = 203)	–	–	–	–

Notes: Sample of students (N) per outcome included in brackets above.
 Standardised estimated effect is calculated as Hedge's *g* for linear regressions and Cohen's *h* for logistic regression.
 'Likelihood of progressing to academic study post-16' was computed for the pre-16 sample only.
 'Applied to HE' was computed for the post-16 sample only.
 All other effects were computed for the combined pre- and post-16 sample.
 + p<0.1, * p<0.05, ** p<0.01, *** p<0.001

2   We use a logistic regression for 'Applied to HE' as it is a binary outcome ('yes' or 'no'). The results are not reported here because some covariates (for instance, which university summer school was attended) are categorical variables with many values. This can create a perfect separation in the outcome variable – within each category, such as an individual summer school, there are only respondents who answered 'yes'. We report results from the linear specification and the logistic regression model with no covariates in the analysis report, which shows a small non-significant negative effect (more students reported that they had applied to HE in the control group).

It is important to look at the 95% confidence intervals alongside the results above. These are plotted in Figure 1 which visualises the standardised effect sizes for the survey outcomes (Hedges' *g*). Hedges' *g* provides an effect size for a comparison between two means, in this case, between the treatment and control groups. Hedges (1981) suggested that 0.2 be considered a 'small' effect size, 0.5 a 'medium' effect size and 0.8 a 'large' effect size. The largest effect size is for the compatibility of HE with social identity, which shows a small to moderate effect size of 0.34.

The confidence intervals, represented by the small turquoise dots, show the range of values that we can be 95% confident contain the true effect of the summer school (i.e., the true difference between the treatment and control groups). All of the confidence intervals are reasonably wide and cross zero; this means that the results could be consistent with positive, negative or no effect of the summer schools. The confidence intervals are particularly wide for 'likelihood of progressing to academic study post-16', a question only asked of pre-16 students, a much smaller sample. However, we see a clear positive trend for 'compatibility of HE with social identity': nearly all the confidence interval is on the positive side of the scale. We can therefore be more confident that the summer schools had a small to moderate positive effect on this outcome – students' perceptions of fitting in at university.

Figure 1. Standardised estimated effect sizes for the survey outcomes with 95% confidence intervals
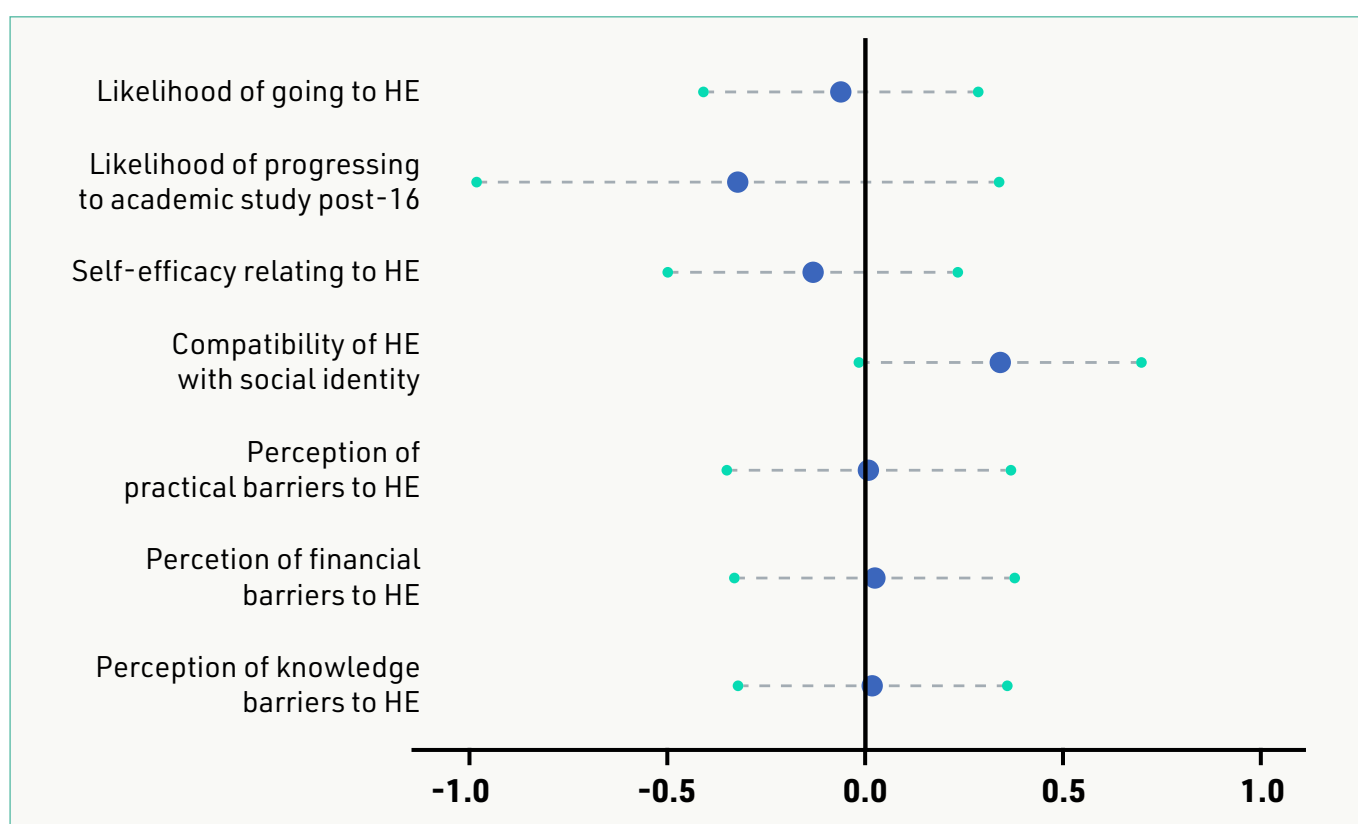
b)   IPE

This section outlines the findings from the interviews and focus groups with students, those involved in delivering the summer schools, and parents. The findings are captured under four key themes.

Participant motivations and expectations

Motivations for applying to a summer school differed among students, with some applying due to external drivers, such as school, family or friends, and others applying as a result of individual impetus. The students who apply of their own accord tend not to have sources of information or advice from which they can draw, such as family or school, and are most likely to be the first in their family to attend HE.

I never thought of ever coming to university, because my parents are old, and they're old-fashioned. If they don't go, I don't go. So, no one in my family has actually been to university. I want to do a summer school, because I spotted an opportunity to see what it was like and see if I wanted to do it.

(University D, pre-16)

Maybe the teachers have not spoken about university as an option for them, perhaps because the teachers already predicted that they might not pass their GCSEs. But a summer school is giving students the opportunity to think 'Actually, I could do this'.

(Staff interview 5, University E)

In contrast, some students attend schools where HE is an expected progression and are exposed to a variety of outreach events:

I feel like, especially at my school, you go there and it's like they expect everyone to go to university afterwards ... Our school really pushes us into university. You can tell they're, like, 'Go to university!' So we have loads of prospectus guides and we had a Higher Education Fair.

(University B, pre-treatment)

To be honest, like, our school kind of just motivates everyone to, like, apply for them and then I have, like, a group of friends that are interested in doing medicine, so we kind of all applied for it.

(University C, pre-treatment)

For students who have no immediate sources of information to draw from, school may be the key, or only, means of being made aware of a summer school, as the comment below demonstrates:

My parents don't really know about it, so I have to do all the research by myself. It differs because I'm from a different background, we only came to this country recently ...My teacher one day sent an e-mail saying there's summer school available but if my friend hadn't told me about it, I would've never applied to it because I didn't, don't even know what a summer school is.

(University B, pre-treatment)

Some students applied because they had specific requirements of the summer school, for example, learning how to make a successful application or what universities are looking for, gaining information about the accessibility of the campus, easing anxiety about starting HE or deciding whether they 'want to move away or stay at home' and helping 'make my mind up' (University B, pre-treatment).

Although motivations may differ among students, all arrive with expectations of what they want to experience, a key reason being to facilitate informed decision-making. Implementers also see this as the main purpose of the intervention:

I think the summer school is for students who are maybe undecided or feel like they don't know enough about what university would be like, or feel like they don't have the confidence that they could succeed in that environment. All of those types of students, who are also WP students. That, for me, is what a summer school is about. Taking those students and moving them to a place where they feel confident and where they have the skills to apply and to transition and to thrive.

(Implementer, University D, post-summer school)

A general introduction to HE

Many students were keen to gain direct experience of what HE is like and 'to actually [be] there to explore the university' (University B, pre-treatment):

Knowing what the university can offer, other than the thing I've got in my mind.

(University B, pre-treatment)

I wanted to know what being on a university campus is like outside of school trips. Because we have been to the university before on school trips but we don't really get to know what it is like. We do certain workshops, but I feel like we are not experiencing everything we could with that university.

(University D, pre-treatment)

Students in the control group voiced similar aspirations:

I wanted to see how life in university is because, as I said, I don't have any way of knowing about it through other people.

(University D, control group)

I wanted the experience and I think it would have been quite a good experience to take part in, because we haven't really had that many talks or anything with universities before. I've never been to a university campus so I just thought it would be a way to get used to my surroundings, and get a bit of an idea of what life would be like at university.

(University D, control group)

A comment from a staff member affirms the notion that a summer school may be the first time a student has had the opportunity to set foot in a university or on campus:

Quite a lot of them had heard about university, but did not know what the university does or what universities offer or what universities even look like. Most of them haven't actually seen one. They've just heard of the word, but they haven't put the word and the physical campus together.

(Staff interview, University E)

Knowing what to expect was a recurrent theme. As one student put it, 'It's about knowing what university is like now, instead of not knowing. Because I'd rather know than not know. And then I can make that decision' (University E, post-treatment). Many students saw the summer school as a way of familiarising themselves with the reality of HE:

Most of the nerves are around going to a new place. Like moving up to secondary school. You don't know where anything is. Everything is like a giant maze to you. But getting to know where things are and how it is placed and how things work. It is so much nicer, because then you physically know how that is going to work and how that is going to help you move forward when going to that place.

(University D pre-treatment)

It's kind of just to get some insight into how university life could be. And just to really see, like, if it is for me and if it is a journey I want to go down and things like that.

(University C, pre-treatment)

For others, it was an opportunity to discover whether the location was right for them:

I'm planning to apply outside London because currently I live in London and I feel like if I explore outside, like a place like [name of city], I can get to know more about the university, and it's a great chance to find out more about [name of city].

(University C, pre-treatment)

The residential aspect is regarded by universities as a particularly important element of summer school. Participants experience what it is like to be in student accommodation, to be with people they do not know and, in some cases, to be given a level of independence. As one implementer commented:

There's so much importance around the social element and the kind of independent skills that they're going to be gaining and just visualising themselves as potential university students and seeing role models who are similar to themselves, who may come from similar backgrounds, having made that journey.

(Implementer, University A)

The social side to HE

Linked to the importance of the residential experience is the opportunity to socialise offered by face-to-face summer schools. A few students said that they had applied specifically to develop their social skills and to get used to meeting new people. It may be assumed that students' eagerness to experience unfamiliar social settings is attributable to the loss of opportunities resulting from restrictions imposed during the COVID-19 pandemic. Indeed, some students talked about the negative impact of the pandemic on their mental health and mentioned socialising and opportunities to meet people as desirable aspects of the summer school which they hoped would increase their confidence that they would fit in and cope with being independent. However, there is no pre-COVID-19 data available that would enable us to compare students' social confidence before and after the pandemic. For those students whose social anxiety or mental health difficulties make them unsure whether HE is for them or whether they will be able to make friends, attending a summer school enables them to test the reality of being away from familiar people and surroundings:

I struggle with severe anxiety, and I wanted to try something out of my comfort zone, and it kind of kills two birds with one stone with it being at a Uni.

(University C, pre-treatment)

With suffering with mental health, sometimes it can be hard to apply for such things. But I have done myself proud with applying.

(University C, pre-treatment)

Nervousness around meeting new people was also mentioned by students in the control group:

I am nervous about meeting people. But I think if I had gone [to the summer school] I would understand it a bit more, so it might have calmed my nerves.

(University D, control group)

After the intervention, the majority of students reported that they had gained the general introduction that they sought to help them decide on their next steps and that the experience had helped ease their concerns about socialising and meeting new people. For one student, finding out about the clubs and societies available 'helped to ease my worries' (University B, post-treatment). Others commented:

It gives you a taste of what university is like, study-wise, facility-wise, and other things like that. So that I know that it's much easier to make a big decision of which university I'm going to go to.

(University E post-treatment)

I think seeing what university was like has given me more confidence. It's less of an unknown and it's more now I know what's going to happen and I'm more prepared for it.

(University C, post-treatment)

Moreover, some students found talking to people and making friends easier than they had thought and appreciated the social aspects of summer school:

I think that the social activities were more useful for me, because I wouldn't say I was a very sociable person and it's definitely given me a chance to get to know new people and to hang out with different people.

(University D, pre-16, post-treatment)

Yes, we just got fun and games, which I loved, it was really lovely. It helped us make friends as well ...We call ourselves 'family' now, in my flat. It's been so nice.

(University D, post-treatment post-16)

Others commented:

...I don't feel like I'm alone anymore. It's like, when I came here, I wanted to go home. I was so anxious to be here. Now I don't want to leave.

(University D, post-treatment)

It's helped me have more confidence in myself. Meeting people has made me feel more confident coming.

(University E, post-treatment)

This change in levels of confidence was also picked up by student ambassadors at University E, one commenting that they 'loved the fact that they change, even in two days'. Another commented:

At the beginning of the session, they were quite shy, they weren't really talking. And then, by the end, you know, they're pretty much giving their own speech and they stood up and talked...It's so nice to see what just within an hour, how much of a difference it can make.

(Student Ambassador, University E)

Some students at University C felt that they had more opportunities to relax and be sociable when they were not 'being watched 24/7':

I think that was when a lot of people loosened up a bit and we were able to talk and make friends with people. And I think that that part is the important part. As in, when you get to uni because the course could be similar everywhere, but it's all about the atmosphere of when you fall into a group of people and I do feel like there was a good atmosphere.

(University C, post-treatment)

Implementers at University A view the social aspect of the residential as instrumental to students' sense of self-belief that university may be for people like them. During the summer schools, staff and student ambassadors in some of the universities felt that some students were finding it challenging to mix with people they did not know, but that students' ability to make friends and engage with new people strengthened over the summer school period:

I think there was definitely an increased confidence...We saw handfuls of students who, on day one, weren't talking to anyone, and by day four, were leaving with friends that hopefully will, you know, will continue those friendships for months, if not years to come.

(Implementer, University A)

The student ambassadors played a key role in the social aspect of the summer schools. Campus tours led by the ambassadors were particularly appreciated by many participants. On these tours, participants learnt about different social spaces, such as the Students' Union, accommodation, the gym and sports hall, and also had the opportunity to ask about clubs and societies. One student spoke about how the 'honest' campus tours given by student ambassadors increased their positive attitude towards that particular university. Others appreciated hearing about undergraduates' and ambassadors' personal university journeys and valued the opportunity to ask them questions, as they found them more approachable or felt that content delivered by university students and student ambassadors was more informative and useful in demystifying certain aspects of HE:

It [the campus tour] was good because we had one student ambassador with us as well, so we got to talk to them and I found out more information.

(University B, post-treatment)

Ambassadors were also able to talk to students, when appropriate, about more sensitive topics, such as mental health. One ambassador was able to provide some reassurance to students by drawing on their own experiences:

I was, when appropriate, comfortable to share with some of the students that I have severe anxiety. And, you know, you wouldn't know it from looking at me because I'm extroverted, because I'm confident, because I'm willing to stand in front of a crowd. But I think that showed the students that, even those with mental health issues, whilst they are very concerning, and they can really feel quite challenging and feel like they might be holding them back – there's a way to manage them in different ways that will allow them to take their own path.

(University A, student ambassador, post-treatment)

Some students saw financial concerns as a significant barrier to progressing to HE. However, such concerns seemed to differ between providers. In contrast to previous project findings, few participants in the treatment group at University B cited the financial costs associated with attending university as a potential barrier to attending HE. Among students who were worried about finances, the concerns raised ranged from the cost-of-living crisis in general to specific concerns related to religious restrictions on borrowing. A few students at University D pondered the benefit of a degree and whether it was worth the financial cost. Comments included:

I think money would be a big thing of it because of how hard you would have to work to be able to pay off, say, that student loan you take out or just being able to go there. And then being able to afford the food.

(University D, post-16, post-treatment)

The student loans. Paying rent. All of that is terrifying. I feel like I'm so behind in my understanding of taxes, and debts.

(University D, post-16, post-treatment)

At University A, due to a previous session over-running, there was no time for the planned talk on student finance. The student ambassador was therefore a key source of information for some students:

The ambassador was talking about student loans, and they were talking about the student loans you can take out and how you can pay it back and you don't have to pay it until you are financially stable and you have enough income and, like, that helped reassure us that, like, it was possible.

(University A, post-treatment)

Opportunities for informal conversations with student ambassadors seem to contribute to students' ability to make an informed decision on HE. One student at University E commented:

If you asked a question, they'd always have an answer, or if they didn't know they'd find out an answer for you... I spoke to [a student ambassador] about scholarships, and they were saying they gave us a talk. And I've seen all the stuff that will include showing us all the options that we had.

(University E, post-treatment)

The different expectations and experiences of students are captured in an observation by a staff member at University E:

There isn't one right way to have a student experience. Everyone can have their own challenges and issues and there won't be, in my opinion, a perfect university experience. It's very much about navigating it in a way that suits you. The residentials really give that insight, particularly when you have lots of different staff members, lots of different academics and lots of different student ambassadors supporting the event.

HE and academic life

Students were keen to find out more about what courses they could study, subject areas and university-level teaching.

I'm not too sure what I want to do, so that is a little nerve-wracking because I want to make sure it's the right choice and I don't want to make the wrong choice.

(University B, post-treatment)

Knowing more about the subject that I am going to take and just seeing if it's really for me and if I do really want to take it in the future.

(University C, pre-treatment)

Across the project, most students reported that they felt better informed about ways of learning in HE, particularly regarding lectures and the need for independent learning. Their comments highlighted that they were now aware that HE involved independent study, that lecturers 'are not like your teachers. They're not going to give you everything; you have to help yourself as well' and that 'you actually have to take your notes yourself. You're not told what to do' (Students, University B and D, post-treatment). For some, this awareness increased their confidence:

I didn't know the lectures were going to be in everything, so after having that taste, it made me feel more confident.

(University B, post-treatment)

For others, the tasters made them question 'Do I want to do that? Because I know it is going to be a lot of work and a lot of writing' (University D, pre-16).

The taster sessions worked more successfully for some students than others, and perceptions of success seem to be framed by student expectations. Indeed, one student ambassador commented:

I feel like, because they came in with an idea [of what they wanted], when they don't get this they feel, like, 'Oh, no, it wasn't the experience that I wanted'. So they're not ready to be open to

things that they weren't expecting.

(Student Ambassador, University D, post-treatment)

Three of the universities involved talked about the challenge of providing an experience that is both realistic and engaging. A minority of students were disappointed that the summer school did not offer what they perceived to be a more 'realistic' experience of studying at university (University B, post-treatment). They did not feel that they had had an authentic experience and would have liked to receive genuine university lectures and seminars to enable them to immerse themselves in a 'real' university lesson and gauge what a day in the life of a university student would be like. Comments from students included:

Because the sessions we did have were completely different to what you would probably get in uni, apart from being in lecture halls.

(University D, pre-16, post-treatment)

It was just in the same environment, doing the same thing, over, and over, and over again. So, it got a bit repetitive.

(University D, pre-16, post-treatment)

I found that a lot of the sessions we had were more surface-level than I thought they would be.

(University D, pre-16, post-treatment)

The focus groups suggest that the students who were best-informed about HE felt that they would have benefitted from more detailed insights into their chosen courses. They had expected to find out about module content, assessments and when exams were taken. The level of detail that these students sought is more often made available once a course has started.

One student commented that it was important to gain a realistic picture because they did not want to feel a 'false sense of security' (University D, post-16, post-treatment). Knowing what to expect was also discussed by students at University C (post-treatment):

I think you're, so seeing what university was like has given me more confidence.

Like, it's less of an unknown and it's more, like, I know what's gonna happen and more, like, prepared for it.

(University C, post-treatment)

Implementers at University B discussed how to achieve a balance between a 'real' lecture and a taster that conveys what a lecture is like. Their comments indicate that they felt that exposing secondary school students to a 'real' course module during summer school could be counterproductive and discourage students from pursuing HE. Their focus was on providing interesting and accessible academic sessions. Some staff and student ambassadors argued that presenting sessions that focused on entertainment rather than realism was not necessarily detrimental as the positive impact would be greater if pupils were engaged and associated 'enjoyment' rather than 'knowledge' with HE.

I think the social element, if they're enjoying themselves, in an activity, they're gonna get more from the activity, through listening and talking to the other people and sharing that experience together, and learning from each other.

(University E, post-treatment)

Comments from student ambassadors included:

Obviously actual lectures are a bit more formal, so it wasn't quite the same, but I don't think you can really sit down with a group of Year 12s and give them a university-level lecture. It was pitched at the level they were at. I feel like it was quite representative of what uni life would be like.

(University B, student ambassador, post-treatment)

I feel like just like [the above student ambassador] said our usual lectures are more formal, but I do feel like you can't just throw the students into that from the start.

(University B, student ambassador, post-treatment)

This view would seem to be reinforced by comments from staff and ambassadors at University E where students found the lecture style boring. Implementers at University E believed that students found content most engaging when they could actively participate in the sessions:

So whenever you start talking a little bit more than ten minutes, kids lose it. They just can't be bothered, especially with the jam-packed day. But the minute you start giving them an activity, they're just all over it. They just love it.

(University E, Student Ambassador)

The law one just went over their heads to be honest [and] there was a lot of big words and a lot of it wasn't as appealing to them... It was too much for me to understand, to be honest, at some points!

(University E, Student Ambassador)

The focus on practicality extended to general information about HE. Students were given practical tasks to show them what it is like to work to a budget. One student explained:

We had to plan out the breakfast for the dorms. I think that really taught me how tight money in university can get but it's still doable, because we did it, and we got a nice breakfast and stuff.

(University E, post-treatment)

At University A, one implementer concurred that activities need to be 'very practical, very hands-on, very immersive' so that students gain a 'real understanding of university life'. They aimed for academics to lead the taster sessions and for the tasters to be set at an appropriate academic level for Year 10s. They add that they also tried to ensure that:

...we have student-led workshops as well and the student life element was really being covered by our ambassadors as well.

(University A, Implementer, post-treatment)

As one student ambassador observed, 'They were more engaged in the ones where they could catapult balls across the room or they could smack a ball against the wall' (Student Ambassador, University E, post-treatment). At University D, the summer school was not led by a specific academic department; therefore tasters of specific subjects were not built into the design. Instead, the focus was on the development of soft skills through a project assignment. Some students felt that they had missed out on key information and guidance and did not 'feel any more confident about what course exactly I want to do' (University D, pre-16, post-treatment). Additional comments included:

> *It was more like wellbeing, just breaking barriers and, also, there was nothing subject-related or anything.*

(University D, pre-16, post-treatment)

> *I want to do art, but we didn't really do anything about it. Because we weren't really given options about what subjects we could go into.*

(University D, post-16, post-treatment)

> *To be honest with you, I still have no clue what science would be like in university, to study.*

(University D, post-16, post-treatment)

University A reflected further on providing an accurate HE experience and being realistic about the age group involved. Implementers felt that, for example, 'some taster lecturers forgot the age of these Year 10s … there was endless talking and the kids began to get a little disruptive'. Another practitioner commented:

> *There was a lot of talking at the start of the Sport Technology session and similar comments have been made about other taster sessions. Whilst I appreciate that academic staff were almost certainly briefed about their audience etc, perhaps providing some suggestions for simple age-appropriate starter tasks would help get them actively participating earlier in the session.*

(Implementer, University A)

Expectations were high and, in some cases, were not met, particularly for those students who wanted to explore specific elements of the course and what it offered:

> *Nothing was clear enough, like any layout of the course that you will be doing. Erm. No, nothing. Like you didn't really get informed – oh you would do this, this and then you'd get assessed on that.*

(University B, post-treatment)

Those students with some prior knowledge of HE had clear expectations of, and questions about, what they wanted to get out of a summer school. At University B some participants would have liked more detail about, for example, module content and assessments, and the opportunity to find out more about their chosen subject.

Other students found that the summer school made them question whether HE was for them, particularly in relation to workload, the breadth of course content and the degree to which they were engaged by some of the topics. While this clearly does not achieve the aim of encouraging these students to progress to HE, it does support them to make an informed decision about what is right for them. One participant reported that the summer school had caused them to doubt their academic ability, since they struggled to complete the practical lab exercises at University B's summer school:

> *I thought that I was ready to go to university. I'm not saying this has changed. I still want to go to university. I just think I thought it was maybe a bit easier than it seemed. I'm not sure. So for the lab practical I felt like I was really slow at doing it, and I'm not sure 'cause I know that there's obviously time limits to things you can do. So I know that I need to pick up the pace a bit. It's made me realise that maybe the practical parts are a bit harder than I thought it would be.*

(University B, post-treatment)

5. DISCUSSION

This interim analysis suggests that the summer schools may have had a small positive effect on how compatible students perceived HE to be with their social identity – whether they perceived it to be a place for people like them. This result is also reflected in the IPE findings. Before the summer schools, students voiced concerns around meeting new people and being able to make friends. After the summer schools, many students reported that they felt more socially confident, and some found the process of making friends less challenging than they had thought. These findings suggest that this key outcome outlined in the Theory of Change was realised.

The results indicate that the summer schools had no effect on students' self-reported likelihood of attending HE, or self-reported applications to HE. These outcomes outlined in the Theory of Change appear not to have been realised. This may be unsurprising given that students who apply to a university summer school are already likely to be interested in this pathway and therefore already see it as a desirable option. Indeed, in the pre-summer school survey, 95% of applicants reported they were either 'likely' or 'extremely likely' to apply to HE in the future. Furthermore, a high proportion of both the treatment and control groups reported that they had applied to HE by the January UCAS equal considerations deadline. There was also no impact on self-reported self-efficacy relating to HE (confidence in successfully applying to and succeeding in HE) or perception of practical barriers to HE (confidence in knowing how to apply to and being able to afford HE). Even if those applying to the summer schools are already interested in HE, we might expect the intervention to improve confidence and reduce the perception of barriers. It may be that the survey responses indicate that students' expectations have not been met. In trying to provide an engaging, holistic and hands-on in-person experience for attendees, summer schools do not always provide preparatory information sessions or sessions which capture the 'reality' of HE. This is particularly the case for pre-16 summer schools, and could demonstrate the drawback of developing a core Theory of Change and associated survey measures for a range of summer schools which may not capture nuances in content and delivery.

The IPE was able to explore these observations further. Before the summer schools, students talked about wanting to find out more about many aspects of HE, from the physical campus to details of what they could study and how it would be taught. While focus groups showed that most students felt they were better informed about HE after their summer school and some were confident they could succeed at university, this was not the case for all students. Implementers talked about their aim to provide engaging academic experiences alongside information sessions and opportunities to socialise. Most students appreciated being able to explore the campus and experience taster sessions in university buildings but there was a tension for some between the students' desire for an 'authentic' HE experience and implementers' need to ensure that sessions were age-appropriate. For younger students, this means providing a teaching and learning experience that is practical and hands-on. Indeed, there were contradictions at one university between students saying they wanted a 'realistic' academic experience but finding a lecture they attended 'boring'. While older students may experience university-style teaching in a lecture theatre, it will not be pitched at undergraduate level.

Some participants arrived with very specific questions about course content and delivery which they did not feel were answered. This had not been highlighted in the evaluation of online summer schools last year but perhaps this was because an online experience is inevitably limiting, and students had become familiar with this form of delivery during the COVID-19 pandemic. As outlined in the Theory of Change, the summer school is underpinned by the rationale that such programmes improve students' confidence and aspirations to progress to HE. For students to see HE as a desirable option (the first outcome in the Theory of Change), it is key that the overall experience is a positive one. While the IPE provides some evidence that this is the case, the evaluation approach would benefit from the development of an Enhanced Theory of Change which would make explicit the causal mechanisms at play and allow further interrogation of the assumptions on which summer school development is based, such as an exploration of the tensions between providing a realistic and an engaging teaching and learning experience.

Interestingly, the survey results differ from those obtained in last year's report, which evaluated online summer schools that took place in the summer of 2021. Here, one outcome – self-efficacy relating to HE – was significant at the 10% level and the vast majority of the confidence interval was on the positive side of the scale, indicating a higher level of trust in this result. While it is important not to over-interpret these sets of results, given the small sample size and wide confidence intervals, it is notable that the face-to-face summer schools may have had a bigger impact on perceptions of fitting in at university than the online summer schools did. This could indicate the importance of visiting the campus, staying in university accommodation and meeting student ambassadors in-person in enabling students to see themselves in an HE setting. Indeed, the IPE results would seem to support this view. It is perhaps less clear why the online summer schools may have boosted confidence in applying to and succeeding at university to a greater degree than face-to-face summer schools. We may speculate that, as the online summer schools could not be hands-on, social or interactive, they provided more information sessions on applying to HE, the UCAS system and academic life, leading students to feel better equipped. If this is the case, it is important that in-person summer schools leave time for clear information sessions as well as more informal interactions, or else that they provide these sessions online to supplement in-person delivery.

After taking part in face-to-face summer schools, students talked about how their worries regarding socialising and meeting new people had been eased. Feeling reassured that they will be able to cope socially with a move into HE is likely to contribute not only to students' confidence but also their sense of belief that HE aligns with their social identity (the third and fifth outcomes in the Theory of Change). These in turn will encourage students to see HE as a desirable option (the first outcome in the Theory of Change). The research highlights the important role played by student ambassadors in providing students with the information and reassurances they seek. These conversations are often informal and ad hoc but this should not detract from their importance to students. As discussed, student ambassadors were able to answer questions about student finance, as well as providing reassurance on how to cope in HE with mental health difficulties.

The IPE demonstrates the multiplicity of student expectations around what they would like to get out of attending a summer school. The drivers to attend influenced student expectations, and these varied depending on whether, for example, students were the first in their family to go into HE, or had family or friends who were either attending a university or had been to university. The latter were more inclined to want to find out particular information about a course – arriving with specific questions – rather than wanting a broad overview of HE. As previously mentioned, and among the older cohorts in particular, the majority of individuals applying to summer schools appear already to be on a path to HE progression, and this frames their perception of what a summer school can do for them. Students are seeking to be as informed as possible so that they can take their next steps with confidence. For those students who have no frame of reference for what the HE experience might be like, summer schools offer the opportunity to explore their HE options, including how far away from home they would be comfortable travelling, what it is like staying in student accommodation, what to expect from sharing with others, and how they may want to approach tackling HE.

Limitations of Research and Future Directions

As highlighted throughout this report, the above results must be interpreted with caution as only a small proportion of the total sample even partially completed Surveys 1 and 2 (33% and 17% respectively). An even smaller proportion had the complete data required for the analysis of each outcome. This means that the sample may well be too small to detect the effects we are trying to estimate (hence the wide confidence intervals on the estimated effects). An outcome survey issued to students by e-mail was perhaps unlikely to yield a high response rate, despite in-person requests for students to complete the survey and repeated reminders. It was also probable that certain types of student would be more likely to complete the survey, leading to potential bias. This was seen in Survey 2 where a greater proportion of female students responded in the control group than the treatment group (see the analysis report for a full breakdown). Females are more likely to participate in HE than males, so summer school attendance may have a lesser effect on their future participation in HE than for males. If this is the

case, the higher proportion of females in the control group could contribute to downward bias. Moreover, despite persistent efforts to gain access to control group students as part of the IPE, few students from the control group took part in the focus groups. However, this interim report intended to provide early evidence of the effects of the summer schools; enrolment in HE is the primary outcome measure and, as this outcome does not rely on response rates, we expect a full and balanced sample (1,687 students). This will give us a more robust measure of the impact of summer schools.

It is worth noting that although we ensured that students allocated to the control group, or indeed the treatment group, could not be given a place at any other university summer school participating in the trial, we could not prevent students from applying to and attending other summer schools which were not part of this project, nor from participating in any other outreach activities. To establish how often this occurred, the universities will use HEAT to track other HE outreach activities in which their trial applicants have participated and this data will feature in the final report in 2025. While outreach activity should balance out across the treatment and control groups, it is more difficult to identify attitudinal and behavioural differences between summer school attendees and non-attendees when summer school is only one of a host of other HE-preparatory activities.

A key limitation of this research is that the survey questions used were adapted from previously validated scales and are, therefore, not validated in themselves. This means that we cannot be certain that the questions were interpreted correctly by the students answering them or, therefore, that they were measuring what they intended to measure. Since this project started, TASO has developed validated scales as part of the Access and Success Questionnaire which has been tested on a range of student populations. Some of the questions used in this research do in fact align with the validated questionnaire; for example, 'University is for people like me' is used to measure perceptions of fitting in or belonging for both. However, the validated questionnaire also includes more items per scale; for example, it asks about fitting in academically as well as socially, and uses different items to measure knowledge of HE and confidence in applying. Future trials should seek to include the fully validated scales to provide a more robust interim measure of the impact of summer schools until administrative data on HE enrolment is available.

As discussed throughout this report as well as in last year's report, the question remains as to whether HE providers are targeting the right young people for their summer schools. It is highly probable that those applying to summer schools, and thus the participants included in this RCT, are already on the HE trajectory and we may therefore be unlikely to see an impact on application and enrolment rates when this data becomes available. As Harrison and Waller (2017) argue, most WP activities tend to pick the 'low hanging fruit' and, as a result, miss students from the most disadvantaged and underrepresented backgrounds who would likely benefit the most from them. An RCT designed to include these students may further reveal the impact of summer schools on WP. It is more challenging for HE providers to reach these students, particularly as they may be less motivated to attend HE and are therefore unlikely to respond to summer school advertisements. Considered collaboration with schools and colleges is undoubtedly needed to address the issue.

As alluded to in the IPE findings, it may be that summer schools equip students to do better once they are on-course rather than increasing the likelihood that they will apply to HE. This notion has been demonstrated in an RCT of eight pre-HE summer schools conducted in the US, which found positive effects on the pass rates of first-year students but not on application rates (Barnett et al., 2012). However, the current aim of summer schools as an outreach activity is to widen participation in HE rather than support success once enrolled; if HE providers prioritise the latter over the former, then future evaluations need to be designed to capture post-entry success as a primary outcome. This, then, would require providers to rethink and redesign summer schools in their current form, shifting the focus away from increasing the participation rates of underrepresented and disadvantaged students for whom summer schools are their key, or only, source of guidance and support for applications to and progression in HE. Furthermore, we already know that outreach activities do not always engage those students who may not be considering HE as an option, not through lack of potential but lack of opportunity. A rethinking of recruitment strategies is vital if we are to identify those students who will benefit most from summer school support.

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7.   APPENDICES

APPENDIX I: Intervention descriptions by university

The following descriptions summarise the activities in each summer school.

University A

Year-10 students attended a four-day on-campus summer school with three nights spent in university accommodation. Content covered HE information, subject-specific activities, social activities and student life. Within the four-day period, 35 sessions were offered, consisting of four HE information sessions, six subject tasters, four student life activities and 21 social-building opportunities, including bowling, sport and societies and a final night party. HE info sessions covered student support, future plans, careers, myth-busting, student finance and a session for parents and carers. Pupils pre-selected their six subject tasters from a selection of two or three available simultaneously. Content was delivered by the relevant experts: academic lecturers, student support service staff, student ambassadors and outreach practitioners.

University B

These summer schools were aimed at post-16 students and varied by specific subject as outlined below. Activities delivered across all summer schools included:

- Subject-specific lectures and taster sessions.

- Interactive workshops/tutorials/demos delivered by academic staff and student ambassadors to expand subject knowledge.

- Talks to explain the application and admissions process.

- Careers talks and/or employability sessions to explain the benefits of choosing particular subjects at undergraduate level.

- Activities to foster a sense of belonging within the university.

- Team-building activities to encourage engagement with the event and each other.

- Practical activities to support application to HE such as personal statement workshops, how to choose a course/university, contextual admissions scheme and financial support information.

- Information sessions about the campus and accommodation.

- Q&A with current undergraduates.

Biosciences

This summer school included two days online and one day on campus. The online sessions comprised academic sessions, social time, workshops on careers and employability, and pre-recorded sessions available throughout, such as virtual campus tours and academic lectures. The on-campus activities include icebreakers, lab workshops, a campus tour and a motivational speaker.

Dentistry

Students attended a two-day on-campus summer school with one night in university accommodation. Sessions included welcome and icebreakers, a first-year taster lecture, a campus tour, a clinical skills activity and sessions on applying to dentistry with a Q and A with current medical students, communication skills and ethics in a dentistry setting, learning how to make judgements and decisions, information on the admissions test, a personal statement workshop and a general Q and A with staff and students.

Medicine

Students attended a two-day on-campus summer school with one night in university accommodation. Sessions included welcome and icebreakers, a first-year taster lecture, a campus tour, a clinical skills activity, tips and strategies for applying to medicine and a Q and A with current medical students, communication skills and medical ethics, learning how to make judgements and decisions, information on the admissions test, a personal statement workshop and a general Q and A with staff and students.

Psychology

This summer school included two days online and one day on campus. The online sessions included academic tasters, life as a psychology student, social time and workshops on careers and employability. The on-campus activities included academic lectures, lab workshops, a campus tour and a Q and A with student ambassadors.

Social Sciences

This was a two-day on-campus summer school with one night in university accommodation. Activities included a welcome and icebreaker session, a campus tour, 5 hour-long workshops on subjects and student life, a session on presentation planning and delivery, reflection time and a social activity on campus.

University C

These summer schools were aimed at post-16 students and varied by subject as outlined below. All took place on campus over four days, with three nights spent in university accommodation.

Arts

Sessions for students on the Arts stream included a campus tour, a welcome talk, a project overview, an Adapting Shakespeare introductory talk, clips and discussion, and 'A film and how it works'. Further workshops included a taster lecture on ' A Cultural History of Romeo and Juliet in Cinema', and 'From Pages to Screen' group work and filming (for their project). The final day had three sessions: 'Viewing films and reflection', 'What does Shakespeare's work look like in foreign language film adaptations' and a Q&A. In total, 12 subject-specific sessions were offered.

Business

Sessions for students on the Business stream included a campus tour, Innovation lecture, Innovation group work, Business Ethics lecture and Business Ethics group work. Further activities included talks on the financial markets and supply chains, with additional sessions on sales and pricing, and a Q&A on studying at the school of business, giving a total of 11 subject-specific sessions.

Law

Sessions for students on the Law stream covered the crime scene, reasons to study law, homicide, and interviewing clients as well as a campus tour. Further workshops included interviewing and advising, pleas in mitigation, presenting your plea in mitigation, the impact of imprisonment and a Q&A, giving a total of 9 subject-specific sessions.

Medicine

Sessions for students on the Medicine stream included a campus tour, a talk on working in the NHS, a taster lecture about strokes and a group activity on a patient journey regarding strokes. Further

workshops include a lecture on the multidisciplinary management of strokes, group work analysing patient notes, and a University Clinical Aptitude Test (UCAT)/personal statement preparation session with an additional optional session on UCAT practice questions. On the final day, sessions offered multiple mini-interviews and information on applying to medicine and healthcare courses, giving a total of 9 subject-specific sessions.

STEM

Sessions for students on the STEM stream included a chemistry chlorophyll practical, a geology/geography lecture on planetary atmospheres and life, a Life Science practical on DNA and Microbes, and a Natural Sciences lecture on Astrobiology: the possibility of life beyond Earth. Further workshops included Life Sciences practicals on checking plates for bacterial growth and 'Mutants under the Microscope', a campus tour and a mentor Q&A, giving a total of 8 subject-specific sessions.

University D pre-16 and post-16 summer schools

Students attended a four-day on-campus summer school with three nights in university accommodation. Separate summer schools were run for Year 10 and Year 12 students with both exploring the theme of 'breaking barriers' (although pitched at different levels), reflecting the university's pledge to build a fairer world. Participants had the opportunity to experience different aspects of student life at university, from cooking to participating in sports and social activities and making new friends. Alongside this, participants explored how learning happens at university and were able to develop their own skills through breaking barriers activities based around personal barriers, academic barriers and building a fairer community.

University E

This summer school was a two-day on-campus summer school with one night spent in university accommodation. It was aimed at Year 9 students and designed to give pupils an insight into what university life could be like. Students were able to meet and work with pupils from other schools and experience a range of sessions, including those on university life, subject tasters, student finance, clubs and societies and a Q&A with student ambassadors.

APPENDIX II: Theory of Change

Situation	Students from disadvantaged and underrepresented backgrounds are less likely to apply to and enrol in HE than their more advantaged/well represented peers.

Aims	To increase access to and participation in HE for disadvantaged and underrepresented student groups

Inputs	Activities	Outputs	Outcomes	Impact
Process			**Impact**	
• Venues – accommodation, rooms for sessions/workshops • Staff – planning and implementing • Student mentors – role models • Advertisement and recruitment of students • Session content	• Taster lectures • Subject taster workshops • Campus tours • Practical sessions • Information sessions • Group work activities • Application talks • Residential experience • Interaction/Q&A with student ambassadors • Sports and social activities	• Students experience a HE setting including accommodation. • Students are exposed to different subjects available at HE. • Students have the opportunity to interact with other summerschool students (peers). • Students have the opportunity to interact with current students (ambassadors and mentors) • Students have the opportunity to interact with academic staff	• Students see HE as a more desirable option. • Students perceive fewer barriers to progressing to HE. • Students have increased confidence in their ability to succeed in HE. • Students understand how to make a successful application to HE. • Students perceive that HE with their social identity. • Students are equipped with the knowledge to make an informed decision about their future.	• Students are more likely to apply to HE. • Students are more likely to enrol in HE. • Students are more likely to progress to a specific subject in HE (for subject specific summer schools). • Students are more likely to apply to the host-HE provider. • Students are more likely to progress to academic study

Rationale & Assumptions	Research has shown that summer schools are positively associated with an increase in student confidence and aspiration to progress to HE. ssumptions are that the summer school will go ahead, students will apply to take part, and student attendance and engagement sustained.

APPENDIX III: Focus group schedules.

Treatment group – Pre-Summer School focus group/interview schedule

When asking the pre-summer school questions, keep in mind that:

The aim of the pre-summer school focus groups is to establish a baseline of students' knowledge, perspectives, understanding, attitudes towards higher education to help gauge whether the summer school met intended outcomes and impact.

The stated outcomes of the summer school as outlined in the Theory of Change are:

- Students see HE as more desirable option
- Students perceive few practical barriers to progressing to HE
- Students have increased confidence to succeed at HE
- Students understand how to make a successful application to HE
- Students are equipped to make an informed decision about their future
- Students develop a sense of belief that HE fits with their social identity

The stated impact of the summer school as outlined in the Theory of Change are:

- Students are more likely to apply to HE/host university
- Students are more likely to enrol in HE
- Students are more like to progress to academic study at post-16
- Students are more likely to progress to a specific subject at HE (if the summer school is subject specific)

1. What motivated you to apply to the summer school?

2. What are you hoping to get out of attending the summer school?

   [Use prompts where necessary – relate to intended outcomes – knowing how to apply and being confident they can make a successful application; having a good idea of what they want to study; being able to fund their studies]

3. When you think about going to university how does that make you feel?

   Excited, worried, nervous ...

   [If possible, relate their answer back to what they're hoping to get out of the summer school.

   For example, do they see the summer school as helping them feel more confident about going to higher education].

4. Can you see yourself fitting into university life?

   a. Why/Why not?

5. What do you think might help you settle into university? (pre-16 probe: Was there anything that helped you settle in at school in your transition to secondary school?)

6. What do you think might influence your decision to go to university?

   [We are looking for extrinsic and intrinsic influences – identity factors, first in family, cultural expectations, self-belief, etc; Geographic, economic, socio-cultural, subject knowledge, influencers, academic skills, wellbeing/mental health.]

7. What might be a barrier to you applying or progressing?

   [Ask a question about barriers if this is not mentioned as part of the previous question, e.g. finances, family/care commitments, poor grades, physical or mental health; choosing alternative post-16 routes, such as employment or apprenticeships.]

8. Are there things about going to university that you're not looking forward to?

   [Build in prompts – not really knowing much about university; meeting new people/making new friends/moving away from home/being independent; the social life/clubs/sports/activities; the academic side of university life/different ways of learning; different assessment methods.]

9. What does going to University mean for you?

   [Build in probes around whether university is seen as a desirable option. How will this impact you as a person, what do you think you're going to get out of it? Looking at identity factors, first in family, cultural expectations, self-belief.]

10. What are you looking forward to most about going to University?

    [Build in prompts – meeting new people/making new friends/moving away from home/being independent; the social life/clubs/sports/activities; the academic side of university life/different ways of learning.]

11. Has the pandemic impacted your educational experiences and expectations?

[Build in probes – If yes, in what ways? e.g. missed formal examinations post-16. Did this play a part in decisions about attending the summer school?]

Control Group – Pre-Summer School focus group/interview schedule

The aim of the pre-summer school focus groups with the control groups is to establish a baseline of students' knowledge, perspectives, understanding and attitudes towards HE to provide a baseline comparison with students in the treatment group.

1. What motivated you to apply to the summer school?

2. What were you hoping to get out of attending the summer school?

   [Use prompts where necessary and relate to intended outcomes: knowing how to apply and being confident they can make a successful application; having a good idea of what they want to study; being able to fund their studies.]

3. When you think about going to university how does that make you feel?

   Excited, worried, nervous …

   [If possible, relate their answer back to what they are hoping to get out of the summer school. For example, do they see the summer school as helping them feel more confident about going to HE]?

4. Do you have plans to go to another summer school or participate in other outreach activities? Can you see yourself fitting into university life?

   a. Why/Why not? What do you think might help you settle into university? (pre-16 probe: Was there anything that helped you settle in at school during transition to secondary school?)

   a. What do you think might influence your decision to go to university? [We are looking for extrinsic and intrinsic influences: identity factors, first in family, cultural expectations, self-belief; Geographic, economic, socio-cultural, subject knowledge, influencers, academic skills, wellbeing/mental health.]

5. What might be a barrier to you applying or progressing?

   [Ask question about barriers if this is not mentioned as part of the previous question, e.g. finances, family/care commitments, poor grades, physical or mental health, choosing alternative post-16 routes such as employment or apprenticeships.]

6. Are there things about going to university that you're not looking forward to?

   [Build in prompts – not really knowing much about university; meeting new people/making new friends/moving away from home/being independent; the social life/clubs/sports/activities; the academic side of university life/different ways of learning; different assessment methods.]

7. What does going to University mean for you?

   [Build in probes around whether university is seen as a desirable option. How will this impact you as a person, what do you think you're going to get out of it? Look at identity factors, first in family, cultural expectations, and self-belief.]

8. If the student is considering going to university – What are you looking forward to most about going to University?

   [Build in prompts – meeting new people/making new friends/moving away from home/being independent; the social life/clubs/sports/activities; the academic side of university life/different ways of learning.]

9. Has the pandemic impacted your educational experiences and expectations?

   [Build in probes – If yes, in what ways? e.g. missed formal examinations post-16. Did this play a part in decisions about attending the summer school?]

Treatment Group – Post-summer school focus group/interview schedule

When asking the post-summer school questions, keep in mind that:

The post-summer school focus groups aim to explore whether and how far the summer school achieved the stated outcomes and impact. These findings support the findings of the survey administered as part of the impact evaluation.

The stated outcomes of the summer school as outlined in the Theory of Change are:

- Students see HE as a more desirable option.
- Students perceive few practical barriers to progressing to HE.
- Students have increased confidence to succeed at HE.
- Students understand how to make a successful application to HE.

- Students are equipped to make an informed decision about their future.
- Students develop a sense of belief that HE fits with their social identity.

The stated impacts of the summer school as outlined in the Theory of Change are:

- Students are more likely to apply to HE/the host university.
- Students are more likely to enrol in HE.
- Students are more like to progress to academic study post-16.
- Students are more likely to progress to a specific subject at HE (if the summer school is subject-specific).

1. How do you feel about your summer school experience? Did it fulfil your expectations?

   a. If yes, why?

   b. If no, why not?

2. Do you feel the summer school has enabled you to make informed decisions about your future plans with regard to higher education/future study?

   a. If yes, why?

   b. If no, why not?

   [Probe here for the likelihood of progressing to study a specific subject if the summer school is a subject-specific summer school, or to the host university.]

3. Do you feel you have a better understanding of how to apply to HE?

   [Provider to include topics specific to their summer school here, but could include IAG, university life and what to expect, subjects available to study, teaching and assessment methods, qualifications needed.]

   Aim to tease out whether they feel their confidence to succeed at HE has increased.

4. What do you think about attending university/HE in the future?

   [are there any perceived barriers]

   For those students who are thinking of applying to HE: 'Is there anything that might make it more difficult for you to apply to university?' *Build in probes which might include fit/sense of belonging; the academic side of university life/different ways of learning; different assessment methods.*

5. How have your feelings about going to university/ further education changed since attending the summer school?

   [The aim here is to explore whether HE is a more or less desirable option after the summer school]

   a. Were these changes because of something you found out/experienced at the summer school?

   Where a student is undecided:

   b. What do you think will influence whether you apply to university or not?

   Process-orientated questions about knowledge, priorities, perceptions of value of HE. Reflection on social, cultural and family identity and the relationship on HE decision-making. Influences on decisions.

   Build in probes – (Prompt using survey responses – knowing how to apply and being confident they can make a successful application; having a good idea of what they want to study; being able to fund their studies.)

   What did you find most useful about the summer school? Why? *(Build in probes around delivery modes, people involved in delivery, activities.)*

6. Is there anything that wasn't included in the summer school that you would have liked?

7. Did you enrol in another summer school? Are you taking part in other activities to help you find out more about university?

Control Group – Post-summer school focus group/interview schedule

1. What motivated you to apply to the summer school?

2. Have you enrolled in another summer school? Are you taking part in other activities to help you find out more about university?

3. What were you hoping to get out of attending?

4. Have your feelings about going to university/ further education changed since you applied to attend the summer school? In what ways?

   a. If yes, how and why?

5. Can you see yourself attending university/HE in the future?

a. If yes, why?

Build in probes which might include fit/sense of belonging; the academic side of university life/ different ways of learning; different assessment methods; knowing how to apply and being confident they can make a successful application; having a good idea of what they want to study; being able to fund their studies.

b. If no, why not? What influenced your decision?

Probes: Finances, family/care commitments, poor grades, physical or mental health. Choosing alternative post-16 routes such as employment or apprenticeships, process-orientated questions about knowledge, priorities, perceptions of the value of HE. Reflection on social, cultural and family identity and their relationship with HE decision-making. Influences on decisions.

FINISH for those not planning to go to university.

6. What experiences have you had that led you to think about university as an option? Are you taking part in other activities to help you find out more about university?

Anecdotes, stories – how has this changed, what might be a barrier to applying? What do you think will have an influence on your decision to apply? Influence of factors other than the summer school.

7. What does going to University mean for you?

Build in probes – How will this impact you as a person, what do you think you're going to get out of it? Looking at identity factors, first in family, cultural expectations, self-belief.

8. Can you see yourself fitting into university life?

a. a) Why/Why not?

9. What do you think might help you settle into university?

(pre-16 probe: Was there anything that helped you settle in at school during the transition to secondary school?)

10. What do you think will influence whether you apply to university or not?

Process-orientated questions about knowledge, priorities, perceptions of the value of HE. Reflection on social, cultural and family identity and their relationship with HE decision-making. Influences on decisions.

11. What do you think might get in the way of you attending HE?

Finances, family/care commitments, poor grades, physical or mental health.

Choosing alternative post-16 routes such as employment or an apprenticeship.

Implementer (staff) – Post-summer school focus group/interview schedule

1. Can you tell me about your role in the summer school?

- Is this a new role or something you've done before?

2. Can you tell me about the activities that you've been involved with?

- What's your perception of the student engagement with the activities you're involved with, and the summer school as a whole?

- What do you feel has gone well? Why?

- What do you feel hasn't worked so well? Why not?

3. Did all students attend sessions, as expected?

4. Is there anything that you feel should have been included in the summer school?

5. Did you change any of your planned activities? If so, why?
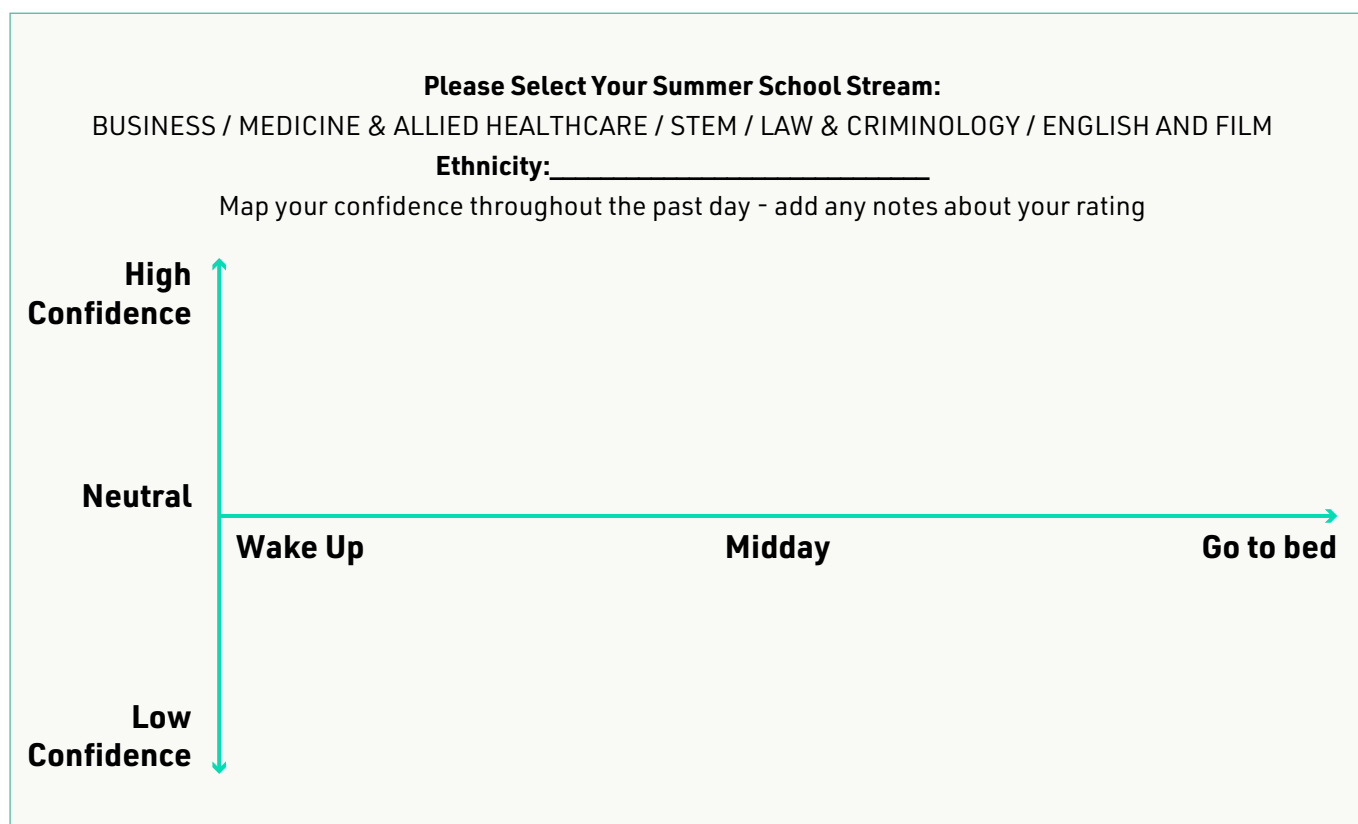
Appendix IV: Confidence trackers.

The confidence trackers were passed around during dinner each evening and students had the opportunity to complete them at the time or hand them in later or on the following day. On the final day, the trackers were handed out at the same time as the final surveys and collected immediately. The number of trackers completed increased each day as the students became familiar with the process and were more willing to take part.

As shown in the example below, the trackers were A5 size and had an example illustration on the back.
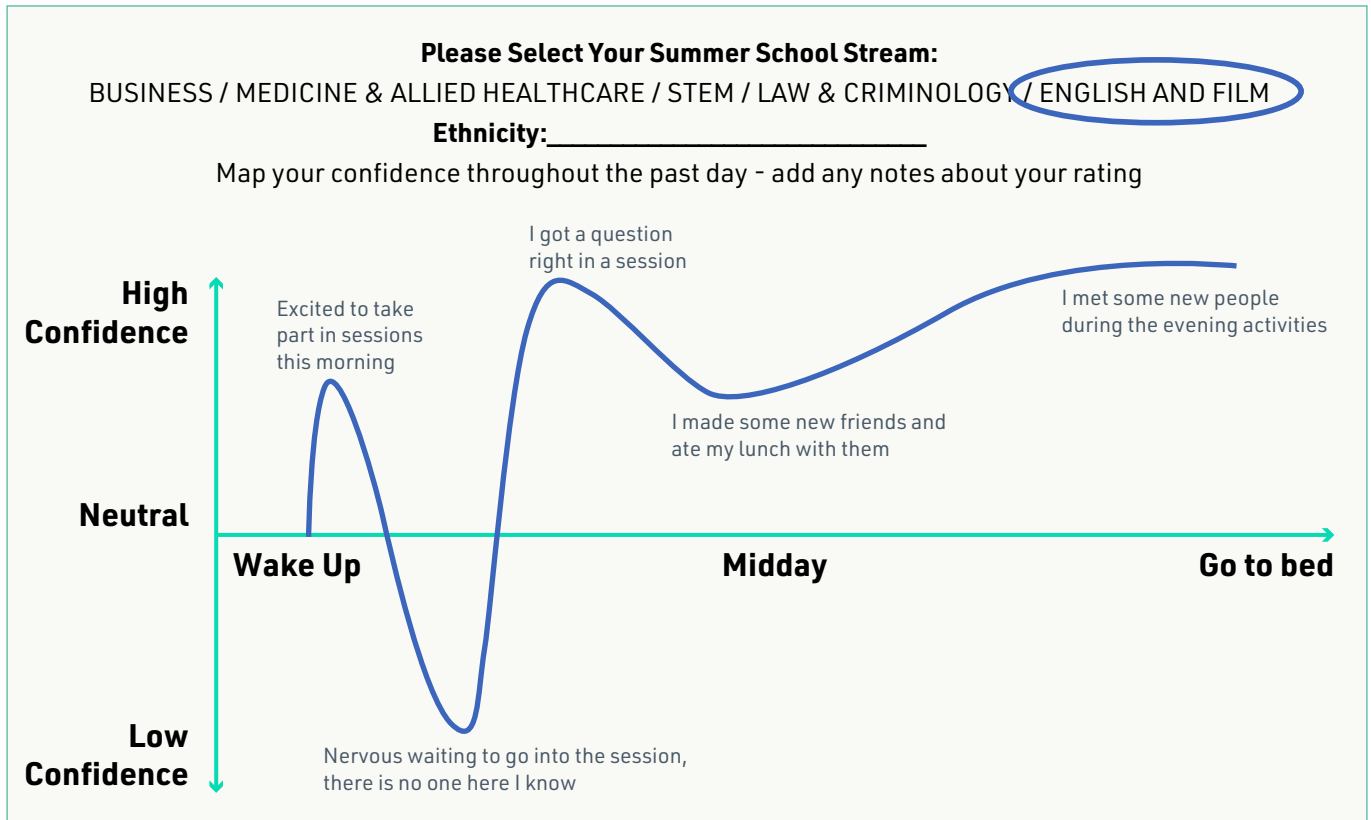
Students were encouraged to note on the trackers the reasons for particularly low or high confidence so that we could take that into account in our analysis.

To analyse the trackers, we collated the data overall, then by summer school stream and day, and then by ethnicity and day. The individual trackers were overlaid to show patterns in these groups. Common peaks and troughs were noted, as were the positions of the lines on the tracker in relation to neutral. These patterns gave us an indication of the overall confidence of the students daily and over the course of the summer school.

How Would You Rate Your Confidence Today?

Please Select Your Summer School Stream:
BUSINESS / MEDICINE & ALLIED HEALTHCARE / STEM / LAW & CRIMINOLOGY / ENGLISH AND FILM
Ethnicity:_____
Map your confidence throughout the past day - add any notes about your rating

High Confidence

Neutral

Wake Up   Midday   Go to bed

Low Confidence

EXAMPLE: How Would You Rate Your Confidence Today?

Please Select Your Summer School Stream:
BUSINESS / MEDICINE & ALLIED HEALTHCARE / STEM / LAW & CRIMINOLOGY / ENGLISH AND FILM

Ethnicity:_____

Map your confidence throughout the past day - add any notes about your rating

High Confidence

Neutral

Low Confidence

Wake Up — Midday — Go to bed

Excited to take part in sessions this morning

I got a question right in a session

I made some new friends and ate my lunch with them

I met some new people during the evening activities

Nervous waiting to go into the session, there is no one here I know

Results

The overall confidence trackers showed an overall increase in confidence in all the students who completed them. By observing the lines above and below the 'neutral' line, it could be seen that over the four days of the summer schools, students registered more positive confidence moments than at the beginning and spent less time in the negative confidence areas. It should be noted that low confidence in an area was not necessarily a reflection of the content of that session.

In terms of ethnicity, white students marked more negative confidence moments than other students. Students who identified as having Asian ethnicities were generally more confident during the activities, and those from Black ethnicities were the most confident. While no firm conclusions can be drawn from these results, it raises further questions on external perceptions of confidence versus actual confidence.

When analysing the notes by subject strand, for students in Medicine and Allied Health high confidence was associated with meeting new people,

'good' lectures, food and the admissions talk. Low confidence was associated with travelling and lateness, 'bad' lectures, reading notes and the MMI and UCAT talks. During the STEM summer school, the interactive sessions created high levels of confidence, as did meeting new people. Low confidence was associated with travel, food and being tired. The English and Film strand had more lows than highs despite an overall increase in confidence. The trackers showed a 'rollercoaster' pattern more than in other strands. Social activities were ranked highly but the session content was not, and the expectations of the students were not met (see above). Finally, the Law and Criminology strand showed the most defined increase in confidence and the most lines above the neutral line. The main observations from the student notes related to nervousness around speaking in front of others and feeling tired.

The confidence trackers gave us an overall view of how the confidence of the students increased during the summer school and which areas promoted or reduced this confidence.

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