The impact of Uni Connect on intermediate outcomes for learners

Technical Annex to accompany the report on the learner survey findings after Wave 4

October 2023

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Glossary

AWM	Aimhigher West Midlands – tracking organisation
DoB	Date of birth
EMWPREP	East Midlands Widening Participation Research and Evaluation
FSM	Free school meals
GCSE	General Certificate of Secondary Education
HE	Higher education
HEAT	Higher Education Access Tracker - tracking organisation
IAG	Information, advice and guidance
IDACI	Income Deprivation Affecting Children Index
IMD	Index of Multiple Deprivation
KS	Key Stage of education
MHCLG	Ministry of Housing, Communities and Local Government
NPD	National Pupil Database
OfS	Office for Students
ONS	Office for National Statistics
SAT	Standard Assessment Test – national curriculum tests for pupils in KS2
SRS	Secure Research Service
T4	Activity data collected by tracking organisations between W2 and W4
UC	Uni Connect
W0	Baseline learner survey, Autumn 2017
W1	Wave 1 learner survey – first follow-up, Autumn 2018
W2	Wave 2 learner survey – second follow-up, Autumn 2019
W3	Wave 3 learner survey – third follow-up, Autumn 2020
W4	Wave 4 learner survey – fourth follow-up, Autumn 2021

1. Introduction

This technical annexe accompanies the findings report which was produced following Wave 4 (2021-22) of the learner survey for the national impact evaluation of Uni Connect. It provides supplementary details about the survey implementation, the demographic characteristics of respondents and the analytical models used to explore the impact of the programme. Regression analysis output tables are also included.

Learner survey implementation

The longitudinal survey was designed to track changes in learners' knowledge, attitudes and intentions towards higher education (HE) as they progressed from Key Stage 3 to Key Stage 5. The survey was first administered between September and November 2017 to obtain the baseline (Wave 0). Table 1 below lists the survey schedule for the whole programme.

Table 1: Survey waves and dates administered.

Uni Connect Phase	Survey wave	Academic year
Phase 1	Baseline (Wave 0)	2017-18
Phase 1	1st Follow-up (Wave 1)	2018-19
Phase 2	2nd Follow-up (Wave 2)	2019-20
Phase 2	3rd Follow-up (Wave 3)	2020-21
Phase 3	4th Follow-up (Wave 4)	2021-22

The survey comprises a core set of questions (part 1) designed by CFE, and additional questions (part 2) that some partnerships incorporated to capture additional information to inform their local evaluations and/or inform plans for delivery. An additional core question was added at Wave 2 (2019-20) to establish the main reason why learners want to go to HE, and a related question was added at Wave 3 (2020-21) about the reasons why some learners chose *not* to enter HE. Also, at Wave 3 (2020-21), further questions were added to capture the impact of the Covid-19 pandemic on learners' education, future plans and engagement with Uni Connect activity (Q300–Q303). The core questions from part 1 of the survey are included in Appendix 1.

At each wave, the survey was administered by partnerships via schools and colleges using online survey links, paper versions or partnerships' own survey software. Many partnerships adopted a census approach whereby whole classes or even year groups were invited to complete the survey to minimise the burden on schools/colleges.

The longitudinal evaluation design required a targeted approach that prioritised learners who had completed the baseline (Wave 0, 2017-19) to enable changes in learner attitudes, knowledge and intentions towards HE to be measured. By Wave 4

(2021-22), many of the baseline respondents had dropped out of the sample. Partnerships were, therefore, encouraged to target learners who had completed the survey at Wave 2 (2019-20), corresponding to Years 11, 12 and 13 at Wave 4 (Years 9, 10 and 11 at Wave 2). Some partnerships also disseminated the Wave 4 survey to current Year 9 and Year 10 learners to inform their local evaluation activity and delivery plans, rather than for the purposes of the national impact evaluation.

To establish impact at the programme level, learners' Wave 4 survey responses were linked to outreach activity data (T4) collated by three tracking organisations (Aimhigher West Midlands (AWM), East Midlands Widening Participation Research and Evaluation Partnership (EMWPREP), Higher Education Access Tracker (HEAT)) to create a master dataset. Tracking data identifies the type, duration and number of activities that learners have participated in between 2019 and 2022.

To strengthen the analysis approach to control for attainment and free school meal (FSM) status, CFE applied to access the National Pupil Database (NPD) for learners who completed the survey in Waves 2 (2019-20) to 4 (2021-22).[1] To control for attainment in the analysis, two standardised Key Stage 2 (KS2) measures were generated based on Standard Assessment Test (SAT) scores for Maths and English. Standardised measures were used to account for changes in the way SATs scores were calculated for the cohorts participating in Uni Connect.[2] Key Stage 4 (KS4) GCSE attainment data was available for learners in Years 12 to 13 to show how many achieved five or more GCSE equivalents at A*-C, including English and maths.[3]

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[1] The NPD data, provided by the Office for National Statistics, was accessed via the Secure Research Service. On the ONS metadata catalogue, this dataset is called 'Grading and Admissions Data England-Ofqual-DfE', with the DOI: https://doi.org/10.57906/4phz-dq28

[2] KS2 grading changed in 2015-16. To ensure compatibility over time we use standardised scores derived to have a mean of zero and a standard deviation of 1. The measures used are standardised raw KS2 maths (reading) score: pre-2015-16 = KS2-MAT(READ)FINE, post-2015-16 = KS2-MAT(READ)SCORE.

[3] The KS4 variable used is KS4_LEVEL2_EM-94.

2. Constructing the datasets

After cleaning the survey responses, the Wave 4 (2021-22) dataset was matched at the individual level to create a master dataset (W2-W4) with:

– responses from Waves 2 (2019-20) and 3 (2020-21) of the survey

– activity tracking data (from HEAT, AWM and EMWPREP)

– demographic area-level data (IDACI data, including IMD[4])

Through this process two datasets for analysis were created:

– **W4-T4** where the Wave 4 (2021-22) survey was matched with activity tracking data (to understand the combination of programme characteristics and learner demographics associated with learners' intermediate outcomes towards HE)

– **W2-W4-T4** which links survey Waves 2 (2019-20) and 4 (2021-22) with activity tracking data (to explore learner and programme characteristics associated with change in outcomes over time between the two survey time points)

The W2-W4 master dataset was created using a fuzzy-matching process. Five personal identifiers were used: forename, surname, date of birth (DoB), home postcode and school. Certain combinations of identifiers – such as surname, DoB and postcode – could produce false matches in the case of twins, so these matches were checked individually and corrected where necessary. Figure 1 illustrates the data processing approach for Wave 4 (2021-22). It highlights the relatively low match rate to the Wave 2 (2019-20) data (9%).

Figure 1: Data processing flow

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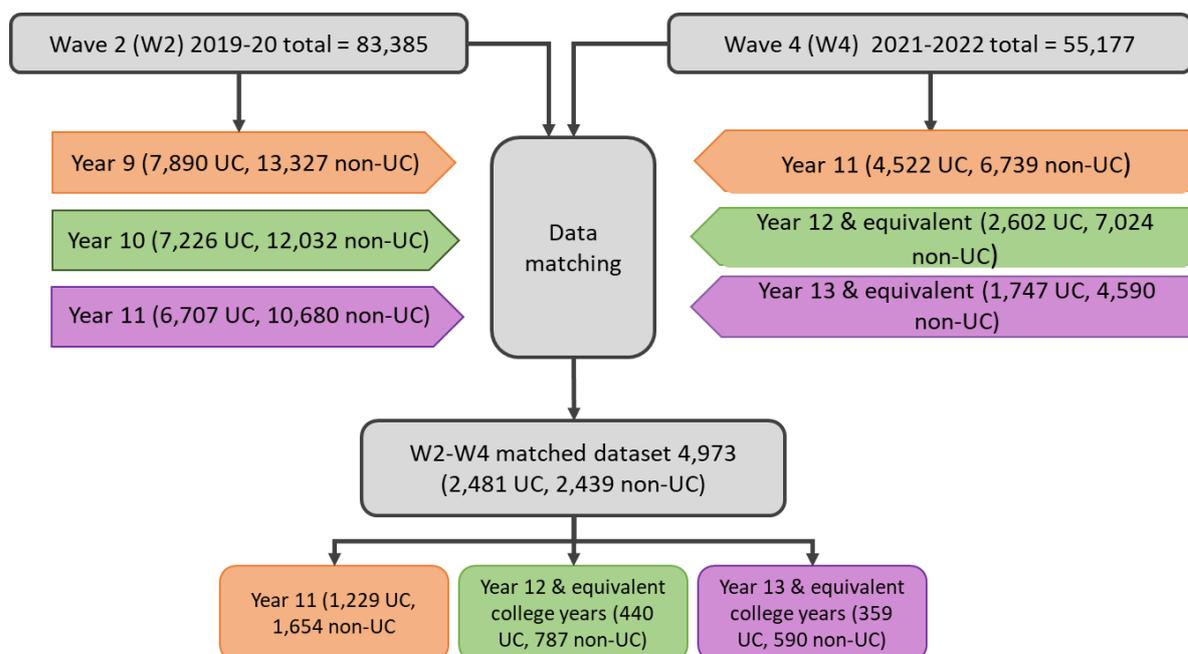
[4] Income Deprivation Affecting Children Index (IDACI) and the Index of Multiple Deprivation (IMD).

Until 2019-20, a target of 20% of Uni Connect learners in each area had been specified as the minimum engagement criterion for partnerships. Due to disruptions caused by the Covid-19 pandemic, the OfS relaxed these targets from 2020-21. For this reason, there are no specific target groups for the Wave 4 (2021-22) cohort.

Data representation

A total of 17 partnerships are represented in the W2-W4 master dataset. However, the number of responses differs between partnerships; just five partnerships achieved 100 or more survey responses and, as such, representation at the programme level has only been partially achieved (see Figure 2). More than half (57%) of the linked W2-W4 master data derives from just two partnerships, which is a similar pattern to the linked datasets from earlier waves.

Figure 2: Number of survey responses in the W2-W4 master dataset by partnership (anonymised) and by Uni Connect target status
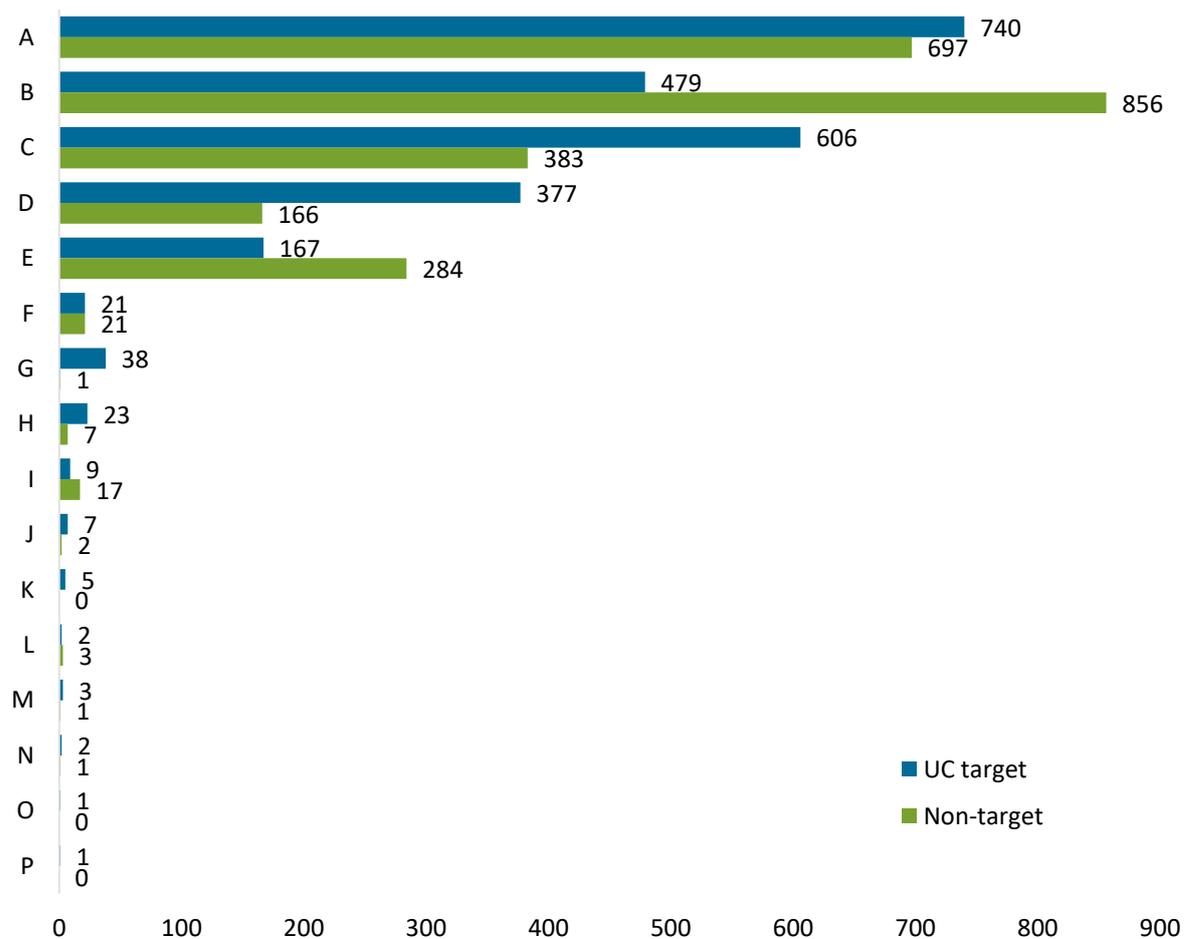
Matching the W2-W4 master dataset with activity data (T4)

The Wave 4 (2021-22) survey data was split into three sets according to the tracking organisations used by each partnership and a copy of the personal identifiers (forename, surname, date of birth and home postcode) was shared with the relevant tracking organisations (AWM, EMWPREP and HEAT). Using fuzzy matching, the tracking organisations matched personal identifiers from the master dataset with their activity data. The separate datasets received from the three tracking organisations were re-coded to common data formats and merged into one file (the T4 activity dataset). We linked this dataset with the Wave 4 (2021-22) (55,177 cases in total) dataset to construct the W4-T4 dataset. A total of 34,904 cases in the W4-T4 dataset (63%) were matched with activity data held by one of the tracking organisations; 20,273 (37%) could not be matched.

We also matched the T4 activity data to the W2-W4 master dataset to create the W2-W4-T4 dataset (4,973 in total). A total of 2,511 cases in the W2-W4 dataset were matched with activity data; 2,456 could not be matched. The matched dataset included a handful of cases that were recorded as being in Years 9 and 10 at Wave 4 (2021-22), which should not be possible as the youngest year group at Wave 2 (2019-20), Year 9, would have progressed to Year 11 at Wave 4 (2021-22). These cases (53 in total) were excluded from the analysis, meaning that the final W2-W4-T4 dataset comprised 4,920 cases. Figure 3 outlines the process of linking the tracking data.

Figure 3: Outline of data processing to create the W2-W4-T4 dataset (numbers represent number of individual learners; negative numbers represent unmatched data that was excluded)
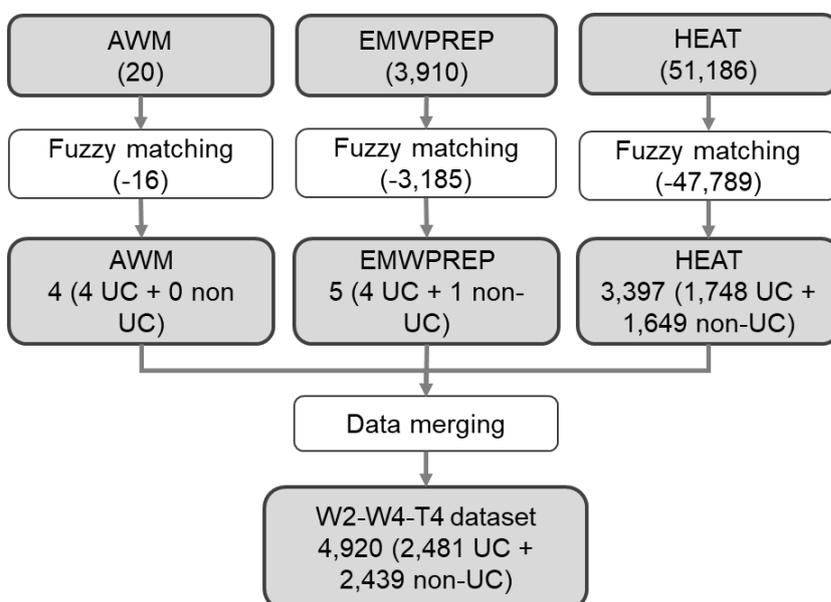
Activity data characteristics

The T4 activity is based on the cumulative activity that learners engaged in between Wave 2 and Wave 4. Most learner activity data (99.7%) is derived from HEAT. Over four-fifths (83%) of learners in the W2-W4-T4 dataset had participated in some Uni

Connect activity. Half of learners (50%) were matched to activity data and 51% percent of respondents were Uni Connect target learners.

Learners received just over 14 hours of activity on average, which is comparable to the previous analysis (Table 2Table 2). On average, learners received 2.6 sessions of activity, compared with 1.5 sessions in the previous analysis. These statistics provide evidence of an increase in the delivery of activities over the course of the programme. The most frequent activities that learners engaged in were information, advice and guidance (IAG), followed by skills sessions and 'other' types of activity.

Table 2: Overview of the activity data showing cumulative learner participation between Wave 2 and Wave 4

Characteristic	Proportion (min-max)	Base
Received no activity	14%	4920
Average number of hours (cumulative total)	14.1 (0–281)	4558
Average number of activity sessions	2.6 (0–48)	4920
Campus visits	12%	4920
IAG	74%	4920
Masterclasses	22%	4920
Mentoring	17%	4920
Summer schools	4%	4920
Skills workshops	57%	4920
Staff development	1%	4920
Other	40%	4920

The main analysis in this report is carried out for Uni Connect activity only from the HEAT tracking organisation as this represents 99% of the dataset. For the first time this year, we also have information about any non-Uni Connect activity that learners received. A third (32%) of Wave 4 (2021-22) learners took part in non-Uni Connect activity. This has been controlled for in the analysis.

3. Wave 4 analysis

To explore the impact of the programme on short-term and intermediate outcomes, multivariate regression analysis was carried out on the W4-T4 data. Several regression models were calculated for the following purposes:

1) **Identify the key predictors of the main survey outcomes** – these models included the core set of learner characteristics as predictors of the outcomes (sex, ethnicity, disability status, FSM status, first in family to go to HE, knowing someone in HE, deprivation IDACI, KS2 attainment in maths and reading, dummy variables for whether a target learner and year group dummy variable (a combined category of Years 9 and 10 was omitted).[5] Tracking organisation is not included as an explanatory variable due to the dominance of HEAT respondents in the data.

2) **Explore the relationship between Uni Connect activity and survey outcomes** – these models included activity data as predictors of the outcomes, together with the core set of learner explanatory variables as above. Variables for hours of activity, number of activities and a dummy for having received no activity are entered individually into separate models.[6]

3) **Identify whether speaking to someone and/or key influencers on learner decision-making were associated with the main survey outcomes** – these models included who learners spoke to about HE and who had the most influence on their decisions, together with the core set of learner explanatory variables.

4) **Explore whether learner experiences during the Covid-19 pandemic were associated with survey outcomes** – Covid-19 variables as predictors of the outcomes are included in these models, together with the core set of learner explanatory variables.

5) **Explore whether Uni Connect target learners were differentially affected by the Covid-19 pandemic**. First a simple regression model was calculated that included year group and a target learner dummy. The second model included the core set of learner explanatory variables.

6) **Predicting Covid-19 outcomes**. These models explore whether or not the Uni Connect target learners were differentially affected by the Covid-19 pandemic. Two sets of models were run with the Covid-19 variables as outcomes. Firstly, a simple model included only year dummies and a 'target learner' dummy as explanatory variables. In the second model, the control variables (sex, ethnicity, disability status, FSM status, first in family to go to HE, knowing someone in HE, deprivation IDACI, KS2 attainment in maths and reading, dummy variables for

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[5] The dummy variables for Year 11 and Years 12 or 13 are relative to the omitted baseline category of Years 9 or 10.
[6] Each model contains the control variables listed for the first set of models, plus one of: activity hours/activity number/no activity.

whether a target learner and year group dummy variable (a combined category of Years 9 and 10 was omitted) were included.

A total of 25 survey outcomes were included in the regression models, and these are defined in Table 3, which also describes the scale they are measured on. Some outcomes are binary answers ((e.g. no knowledge vs. a little knowledge/a lot of knowledge), others are measured on ordinal response scales which generally measure the respondents' strength of agreement with various statements. The binary outcomes are modelled using probit regressions, and ordinal scales are modelled using a linear model that treats the scale as if it were continuous.

Table 3: Wave 4 learner survey outcomes included in the regression models

Outcome No.	Name	Question	Scale type
1	NEXT	What do you want to do next?	Probit 1 = continue in education 0 = not continue in education
2	MOTIV	I am motivated to do well in my studies	Linear 1 = strongly disagree to 5 = strongly agree
3	GRADES	I could get the grades I need for further study	Linear 1 = strongly disagree to 5 = strongly agree
4	GOUNI	I could go to university if I wanted to	Linear 1 = strongly disagree to 5 = strongly agree
5	SUBJ	Knowledge of subjects you could study	Probit 0 = know nothing 1 = know a little/a lot
6	COUR	Knowledge of the types of course available.	Probit 0 = know nothing 1 = know a little/a lot
7	UCAS	Knowledge of how to apply through UCAS	Probit 0 = know nothing 1 = know a little/a lot
8	INFO	Knowledge of where to find information in applying	Probit 0 = know nothing 1 = know a little/a lot
9	QUALS	Knowledge of grades needed to get into the course you want	Probit 0 = know nothing 1 = know a little/a lot
10	STUD	Knowledge of what student life would be like	Probit 0 = know nothing 1 = know a little/a lot
11	CAREER	Knowledge of how it leads to careers you are interested in	Probit 0 = know nothing 1 = know a little/a lot

Outcome No.	Name	Question	Scale type
12	COST	Knowledge of the costs of study	Probit 0 = know nothing 1 = know a little/a lot
13	FIN	Knowledge of the financial support available	Probit 0 = know nothing 1 = know a little/a lot
14	LIVE	Knowledge of the options of where to live while studying	Probit 0 = know nothing 1 = know a little/a lot
15	APPLY	How likely are you to apply to higher education?	Linear 0 = not at all likely to 6 = almost certainly
16	LIKEME	Higher education is for people like me	Linear 1 = strongly disagree to 5 = strongly agree
17	FITIN	I would fit in well with others	Linear 1 = strongly disagree 5 = strongly agree
18	ACAD	I have the academic ability to succeed	Linear 1 = strongly disagree to 5 = strongly agree
19	COPE	I could cope with the level of study required	Linear 1 = strongly disagree to 5 = strongly agree
20	BROAD	It would broaden my horizons	Linear 1 = strongly disagree to 5 = strongly agree
21	CHALL	It would challenge me intellectually	Linear 1 = strongly disagree to 5 = strongly agree
22	VALU	It would give me valuable life skills	Linear 1 = strongly disagree to 5 = strongly agree
23	SOC	It would improve my social life	Linear 1 = strongly disagree to 5 = strongly agree
24	EARN	It would enable me to earn more	Linear 1 = strongly disagree to 5 = strongly agree
25	JOB	It would enable me to get a better job	Linear 1 = strongly disagree to 5 = strongly agree

Sample characteristics

Table 4 provides the learner characteristics from the Wave 4 (2021-22) survey data included in the multivariate regression analysis. A total of 42,459 learner responses to the Wave 4 (2021-22) survey could be matched to at least one NPD variable. However, the numbers vary for each variable due to missing responses for some survey questions: 45% of the sample is male, 14% are learners from a BAME background and 18% report having a disability. All year groups are represented in the analysis, with more learners from Year 9 (33%), Year 10 (26%) and Year 11 (25%) compared with Year 12 (8%) and Year 13 (7%). Over a third of learners have been eligible for FSM (34%) and on average, for the neighbourhoods that learners live in, 20% are living in income deprived families (as shown by the IDACI score). Just under one quarter (24%) of learners would be the first person in their family to enter HE, but over three-quarters (85%) know someone in HE. Learners have above average KS2 attainment and over three-quarters (77%) of learners achieved 5 or more GCSE and equivalents at A*-C (Level 2) including English and Maths. Just under two-fifths of learners (39%) are Uni Connect target learners.

Table 4: Learners' demographic characteristics for W4 survey regression analysis

Characteristic	Proportion	Available sample	Source
Male	45%	36,074	W4 survey
BAME	14%	35,403	W4 survey
Disabled	18%	31,094	W4 survey
First in family to go to HE	24%	37,343	W4 survey
First in family to do to HE – don't know	31%	37,343	W4 survey
Know someone in HE	85%	33,847	W4 survey
FSM status (EVERFSM_ALL)	34%	35,784	NPD
KS2 maths[7]	0.05%	40,471	NPD
KS2 reading[8]	0.04%	40,383	NPD
KS4 (KS4_LEVEL2_EM-94)[9]	77%	17,147	NPD
IDACI	20%	38,700	MHCLG
Year Group: Y9 Y10 Y11 Y12 Y13	33% 26% 25% 8% 7%	42,459 42,459 42,459 42,459 42,459	W4 survey W4 survey W4 survey W4 survey W4 survey

[7] Standardised raw KS2 maths score: pre-2015-16 = KS2_MATFINE, post 2015-16 = KS2_MATSCORE.

[8] Standardised raw KS2 reading score: pre-2015-16 = KS2_READFINE, post1015-16 = KS2_READSCORE.

[9] Achieved five or more GCSE and equivalents at A*-C (Level 2) including English and Maths.

Characteristic	Proportion	Available sample	Source
Uni Connect target learner	39%	42,466	W4 survey

Influences on learners' decision-making

Learners are most likely to have spoken to a family member about their HE decisions, followed by a friend, teacher and careers adviser. Most leaners reported speaking to someone about HE, with less than 1% reporting that they spoke to nobody. Learners report family members as the main influence on their HE decision-making and careers advisers as the least influential (Table 5Table 5).

Table 5: Who learners spoke to about HE and key influencers on HE decisions

Variable	Proportion	No.
Spoke to about HE:		
Family	79%	39,687
Friend	50%	38,605
Teacher	35%	37,842
Careers Adviser	18%	37,445
Nobody	0.4%	37,001
Who had most influence on HE decisions:		
Family	74%	36,886
Friend	11%	36,886
Teacher	9%	36,886
Careers Adviser	4%	36,886

Covid-19 variable characteristics

Table 6 outlines the descriptives for the Covid-19 variables included in the regression models. These detail learner perceptions about the impact of the Covid-19 pandemic that made it more difficult for them to study and the extent to which the pandemic affected their intentions to apply to HE. The most commonly reported barriers to studying during the pandemic were a lack of a quiet space to study and having limited access to teachers, with 29% of the sample reporting each of these problems. Just over a third of learners said that the Covid-19 pandemic did not cause them any problems with studying because they had everything they needed to learn at home. In terms of HE decisions, 6% reported that the pandemic had made them more likely to apply to HE, and 4% said it had made them less likely.

Table 6: Descriptives for Covid-19 perceptions

Variable	Proportion	No.
Did any of the following make it more difficult for you to study at home?		
Lack of a computer to use for school/college work	13%	34,690
Lack of other equipment or resources you would normally have in school/college	22%	34,930
Poor or no Wi-Fi connection at home	20%	34,903
Lack of a quiet space to study in school/college	29%	35,161
Limited or no contact with teachers	29%	35,193
Parents or carers unable to help with school/college work	21%	34,917
Being asked to help out with other family members	23%	34,983
Nothing; had everything needed to continue learning from home	34%	35,244
Impact of the pandemic on likelihood to apply to HE:		
Covid-19 has made me more likely to apply to HE	6%	23,117
Covid-19 has made me less likely to apply to HE	4%	23,117

W4 regression data tables

A total of 25 regression models were computed, one for each outcome. In all cases only the signs of the coefficient estimates are meaningful (showing the direction of the association), not the magnitude of the coefficient.[10] Probit models are estimated for binary outcomes in Table 7, Table 9, Table 11, and Table 13. Linear models are estimated for the ordinal outcomes in Tables Table 8, Table 10 and Table 12.

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[10] The asterisks in the regression results tables denote rejection of the null hypothesis (i.e. significance of the estimate) at *** p<0.01, ** p<0.05. * p<0.10. Note that no attempt to correct for multiple comparisons has been made. Given that multiple regression models are considered, the probability of a false rejection of the null hypothesis is increased. However, these significance levels are used here only as a guide to the key relationships in the data.

Table 7: Probit regressions for binary outcomes – basic demographics

VARIABLES	out1_next	out5_subj	out6_cour	out7_ucas	out8_info	out9_quals	out10_stud	out11_career	out12_cost	out13_fin	out14_live
Male	-0.703***	0.028	0.220***	0.106***	0.080***	0.036	-0.021	0.044*	0.070***	0.096***	-0.041**
	(0.025)	(0.028)	(0.021)	(0.019)	(0.020)	(0.023)	(0.021)	(0.023)	(0.020)	(0.019)	(0.020)
BAME	0.236***	0.016	0.027	0.037	-0.046	0.077**	0.060*	-0.001	0.179***	0.208***	0.079***
	(0.040)	(0.044)	(0.032)	(0.030)	(0.030)	(0.036)	(0.033)	(0.036)	(0.031)	(0.029)	(0.030)
Disabled	-0.062**	-0.146***	-0.006	-0.104***	-0.075***	-0.076***	-0.087***	-0.073**	-0.057**	-0.043*	-0.069***
	(0.031)	(0.035)	(0.027)	(0.025)	(0.026)	(0.029)	(0.027)	(0.029)	(0.025)	(0.024)	(0.025)
FSM	-0.110***	-0.080***	-0.041*	-0.000	0.004	-0.071***	-0.085***	-0.079***	-0.062***	0.025	-0.049**
	(0.027)	(0.031)	(0.023)	(0.022)	(0.023)	(0.025)	(0.023)	(0.026)	(0.022)	(0.021)	(0.022)
KS2_read	0.180***	0.052***	-0.008	-0.065***	-0.036**	0.025	-0.035**	0.017	0.004	-0.092***	-0.026*
	(0.017)	(0.019)	(0.015)	(0.014)	(0.014)	(0.016)	(0.015)	(0.016)	(0.014)	(0.013)	(0.014)
KS2_math	0.103***	0.057***	0.012	-0.010	0.023*	0.058***	0.055***	0.039**	0.070***	0.037***	0.036***
	(0.017)	(0.019)	(0.014)	(0.014)	(0.014)	(0.016)	(0.015)	(0.016)	(0.014)	(0.013)	(0.014)
First in family	-0.130***	-0.056	-0.009	-0.022	-0.030	-0.002	-0.047*	0.051	0.018	0.031	-0.059**
	(0.033)	(0.039)	(0.029)	(0.026)	(0.027)	(0.031)	(0.029)	(0.032)	(0.027)	(0.026)	(0.026)
DK if first	-0.300***	-0.174***	-0.184***	-0.191***	-0.137***	-0.155***	-0.221***	-0.174***	-0.202***	-0.166***	-0.234***
	(0.028)	(0.032)	(0.024)	(0.022)	(0.023)	(0.026)	(0.024)	(0.027)	(0.023)	(0.022)	(0.023)
Know someone	0.133***	0.212***	0.203***	0.186***	0.213***	0.221***	0.277***	0.311***	0.172***	0.203***	0.255***
	(0.034)	(0.037)	(0.029)	(0.028)	(0.028)	(0.031)	(0.029)	(0.031)	(0.028)	(0.027)	(0.028)
IDACI	-0.034	0.215*	0.133	0.120	0.075	0.241**	-0.073	0.170	0.245***	0.152*	-0.070
	(0.111)	(0.130)	(0.095)	(0.089)	(0.092)	(0.105)	(0.096)	(0.107)	(0.089)	(0.086)	(0.089)
Target learner	-0.062**	0.016	0.020	-0.004	-0.010	0.024	0.020	-0.008	-0.015	0.013	0.023
	(0.028)	(0.032)	(0.024)	(0.022)	(0.023)	(0.026)	(0.024)	(0.026)	(0.022)	(0.021)	(0.022)
Year 11	0.332***	0.433***	0.540***	0.731***	0.747***	0.550***	0.074***	0.201***	0.041**	0.040**	-0.048**
	(0.026)	(0.034)	(0.024)	(0.021)	(0.023)	(0.027)	(0.022)	(0.026)	(0.021)	(0.020)	(0.021)
Year 12/13	-0.281			1.011*			-0.166	0.101	0.214	0.936	0.633
	(0.570)			(0.594)			(0.502)	(0.592)	(0.515)	(0.594)	(0.596)
Observations	**16,057**	**18,697**	**18,716**	**18,699**	**18,697**	**18,697**	**18,701**	**18,698**	**18,705**	**18,690**	**18,694**

See Tables 3 to 6 for full variable definitions. Signs of the coefficient estimates are meaningful; the coefficient estimate cannot be interpreted as the marginal effect. Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$. * $p<0.10$.

Table 8: Linear regressions for ordinal outcomes – basic demographics

VARIABLES	2_motiv	3_grades	4_gouni	15_apply	16_likeme	17_fitin	18_acad	19_cope	20_broad	21_chall	22_valu	23_soc	24_earn	25_job
Male	-0.025*	0.123***	-0.111***	-0.358***	0.016	0.087***	0.084***	0.025*	-0.026**	-0.021*	-0.093***	-0.117***	-0.022*	-0.049***
	(0.013)	(0.012)	(0.014)	(0.018)	(0.014)	(0.014)	(0.013)	(0.014)	(0.013)	(0.011)	(0.012)	(0.014)	(0.012)	(0.012)
BAME	0.006	0.024	0.177***	0.360***	0.064***	0.111***	0.096***	0.093***	0.086***	0.108***	0.056***	0.024	0.084***	0.065***
	(0.019)	(0.018)	(0.021)	(0.027)	(0.022)	(0.021)	(0.019)	(0.022)	(0.020)	(0.017)	(0.018)	(0.021)	(0.018)	(0.018)
Disabled	-0.182***	-0.168***	-0.144***	-0.080***	-0.141***	-0.273***	-0.149***	-0.245***	-0.090***	-0.038**	-0.113***	-0.177***	-0.101***	-0.081***
	(0.017)	(0.016)	(0.018)	(0.023)	(0.018)	(0.018)	(0.016)	(0.019)	(0.017)	(0.015)	(0.016)	(0.018)	(0.016)	(0.016)
FSM	-0.100***	-0.092***	-0.090***	-0.019	-0.069***	-0.091***	-0.078***	-0.069***	-0.079***	-0.033**	-0.049***	-0.025	-0.014	-0.016
	(0.014)	(0.013)	(0.016)	(0.020)	(0.016)	(0.016)	(0.014)	(0.016)	(0.015)	(0.013)	(0.014)	(0.016)	(0.014)	(0.013)
KS2_read	0.049***	0.058***	0.112***	0.150***	0.039***	0.018*	0.074***	-0.000	0.172***	0.137***	0.048***	-0.011	0.059***	0.055***
	(0.009)	(0.008)	(0.010)	(0.013)	(0.010)	(0.010)	(0.009)	(0.010)	(0.009)	(0.008)	(0.008)	(0.010)	(0.008)	(0.008)
KS2_math	0.057***	0.132***	0.170***	0.138***	0.091***	0.032***	0.173***	0.097***	0.050***	0.057***	0.032***	0.033***	0.046***	0.050***
	(0.009)	(0.008)	(0.010)	(0.013)	(0.010)	(0.010)	(0.009)	(0.010)	(0.009)	(0.008)	(0.008)	(0.010)	(0.008)	(0.008)
First in family	0.054***	0.057***	0.024	-0.056**	0.005	0.006	0.035**	0.037*	0.028	0.031**	-0.007	-0.008	0.015	0.005
	(0.017)	(0.016)	(0.019)	(0.024)	(0.019)	(0.019)	(0.017)	(0.019)	(0.017)	(0.015)	(0.016)	(0.019)	(0.016)	(0.016)
DK if first	-0.107***	-0.103***	-0.241***	-0.458***	-0.203***	-0.176***	-0.199***	-0.201***	-0.191***	-0.153***	-0.156***	-0.168***	-0.142***	-0.135***
	(0.015)	(0.014)	(0.017)	(0.021)	(0.017)	(0.016)	(0.015)	(0.017)	(0.015)	(0.013)	(0.014)	(0.017)	(0.014)	(0.014)
Know someone	0.113***	0.091***	0.171***	0.267***	0.190***	0.220***	0.213***	0.212***	0.146***	0.099***	0.125***	0.161***	0.101***	0.091***
	(0.019)	(0.017)	(0.021)	(0.026)	(0.021)	(0.020)	(0.018)	(0.021)	(0.019)	(0.017)	(0.018)	(0.020)	(0.017)	(0.017)
IDACI	0.076	-0.007	0.086	0.209**	0.067	-0.224***	0.047	-0.015	-0.137**	-0.047	0.072	0.017	0.139**	0.113**
	(0.058)	(0.054)	(0.065)	(0.082)	(0.064)	(0.063)	(0.058)	(0.065)	(0.059)	(0.052)	(0.055)	(0.064)	(0.055)	(0.054)
Target learner	-0.013	0.005	-0.032**	-0.011	-0.018	-0.014	-0.017	0.008	-0.011	0.013	0.018	-0.036**	0.003	0.023*
	(0.015)	(0.014)	(0.016)	(0.020)	(0.016)	(0.016)	(0.014)	(0.016)	(0.015)	(0.013)	(0.014)	(0.016)	(0.014)	(0.014)
Year 11	0.040***	0.050***	-0.109***	-0.173***	0.012	0.063***	-0.003	-0.004	0.085***	0.079***	-0.043***	0.005	-0.052***	-0.093***
	(0.014)	(0.013)	(0.015)	(0.019)	(0.015)	(0.015)	(0.013)	(0.015)	(0.014)	(0.012)	(0.013)	(0.015)	(0.013)	(0.013)
Year 12/13	0.449	0.026	-0.046	0.420	-0.526	0.061	-0.200	-0.112	-0.100	0.100	0.398	-0.299	0.087	0.221
	(0.347)	(0.290)	(0.345)	(0.646)	(0.339)	(0.336)	(0.331)	(0.403)	(0.305)	(0.301)	(0.321)	(0.344)	(0.319)	(0.348)
Observations	**18,408**	**17,332**	**17,432**	**16,122**	**16,662**	**17,034**	**17,269**	**16,621**	**16,206**	**17,303**	**17,780**	**17,384**	**17,609**	**17,883**

See Tables 3 to 6 for full variable definitions. Signs of the coefficient estimates are meaningful; the coefficient estimate cannot be interpreted as the marginal effect. Standard errors in parentheses. *** p<0.01, ** p<0.05. * p<0.10.

Table 9: Probit regressions for binary outcomes – basic demographics KS4 attainment Years 11 to 13 only

VARIABLES	out1_next	out5_subj	out6_cour	out7_ucas	out8_info	out9_quals	out10_stud	out11_career	out12_cost	out13_fin	out14_live
With KS4 only											
Male	-0.640***	-0.137**	0.187***	-0.000	0.041	0.072	0.012	-0.002	0.027	0.051	-0.029
	(0.044)	(0.059)	(0.041)	(0.036)	(0.039)	(0.047)	(0.037)	(0.043)	(0.034)	(0.033)	(0.034)
BAME	0.207***	-0.005	-0.027	-0.092*	-0.074	0.045	0.095*	0.057	0.151***	0.232***	0.065
	(0.070)	(0.092)	(0.060)	(0.054)	(0.058)	(0.072)	(0.057)	(0.066)	(0.052)	(0.049)	(0.051)
Disabled	0.094*	-0.177***	-0.064	-0.152***	-0.143***	-0.050	-0.018	-0.066	-0.059	-0.074*	-0.109***
	(0.055)	(0.068)	(0.049)	(0.045)	(0.048)	(0.056)	(0.046)	(0.052)	(0.042)	(0.041)	(0.042)
FSM	-0.070	0.001	-0.100**	-0.027	-0.055	-0.115**	-0.092**	-0.093**	-0.078**	0.025	-0.073*
	(0.047)	(0.065)	(0.045)	(0.041)	(0.044)	(0.051)	(0.041)	(0.047)	(0.038)	(0.037)	(0.038)
KS4	0.642***	0.309***	0.095**	0.008	0.098**	0.308***	0.026	0.106**	0.055	-0.119***	-0.075*
	(0.046)	(0.063)	(0.046)	(0.042)	(0.045)	(0.051)	(0.042)	(0.048)	(0.038)	(0.038)	(0.039)
First in family	-0.207***	-0.138*	0.037	0.084*	0.020	-0.018	-0.067	0.080	-0.003	-0.008	-0.099**
	(0.056)	(0.077)	(0.052)	(0.047)	(0.050)	(0.060)	(0.047)	(0.056)	(0.043)	(0.042)	(0.043)
DK if first	-0.384***	-0.298***	-0.123**	-0.069	-0.029	-0.123**	-0.200***	-0.147***	-0.199***	-0.094**	-0.184***
	(0.052)	(0.071)	(0.050)	(0.045)	(0.049)	(0.057)	(0.045)	(0.052)	(0.042)	(0.041)	(0.042)
Know someone	0.098*	0.162**	0.140**	0.159***	0.121**	0.200***	0.240***	0.319***	0.152***	0.142***	0.181***
	(0.059)	(0.076)	(0.057)	(0.052)	(0.056)	(0.063)	(0.051)	(0.057)	(0.048)	(0.048)	(0.048)
IDACI	0.006	0.208	0.189	0.422**	0.254	0.325	0.051	0.479**	0.131	0.142	0.052
	(0.195)	(0.271)	(0.187)	(0.169)	(0.183)	(0.216)	(0.169)	(0.200)	(0.155)	(0.150)	(0.155)
Target learner	-0.127***	-0.070	0.041	-0.036	0.001	0.055	-0.023	-0.061	-0.084**	0.031	0.036
	(0.049)	(0.067)	(0.046)	(0.041)	(0.045)	(0.053)	(0.042)	(0.049)	(0.038)	(0.037)	(0.038)
Observations	**5,859**	**6,234**	**6,246**	**6,243**	**6,251**	**6,244**	**6,247**	**6,239**	**6,250**	**6,238**	**6,236**
With KS2 and KS4											
KS4	0.491***	0.168**	0.087	0.004	0.044	0.165***	-0.049	0.105*	-0.041	-0.070	-0.123***
	(0.056)	(0.076)	(0.055)	(0.050)	(0.054)	(0.062)	(0.050)	(0.058)	(0.046)	(0.045)	(0.046)
KS2_math	0.017	0.074*	0.010	0.018	0.022	0.084**	0.071***	0.012	0.074***	0.054**	0.089***
	(0.032)	(0.043)	(0.030)	(0.027)	(0.029)	(0.035)	(0.027)	(0.032)	(0.025)	(0.024)	(0.025)
KS2_read	0.147***	0.059	-0.010	-0.018	0.026	0.038	0.002	-0.009	0.020	-0.085***	-0.030
	(0.031)	(0.042)	(0.029)	(0.026)	(0.028)	(0.033)	(0.026)	(0.031)	(0.024)	(0.023)	(0.024)
Observations	**5,610**	**5,961**	**5,975**	**5,975**	**5,980**	**5,974**	**5,975**	**5,970**	**5,980**	**5,969**	**5,968**

See Tables 3 to 6 for full variable definitions. Signs of the coefficient estimates are meaningful; the coefficient estimate cannot be interpreted as the marginal effect. Standard errors in parentheses. *** p<0.01, ** p<0.05. * p<0.10. Models in the lower panel have the same set of controls as the upper panel.

Table 10: Linear regressions for ordinal outcomes – basic demographics KS4 attainment Years 11 to 13 only

VARIABLES	2_motiv	3_grades	4_gouni	15_apply	16_likeme	17_fitin	18_acad	19_cope	20_broad	21_chall	22_valu	23_soc	24_earn	25_job
With KS4 only														
Male	-0.027	0.131***	-0.109***	-0.428***	-0.022	0.042*	0.084***	0.014	-0.100***	-0.061***	-0.158***	-0.196***	-0.061***	-0.101***
	(0.022)	(0.021)	(0.025)	(0.034)	(0.025)	(0.024)	(0.022)	(0.024)	(0.022)	(0.020)	(0.021)	(0.024)	(0.021)	(0.021)
BAME	0.009	0.019	0.254***	0.509***	0.121***	0.113***	0.122***	0.124***	0.104***	0.108***	0.089***	0.038	0.080**	0.103***
	(0.033)	(0.031)	(0.037)	(0.049)	(0.037)	(0.035)	(0.032)	(0.036)	(0.033)	(0.029)	(0.031)	(0.036)	(0.032)	(0.032)
Disabled	-0.179***	-0.171***	-0.143***	-0.009	-0.173***	-0.292***	-0.178***	-0.209***	-0.040	-0.018	-0.071***	-0.129***	-0.047*	-0.054**
	(0.028)	(0.026)	(0.032)	(0.043)	(0.031)	(0.030)	(0.028)	(0.030)	(0.028)	(0.025)	(0.027)	(0.030)	(0.027)	(0.027)
FSM	-0.034	-0.032	-0.069**	0.022	-0.045	-0.093***	-0.037	-0.039	-0.038	0.005	0.006	0.022	0.019	0.017
	(0.025)	(0.023)	(0.028)	(0.039)	(0.028)	(0.027)	(0.025)	(0.027)	(0.025)	(0.022)	(0.024)	(0.027)	(0.024)	(0.024)
KS4	0.271***	0.414***	0.697***	0.717***	0.290***	0.158***	0.524***	0.289***	0.513***	0.413***	0.237***	0.171***	0.238***	0.248***
	(0.026)	(0.024)	(0.029)	(0.040)	(0.028)	(0.027)	(0.025)	(0.028)	(0.026)	(0.023)	(0.024)	(0.028)	(0.025)	(0.025)
First in family	0.085***	0.053**	-0.011	-0.153***	-0.044	-0.007	-0.015	-0.016	-0.061**	0.019	-0.051*	-0.055*	-0.006	-0.022
	(0.028)	(0.026)	(0.032)	(0.043)	(0.031)	(0.030)	(0.028)	(0.030)	(0.028)	(0.025)	(0.027)	(0.031)	(0.027)	(0.027)
DK if first	-0.144***	-0.148***	-0.355***	-0.682***	-0.243***	-0.203***	-0.262***	-0.243***	-0.277***	-0.216***	-0.213***	-0.210***	-0.203***	-0.202***
	(0.028)	(0.026)	(0.031)	(0.043)	(0.031)	(0.030)	(0.028)	(0.030)	(0.028)	(0.025)	(0.026)	(0.030)	(0.027)	(0.027)
Know someone	0.142***	0.112***	0.196***	0.273***	0.236***	0.252***	0.202***	0.218***	0.093***	0.074**	0.129***	0.145***	0.091***	0.079**
	(0.033)	(0.030)	(0.037)	(0.051)	(0.036)	(0.034)	(0.032)	(0.035)	(0.032)	(0.029)	(0.031)	(0.035)	(0.031)	(0.031)
IDACI	0.279***	-0.009	0.225*	0.363**	0.273**	-0.220**	0.183*	0.083	-0.056	-0.046	0.055	0.038	0.186*	0.160
	(0.102)	(0.095)	(0.115)	(0.156)	(0.113)	(0.109)	(0.101)	(0.111)	(0.101)	(0.091)	(0.097)	(0.111)	(0.098)	(0.097)
Target learner	0.008	-0.005	-0.060**	-0.052	0.002	0.016	-0.030	0.020	0.002	0.006	0.020	-0.048*	0.007	0.023
	(0.025)	(0.024)	(0.029)	(0.039)	(0.028)	(0.027)	(0.025)	(0.027)	(0.025)	(0.023)	(0.024)	(0.028)	(0.024)	(0.024)
Observations	**6,175**	**5,863**	**5,863**	**5,404**	**5,665**	**5,765**	**5,862**	**5,663**	**5,698**	**5,919**	**5,991**	**5,886**	**5,937**	**6,016**
With KS2 and KS4														
KS4	0.272***	0.285***	0.522***	0.511***	0.212***	0.157***	0.382***	0.284***	0.385***	0.268***	0.216***	0.197***	0.181***	0.195***
	(0.030)	(0.028)	(0.034)	(0.047)	(0.034)	(0.033)	(0.030)	(0.033)	(0.030)	(0.027)	(0.029)	(0.033)	(0.029)	(0.029)
KS2_math	0.012	0.114***	0.111***	0.098***	0.086***	0.008	0.123***	0.046**	0.014	0.048***	0.013	0.002	0.039**	0.041**
	(0.016)	(0.015)	(0.018)	(0.025)	(0.018)	(0.018)	(0.016)	(0.018)	(0.016)	(0.015)	(0.016)	(0.018)	(0.016)	(0.016)
KS2_read	-0.019	0.023	0.074***	0.107***	-0.004	0.013	0.021	-0.029*	0.104***	0.086***	0.006	-0.019	0.006	-0.005
	(0.016)	(0.015)	(0.018)	(0.024)	(0.018)	(0.017)	(0.015)	(0.017)	(0.016)	(0.014)	(0.015)	(0.017)	(0.015)	(0.015)
Observations	**5,905**	**5,612**	**5,617**	**5,173**	**5,427**	**5,511**	**5,615**	**5,420**	**5,455**	**5,666**	**5,737**	**5,635**	**5,682**	**5,758**

See Tables 3 to 6 for full variable definitions. Signs of the coefficient estimates are meaningful; the coefficient estimate cannot be interpreted as the marginal effect. Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$. * $p<0.10$. Models in the lower panel have the same set of controls as the upper panel.

Table 11: Probit regressions for binary outcomes – activity variables as predictors

VARIABLES	out1_next	out5_subj	out6_cour	out7_ucas	out8_info	out9_quals	out10_stud	out11_career	out12_cost	out13_fin	out14_live
Activity hours$^\$$	0.000	0.001	0.000	0.002***	0.002***	0.001**	0.001	0.001*	0.000	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Observations	**15,777**	**18,377**	**18,396**	**18,379**	**18,377**	**18,379**	**18,381**	**18,378**	**18,386**	**18,370**	**18,374**
Activity No.$^\$$	0.006	0.009	0.028***	0.004	0.007	0.029**	0.002	0.007	0.029***	0.042***	0.042***
	(0.012)	(0.014)	(0.010)	(0.010)	(0.010)	(0.012)	(0.010)	(0.011)	(0.009)	(0.009)	(0.009)
No activity$^\$$	-0.025	0.037	-0.033	0.006	0.004	-0.031	0.066***	0.022	-0.023	-0.029	-0.039*
	(0.026)	(0.030)	(0.022)	(0.021)	(0.021)	(0.024)	(0.023)	(0.025)	(0.021)	(0.020)	(0.021)
Activity Type											
Campus visits	0.003	0.536***	0.153**	0.204***	0.089	0.216***	0.138**	0.153*	0.165***	0.172***	0.233***
	(0.078)	(0.136)	(0.072)	(0.064)	(0.067)	(0.084)	(0.068)	(0.079)	(0.062)	(0.059)	(0.063)
IAG	-0.018	-0.045	0.022	-0.039*	0.009	-0.011	-0.032	-0.021	-0.026	0.003	-0.015
	(0.026)	(0.029)	(0.022)	(0.020)	(0.021)	(0.024)	(0.022)	(0.024)	(0.020)	(0.020)	(0.020)
Masterclasses	0.054	0.056	-0.020	0.029	0.034	0.048	0.085**	0.015	0.068*	0.085**	0.059
	(0.046)	(0.057)	(0.040)	(0.037)	(0.039)	(0.046)	(0.039)	(0.044)	(0.036)	(0.035)	(0.036)
Mentoring	-0.100*	0.006	0.150***	0.014	0.047	0.055	0.002	-0.013	0.060	0.154***	0.092**
	(0.053)	(0.069)	(0.051)	(0.045)	(0.047)	(0.056)	(0.048)	(0.053)	(0.044)	(0.043)	(0.044)
Summer Sch.	-0.124	-0.032	0.109	0.120	0.112	0.041	0.194**	0.148	0.164**	0.278***	0.167**
	(0.096)	(0.115)	(0.092)	(0.084)	(0.087)	(0.098)	(0.091)	(0.103)	(0.081)	(0.079)	(0.082)
Skills	0.050*	0.034	0.054**	0.036	0.002	0.045	-0.008	0.038	0.023	-0.019	0.025
	(0.029)	(0.034)	(0.025)	(0.023)	(0.024)	(0.028)	(0.025)	(0.028)	(0.023)	(0.022)	(0.023)
Staff Dev.	0.186		0.385*	-0.113	0.039	0.116	0.116	0.424*	0.133	0.094	0.187
	(0.184)		(0.197)	(0.144)	(0.159)	(0.193)	(0.158)	(0.218)	(0.146)	(0.138)	(0.147)
Other	0.022	-0.067**	-0.093***	-0.062***	-0.076***	-0.001	-0.069***	-0.059**	0.022	0.029	0.053**
	(0.029)	(0.034)	(0.025)	(0.024)	(0.024)	(0.028)	(0.025)	(0.028)	(0.024)	(0.023)	(0.024)
Observations$^\&$	**16,057**	**18,697**	**18,716**	**18,699**	**18,697**	**18,697**	**18,701**	**18,698**	**18,705**	**18,690**	**18,694**

See Tables 3 to 6 for full variable definitions. Control variables as Tables 3a/3b not reported here. Signs of the coefficient estimates are meaningful; the coefficient estimate cannot be interpreted as the marginal effect. Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$. * $p<0.10$. $^\$$ These variables are included separately in individual models. $^\&$ Sample size for all but the 'hours' model.

Table 12: Linear regressions for ordinal outcomes – activity variables as predictors

VARIABLES	2_motiv	3_grades	4_gouni	15_apply	16_likeme	17_fitin	18_acad	19_cope	20_broad	21_chall	22_valu	23_soc	24_earn	25_job
Activity hours$	0.000	0.000	0.000	-0.001	-0.001*	0.000	0.000	0.000	-0.001**	0	-0.000	0.001**	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	**18,090**	**17,034**	**17,131**	**15,842**	**16,373**	**16,746**	**16,967**	**16,338**	**15,924**	**17,002**	**17,476**	**17,095**	**17,308**	**17,577**
Activity No.$	0.004	0.024***	0.019***	0.008	0.005	0.018***	0.010*	0.010	0.025***	0.019***	0.015***	-0.001	0.012**	0.010*
	(0.006)	(0.006)	(0.007)	(0.009)	(0.007)	(0.007)	(0.006)	(0.007)	(0.006)	(0.005)	(0.006)	(0.007)	(0.006)	(0.006)
No activity$	-0.005	-0.046***	-0.057***	-0.027	-0.027*	-0.043***	-0.030**	-0.047***	-0.047***	-0.039***	-0.038***	0.007	-0.016	-0.026**
	(0.014)	(0.013)	(0.015)	(0.019)	(0.015)	(0.015)	(0.014)	(0.015)	(0.014)	(0.012)	(0.013)	(0.015)	(0.013)	(0.013)
Activity Type														
Campus visits	-0.013	-0.029	0.045	0.113**	0.021	0.028	0.004	-0.008	0.014	0.033	-0.018	-0.016	0.035	-0.001
	(0.039)	(0.036)	(0.043)	(0.055)	(0.043)	(0.043)	(0.039)	(0.044)	(0.039)	(0.035)	(0.037)	(0.043)	(0.037)	(0.037)
IAG	0.032**	0.051***	0.033**	-0.006	0.007	0.026*	0.039***	0.050***	0.026*	0.013	0.045***	0.042***	0.030**	0.029**
	(0.013)	(0.012)	(0.015)	(0.019)	(0.015)	(0.015)	(0.013)	(0.015)	(0.014)	(0.012)	(0.013)	(0.015)	(0.013)	(0.012)
Masterclasses	0.056**	0.032	0.025	-0.002	0.011	0.034	0.024	0.013	0.081***	0.070***	0.029	0.046*	0.065***	0.061***
	(0.024)	(0.022)	(0.026)	(0.033)	(0.026)	(0.025)	(0.023)	(0.026)	(0.023)	(0.021)	(0.022)	(0.026)	(0.022)	(0.022)
Mentoring	0.043	0.053**	0.053*	-0.029	0.010	0.042	0.012	-0.011	0.025	0.018	0.027	0.046	-0.007	-0.013
	(0.029)	(0.026)	(0.032)	(0.040)	(0.031)	(0.031)	(0.028)	(0.032)	(0.028)	(0.025)	(0.027)	(0.031)	(0.027)	(0.026)
Summer Sch.	-0.035	-0.038	-0.054	-0.050	-0.020	-0.052	-0.012	-0.068	-0.056	-0.111**	-0.082*	-0.068	-0.047	-0.065
	(0.052)	(0.048)	(0.058)	(0.074)	(0.057)	(0.057)	(0.051)	(0.058)	(0.052)	(0.047)	(0.050)	(0.058)	(0.049)	(0.049)
Skills	-0.002	0.004	-0.003	0.036*	0.006	-0.011	-0.021	-0.017	-0.009	0.001	0.010	-0.028*	-0.006	-0.010
	(0.015)	(0.014)	(0.017)	(0.021)	(0.017)	(0.017)	(0.015)	(0.017)	(0.015)	(0.014)	(0.014)	(0.017)	(0.014)	(0.014)
Staff Dev.	0.057	0.095	-0.041	-0.031	0.024	0.045	0.027	0.075	-0.121	-0.079	-0.074	0.068	-0.164*	-0.118
	(0.093)	(0.086)	(0.101)	(0.131)	(0.101)	(0.102)	(0.092)	(0.102)	(0.091)	(0.082)	(0.088)	(0.102)	(0.087)	(0.086)
Other	-0.113***	-0.003	0.008	-0.000	-0.011	0.025	-0.002	0.006	0.045***	0.032**	-0.028**	-0.107***	-0.021	-0.006
	(0.015)	(0.014)	(0.017)	(0.022)	(0.017)	(0.017)	(0.015)	(0.017)	(0.016)	(0.014)	(0.014)	(0.017)	(0.014)	(0.014)
Observations	**18,408**	**17,332**	**17,432**	**16,122**	**16,662**	**17,034**	**17,269**	**16,621**	**16,206**	**17,303**	**17,780**	**17,384**	**17,609**	**17,883**

See Tables 3 to 6 for full variable definitions. Control variables as Tables 3a/3b not reported here. Signs of the coefficient estimates are meaningful; the coefficient estimate cannot be interpreted as the marginal effect. Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$. * $p<0.10$. $ These variables are included separately in individual models. & Sample size for all but the 'hours' model.

Table 13: Probit regressions for binary outcomes – 'speak to' and influence variables as predictors

VARIABLES	out1_next	out5_subj	out6_cour	out7_ucas	out8_info	out9_quals	out10_stud	out11_career	out12_cost	out13_fin	out14_live
Who did you speak to about HE?											
Family	0.101***	0.456***	0.373***	0.338***	0.330***	0.406***	0.323***	0.435***	0.242***	0.259***	0.305***
	(0.030)	(0.032)	(0.025)	(0.024)	(0.024)	(0.027)	(0.025)	(0.027)	(0.024)	(0.024)	(0.024)
Friend	0.154***	0.163***	0.072***	0.014	0.065***	0.099***	0.089***	0.067**	0.047**	0.013	0.063***
	(0.027)	(0.033)	(0.023)	(0.022)	(0.022)	(0.026)	(0.024)	(0.027)	(0.022)	(0.021)	(0.022)
Teacher	0.141***	0.269***	0.237***	0.222***	0.184***	0.232***	0.168***	0.231***	0.167***	0.211***	0.149***
	(0.030)	(0.039)	(0.026)	(0.024)	(0.025)	(0.030)	(0.026)	(0.030)	(0.024)	(0.023)	(0.024)
Careers ad.	-0.023	0.142***	0.277***	0.204***	0.248***	0.220***	0.080**	0.147***	0.112***	0.134***	0.119***
	(0.038)	(0.053)	(0.036)	(0.032)	(0.034)	(0.041)	(0.033)	(0.039)	(0.030)	(0.029)	(0.030)
Nobody	-0.343*	0.127	0.274	0.123	0.306*	0.134	0.212	0.543**	0.239	0.220	0.493***
	(0.180)	(0.277)	(0.199)	(0.166)	(0.185)	(0.211)	(0.186)	(0.269)	(0.168)	(0.156)	(0.183)
Observations	**15,843**	**18,443**	**18,462**	**18,446**	**18,443**	**18,444**	**18,445**	**18,443**	**18,451**	**18,434**	**18,438**
Who had the most influence on you?											
Family	0.271***	0.120	0.078	0.144**	0.173***	0.019	-0.050	0.065	0.084	0.109*	0.101
	(0.075)	(0.089)	(0.069)	(0.064)	(0.065)	(0.075)	(0.071)	(0.076)	(0.064)	(0.063)	(0.065)
Friend	0.342***	-0.007	-0.061	-0.003	0.087	-0.029	-0.070	-0.072	0.032	0.036	0.043
	(0.083)	(0.097)	(0.075)	(0.070)	(0.072)	(0.083)	(0.078)	(0.083)	(0.071)	(0.069)	(0.071)
Teacher	0.455***	0.194*	0.054	0.114	0.167**	0.026	-0.008	0.162*	0.161**	0.156**	0.108
	(0.087)	(0.103)	(0.077)	(0.072)	(0.074)	(0.085)	(0.080)	(0.087)	(0.073)	(0.071)	(0.073)
Careers ad.	0.291***	0.040	0.222**	0.214***	0.300***	0.027	-0.095	0.069	0.062	0.045	0.037
	(0.095)	(0.114)	(0.089)	(0.081)	(0.084)	(0.096)	(0.088)	(0.096)	(0.080)	(0.078)	(0.080)
Observations	**15,145**	**17,556**	**17,578**	**17,555**	**17,560**	**17,560**	**17,564**	**17,552**	**17,560**	**17,543**	**17,546**

See Tables 3 to 6 for full variable definitions. Control variables as Tables 3a/3b not reported here. Signs of the coefficient estimates are meaningful; the coefficient estimate cannot be interpreted as the marginal effect. Standard errors in parentheses. *** p<0.01, ** p<0.05. * p<0.10. All variables are included separately in individual models.

4. Longitudinal W2–W4 analysis

This section summarises the multivariate regression analysis carried out to explore the predictors of the changes in Uni Connect outcomes between Wave 2 (2019-20) and Wave 4 (2021-22). These data are for respondents for whom we have usable data from both the W2 and W4 surveys. The advantage of these longitudinal data is that we are able to control for time-invariant unobserved effects on outcomes (such as family background and learner personality traits), as well as the observable information we have on learners. The disadvantage is the much smaller size of the analysis sample compared to the cross-sectional analyses.

To explore the longitudinal impact of the programme on short-term and intermediate outcomes, multivariate regression analysis was carried out on the W2-W4-T4 longitudinal dataset. Several regression models were calculated for the following purposes:

– Identify the key (Wave 2) predictors of changes in the main survey outcomes

– Explore the relationship between Uni Connect activity and changes in survey outcomes

– Explore whether learner experiences during the Covid-19 pandemic are associated with changes in survey outcomes

As noted above, since the activity data provided by HEAT (which represents 99% of data coverage) now includes a distinction between Uni Connect and non-Uni Connect activity, our analysis can control for these activities delivered outside of the programme.

There are 25 key survey outcomes as previously detailed in Table 3. Some outcomes are binary answers (e.g. no knowledge vs. a little knowledge/a lot of knowledge) and others are measured on ordinal response scales, which generally measure the respondents' strength of agreement with various statements. The regression models explore change in the 25 survey outcomes between Waves 2 (2019-20) and 4 (2021-22); for example, for the change in the binary scales there are three possible outcomes (-1, 0, +1). For simplicity all changes are modelled using linear regression that treats the resulting scale as if it were continuous.

It is important to note that in all cases the modal change in outcome between Wave 2 (2019-20) and Wave 4 (2021-22) is zero. For example, for outcome 7 (knowledge of how to apply via UCAS) 59% of respondents do not change their response between waves 2 (2019-22) and 4 (2021-22); similarly for outcome 15 (how likely is it that you will apply to HE?), 38% do not change. This lack of variability limits our ability to identify the predictors of change.

Sample characteristics

Table 14 provides the learner demographics and attainment from the longitudinal, linked W2-W4 data included in the multivariate regression analysis. There are 4,920 learner responses in the W2-W4-T4 dataset, of which around 3,500 are usable responses, given that the numbers vary slightly for each variable due to missing responses for some survey questions.

42% of the sample is male, 13% are BAME learners and 18% report having a disability. Three year groups are represented in the analysis, with more learners from Year 11 (66%)

than Year 12 (18%) or Year 13 (16%). 35% of learners have FSM status and, on average, for the neighbourhoods that learners live in, 20% of learners are living in income-deprived families (as shown by the IDACI score). At Wave 2 (2019-20), 20% of learners reported that they would be the first in their family to go to HE, and 32% said that they did not know whether they would be the first in their family to go to HE. More learners at Wave 4 (2021-22) report that they will be the first in their family to go to HE, with less stating that they do not know. Most learners (85%) at Wave 2 (2019-20) reported that they 'know someone' in HE. 44% of the sample are Uni Connect target learners.

Learners have above average KS2 attainment (compared to an average population score of 0). Four fifths of learners (79%) achieved five or more GCSE and equivalents at A*–C (Leve 2) including English and Maths.

Table 14: Learners' demographic characteristics and attainment for the longitudinal W2-W4 data

Characteristic	Proportion	No.	Source
Male	42%	3,560	W4 survey
BAME	13%	3,602	W4 survey
Disabled	18%	3,190	W4 survey
FSM status (EVERFSM_ALL)	35%	2,667	NPD
IDACI	20%	3,889	MHCLG
W2 - First in family to go to HE - yes	31%	3,658	W4 survey
W2 – First in family to go to HE - don't know	32%	3,641	W4 survey
W4 – First in family to go to HE -yes	31%	3,658	W4 survey
W4 - First in family to go to HE - don't know	20%	3,658	W4 survey
W2 - Know someone in HE	88%	3,775	W4 survey
KS2 maths[11]	15%	4,005	NPD
KS2 reading[12]	9%	4,000	NPD
KS4 (KS4_LEVEL2_EM-94)[13]	79%	4,034	NPD
Year Group: Y11 Y12 Y13	66% 18% 16%	4,034 4,034 4,034	W4 survey W4 survey W4 survey
Uni Connect target learner	44%	4,034	W4 survey

[11] Standardised raw KS2 maths score: pre-2015-16 = KS2_MATFINE, post 2015-16 = KS2_MATSCORE.

[12] Standardised raw KS2 reading score: pre-2015-16 = KS2_READFINE, post1015-16 = KS2_READSCORE.

[13] Achieved five or more GCSE and equivalents at A*-C (Level 2) including English and Maths.

Influences on learners' decision-making

Table 15 reports descriptive statistics regarding who learners spoke to about HE and key influencers on HE decisions. Learners were most likely to have spoken to a family member about HE decisions, followed by a friend, a teacher and finally a careers adviser. Less than 1% of learners reported speaking to no one about their HE decisions. Family members are more likely than any other group to be the most important influence on learners' HE decision making.

Table 15: Who learners spoke to about HE and key influencers on HE decisions.

Variable	Proportion	No.
Spoke to about HE:		
Family	85%	3,948
Friend	68%	3,884
Teacher	55%	3,834
Careers Adviser	36%	3,775
Nobody	0.01%	3,678
Who had most influence on HE decisions:		
Family	69%	3,720
Friend	12%	3,720
Teacher	10%	3,720
Careers Adviser	7%	3,720

Covid-19 variable characteristics

Table 16 reports descriptive statistics for the Covid-19 questions. The most frequent barriers to studying during the pandemic were having limited access to teachers (35%), followed by 31% saying that they lacked a quiet space to study. The same proportion (31%) of learners reported that the Covid-19 pandemic did not cause them any problems with studying because they had everything they needed to learn at home. A minority of learners (5%) reported that the Covid-19 pandemic had made them more likely to apply to HE, and the same proportion said it made them less likely.

Table 16: Descriptives for Covid-19 perceptions

Variable	Proportion	No.
Did any of the following make it more difficult for you to study at home?		
Lack of a computer to use for school/college work	12%	3,549
Lack of other equipment or resources you would normally have in school/college	26%	3,605
Poor or no Wi Fi connection at home	21%	3,575
Lack of a quiet space to study in school/college	31%	3,623
Limited or no contact with teachers	35%	3,614
Parents or carers unable to help with school/college work	23%	3,593
Being asked to help out with other family members	24%	3,572
Nothing; had everything needed to continue learning from home	31%	3,592

Variable	Proportion	No.
Impact of the pandemic on likelihood to apply to HE:		
Covid-19 has made me more likely to apply to HE	5%	2,078
Covid-19 has made me less likely to apply to HE	5%	2,078

W2-W4 regression data tables

A total of 25 linear regression models for each outcome were computed to explore the changes in binary and ordinal outcomes between Wave 2 (2019-20) and Wave 4 (2021-22), as presented in Tables 17–26. In all cases only the signs of the coefficient estimates are meaningful (showing the direction of the association), not the magnitude of the coefficient.[14]

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[14] The asterisks in the regression results tables denote rejection of the null hypothesis (i.e. significance of the estimate) at *** p<0.01, ** p<0.05. * p<0.10. Note that no attempt to correct for multiple comparisons has been made. Given that multiple regression models are considered, the probability of a false rejection of the null hypothesis is increased. However, these significance levels are used here only as a guide to the key relationships in the data.

Table 17: Linear regressions for change in binary outcomes – basic demographics

VARIABLES	1_next	5_subj	6_cour	7_ucas	8_info	9_quals	10_stud	11_career	12_cost	13_fin	14_live
Male	0.038	-0.011	0.038	-0.011	-0.025	0.013	-0.007	0.019	-0.068**	-0.038	-0.021
	(0.024)	(0.018)	(0.027)	(0.030)	(0.029)	(0.025)	(0.027)	(0.024)	(0.031)	(0.032)	(0.032)
BAME	-0.033	-0.041	-0.088**	-0.089**	-0.073*	-0.017	0.027	0.032	-0.000	-0.029	-0.008
	(0.035)	(0.027)	(0.039)	(0.045)	(0.043)	(0.037)	(0.040)	(0.035)	(0.045)	(0.048)	(0.047)
Disabled	0.016	0.006	-0.066*	-0.019	-0.011	0.006	0.020	-0.019	-0.042	-0.018	-0.041
	(0.031)	(0.023)	(0.034)	(0.039)	(0.037)	(0.031)	(0.035)	(0.030)	(0.040)	(0.042)	(0.041)
FSM	0.054**	-0.039*	-0.002	-0.039	0.005	-0.024	0.010	0.045*	-0.028	0.032	-0.018
	(0.027)	(0.020)	(0.030)	(0.034)	(0.032)	(0.027)	(0.030)	(0.026)	(0.034)	(0.036)	(0.036)
KS2_read	-0.002	0.023*	0.020	0.050**	0.019	0.044***	0.019	0.007	0.024	0.019	-0.009
	(0.017)	(0.012)	(0.018)	(0.021)	(0.020)	(0.017)	(0.019)	(0.016)	(0.021)	(0.022)	(0.022)
KS2_math	-0.011	-0.007	-0.013	0.008	0.021	-0.009	0.006	-0.009	-0.027	-0.007	0.009
	(0.017)	(0.013)	(0.019)	(0.021)	(0.020)	(0.017)	(0.019)	(0.017)	(0.022)	(0.023)	(0.022)
First in family	-0.082**	-0.048*	0.010	0.039	0.005	-0.045	0.034	-0.008	0.024	-0.014	-0.031
	(0.034)	(0.026)	(0.038)	(0.044)	(0.041)	(0.035)	(0.039)	(0.034)	(0.044)	(0.047)	(0.045)
DK if first	0.015	0.009	0.027	0.073**	0.059*	0.027	0.089***	0.080***	0.084**	0.029	0.090**
	(0.027)	(0.020)	(0.030)	(0.034)	(0.032)	(0.027)	(0.030)	(0.026)	(0.034)	(0.036)	(0.035)
Know someone	-0.082**	-0.061**	-0.057	-0.043	-0.040	-0.096***	-0.002	-0.027	-0.048	-0.067	-0.118***
	(0.034)	(0.025)	(0.037)	(0.042)	(0.040)	(0.034)	(0.038)	(0.033)	(0.043)	(0.045)	(0.044)
IDACI	-0.240**	0.162**	-0.075	-0.015	-0.112	-0.116	0.067	-0.014	0.323**	0.079	0.213
	(0.101)	(0.076)	(0.112)	(0.128)	(0.121)	(0.104)	(0.115)	(0.099)	(0.129)	(0.136)	(0.134)
Target learner	-0.007	-0.053***	0.026	0.001	0.010	0.022	-0.070**	-0.026	-0.001	0.021	-0.042
	(0.026)	(0.019)	(0.029)	(0.033)	(0.031)	(0.027)	(0.030)	(0.026)	(0.033)	(0.035)	(0.034)
Observations	**1,332**	**1,673**	**1,668**	**1,668**	**1,672**	**1,667**	**1,627**	**1,622**	**1,623**	**1,624**	**1,619**

See Tables 14 to 16 for full variable definitions. Signs of the coefficient estimates are meaningful; the coefficient estimate cannot be interpreted as the marginal effect. Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$. * $p<0.10$. Responses for first in family and know someone are based on Wave 2 (2019-20).

Table 18: Linear regressions for change in ordinal outcomes – basic demographics

VARIABLES	2_motiv	3_grades	4_gouni	15_apply	16_likeme	17_fitin	18_acad	19_cope	20_broad	21_chall	22_valu	23_soc	24_earn	25_job
Male	0.128**	0.055	0.056	-0.179**	0.017	-0.088	-0.021	0.020	-0.026	0.017	-0.036	-0.155**	-0.040	-0.055
	(0.053)	(0.053)	(0.061)	(0.076)	(0.060)	(0.060)	(0.051)	(0.058)	(0.056)	(0.048)	(0.050)	(0.062)	(0.052)	(0.048)
BAME	0.033	0.100	0.173*	0.159	0.107	-0.007	0.039	0.007	0.080	0.109	0.026	-0.096	-0.003	0.034
	(0.078)	(0.078)	(0.089)	(0.107)	(0.091)	(0.091)	(0.076)	(0.086)	(0.083)	(0.069)	(0.075)	(0.092)	(0.077)	(0.070)
Disabled	-0.144**	-0.105	-0.138*	-0.139	-0.067	-0.051	-0.084	-0.178**	-0.086	0.082	-0.027	0.079	0.100	0.052
	(0.068)	(0.068)	(0.078)	(0.097)	(0.076)	(0.076)	(0.065)	(0.073)	(0.071)	(0.061)	(0.064)	(0.079)	(0.067)	(0.061)
FSM	0.009	-0.034	-0.085	-0.038	-0.015	0.027	0.006	0.024	-0.012	0.003	0.009	0.036	0.050	0.060
	(0.059)	(0.059)	(0.068)	(0.084)	(0.067)	(0.067)	(0.058)	(0.065)	(0.064)	(0.054)	(0.056)	(0.070)	(0.058)	(0.054)
KS2_read	0.016	0.024	0.049	0.102**	0.103**	0.049	0.033	0.075*	0.004	0.042	0.014	0.061	0.006	-0.005
	(0.037)	(0.037)	(0.042)	(0.052)	(0.042)	(0.042)	(0.036)	(0.040)	(0.039)	(0.033)	(0.035)	(0.044)	(0.036)	(0.033)
KS2_math	-0.001	0.064*	0.091**	0.059	-0.014	-0.010	0.050	-0.012	0.035	0.021	0.008	0.041	0.023	0.060*
	(0.038)	(0.037)	(0.043)	(0.053)	(0.043)	(0.043)	(0.037)	(0.042)	(0.040)	(0.034)	(0.036)	(0.044)	(0.037)	(0.034)
First in family	0.033	-0.155**	-0.092	0.007	-0.135	0.069	-0.076	-0.100	-0.094	0.042	0.011	-0.116	0.026	0.081
	(0.076)	(0.075)	(0.085)	(0.105)	(0.085)	(0.085)	(0.073)	(0.080)	(0.079)	(0.068)	(0.072)	(0.088)	(0.074)	(0.069)
DK if first	0.065	-0.030	-0.025	0.050	0.004	-0.007	0.022	-0.029	-0.023	0.018	0.023	-0.012	0.034	0.098*
	(0.059)	(0.059)	(0.068)	(0.086)	(0.067)	(0.067)	(0.058)	(0.065)	(0.063)	(0.053)	(0.056)	(0.070)	(0.058)	(0.053)
know someone	-0.122*	-0.091	-0.046	-0.132	-0.049	0.008	-0.040	-0.095	-0.184**	-0.180***	-0.126*	-0.110	-0.015	-0.018
	(0.074)	(0.073)	(0.083)	(0.111)	(0.084)	(0.085)	(0.072)	(0.082)	(0.081)	(0.067)	(0.070)	(0.088)	(0.073)	(0.067)
IDACI	0.036	0.262	-0.148	-0.054	0.298	-0.536**	-0.035	-0.059	0.019	-0.101	-0.048	0.488*	0.198	0.323
	(0.224)	(0.223)	(0.255)	(0.319)	(0.255)	(0.254)	(0.217)	(0.248)	(0.236)	(0.204)	(0.213)	(0.268)	(0.220)	(0.204)
Target learner	0.081	0.038	0.018	-0.043	-0.049	0.084	-0.032	0.055	0.099*	0.038	0.036	-0.110	-0.008	0.008
	(0.057)	(0.057)	(0.065)	(0.082)	(0.065)	(0.065)	(0.055)	(0.063)	(0.060)	(0.051)	(0.054)	(0.068)	(0.056)	(0.052)
Observations	**1,641**	**1,428**	**1,432**	**1,249**	**1,326**	**1,336**	**1,402**	**1,311**	**1,307**	**1,438**	**1,520**	**1,424**	**1,503**	**1,548**

See Tables 14 to 16 for full variable definitions. Signs of the coefficient estimates are meaningful; the coefficient estimate cannot be interpreted as the marginal effect.

Standard errors in parentheses. *** p<0.01, ** p<0.05. * p<0.10. Responses for first in family and know someone are based on Wave 2 (2019-20).

Table 19: Linear regressions for change in binary outcomes – activity variables as predictors

VARIABLES	1_next	5_subj	6_cour	7_ucas	8_info	9_quals	10_stud	11_career	12_cost	13_fin	14_live
Activity hours$^\$$	-0.001	-0.000	-0.000	0.001*	-0.000	-0.000	-0.001*	0.001	-0.001*	-0.001	0.000
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Observations	**1,327**	**1,667**	**1,662**	**1,662**	**1,666**	**1,661**	**1,621**	**1,616**	**1,617**	**1,618**	**1,613**
Activity No.$^\$$	-0.010	-0.005	0.005	-0.015	-0.030***	-0.001	0.002	0.003	-0.011	-0.004	0.005
	(0.009)	(0.007)	(0.010)	(0.012)	(0.011)	(0.010)	(0.010)	(0.009)	(0.012)	(0.012)	(0.012)
No Activity$^\$$	0.013	-0.002	-0.035	0.056	0.101**	0.061	0.027	-0.027	0.121**	0.062	0.072
	(0.041)	(0.031)	(0.045)	(0.052)	(0.049)	(0.042)	(0.046)	(0.040)	(0.053)	(0.055)	(0.055)
Campus visits	-0.050	0.015	0.016	0.109**	0.046	0.098**	0.049	0.031	0.010	0.078	0.033
	(0.043)	(0.031)	(0.047)	(0.053)	(0.051)	(0.043)	(0.047)	(0.041)	(0.053)	(0.056)	(0.055)
IAG	0.034	-0.012	-0.019	0.033	0.026	-0.049*	0.023	0.025	-0.080**	-0.010	-0.062*
	(0.027)	(0.020)	(0.029)	(0.034)	(0.032)	(0.027)	(0.030)	(0.026)	(0.034)	(0.036)	(0.035)
Masterclasses	-0.012	-0.092***	0.009	-0.038	0.029	0.024	-0.001	0.032	0.010	0.012	0.007
	(0.030)	(0.023)	(0.034)	(0.039)	(0.037)	(0.031)	(0.034)	(0.030)	(0.039)	(0.041)	(0.040)
Mentoring	-0.058	0.023	0.023	0.034	-0.095**	-0.028	-0.014	-0.050	-0.001	-0.062	0.012
	(0.036)	(0.028)	(0.041)	(0.047)	(0.044)	(0.038)	(0.042)	(0.036)	(0.047)	(0.049)	(0.048)
Summer Sch.	0.030	-0.031	-0.134*	-0.069	-0.095	0.091	0.033	0.064	0.079	0.038	0.015
	(0.094)	(0.047)	(0.070)	(0.079)	(0.075)	(0.064)	(0.106)	(0.091)	(0.116)	(0.122)	(0.121)
Skills	0.002	0.033*	0.001	-0.051	-0.080***	0.012	-0.034	-0.016	-0.046	-0.036	-0.009
	(0.026)	(0.019)	(0.028)	(0.032)	(0.031)	(0.026)	(0.029)	(0.025)	(0.033)	(0.034)	(0.034)
Staff Dev.	-0.045	-0.144	-0.228	-0.410	-0.241	-0.231	0.031	0.043	-0.520	-0.028	-0.011
	(0.304)	(0.253)	(0.373)	(0.425)	(0.404)	(0.345)	(0.380)	(0.327)	(0.427)	(0.450)	(0.439)
Other	-0.015	0.034*	0.025	-0.101***	-0.072**	-0.025	0.026	0.004	0.072**	0.046	0.089***
	(0.025)	(0.019)	(0.028)	(0.032)	(0.030)	(0.026)	(0.028)	(0.025)	(0.032)	(0.034)	(0.033)
Observations$^\&$	**1,332**	**1,673**	**1,668**	**1,668**	**1,672**	**1,667**	**1,627**	**1,622**	**1,623**	**1,624**	**1,619**

See Tables 14 to 16 for full variable definitions. Control variables as Tables 17 and 18 not reported here. Signs of the coefficient estimates are meaningful; the coefficient estimate cannot be interpreted as the marginal effect. Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$. * $p<0.10$. $^\$$ These variables are included separately in individual models. $^\&$ Sample size for all but the 'hours' model.

Table 20: Linear regressions for change in ordinal outcomes – activity variables as predictors

VARIABLES	2_motiv	3_grades	4_gouni	15_apply	16_likeme	17_fitin	18_acad	19_cope	20_broad	21_chall	22_valu	23_soc	24_earn	25_job
Activity hours$	0.001	0.001	-0.001	0.000	0.000	-0.000	0.000	-0.000	-0.001	-0.001	-0.000	0.002	-0.001	0.000
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Observations	**1,635**	**1,424**	**1,426**	**1,243**	**1,322**	**1,331**	**1,397**	**1,307**	**1,301**	**1,432**	**1,514**	**1,418**	**1,497**	**1,542**
Activity No.$	-0.021	0.023	-0.009	0.002	-0.002	0.013	-0.042**	-0.015	0.017	0.016	0.002	0.025	-0.003	0.007
	(0.020)	(0.020)	(0.023)	(0.029)	(0.023)	(0.023)	(0.020)	(0.022)	(0.022)	(0.018)	(0.019)	(0.024)	(0.020)	(0.018)
No Activity$	0.156*	-0.035	-0.055	0.158	-0.024	-0.105	0.139	0.017	0.050	-0.067	0.017	-0.146	0.057	-0.032
	(0.091)	(0.091)	(0.103)	(0.127)	(0.102)	(0.105)	(0.090)	(0.102)	(0.096)	(0.081)	(0.086)	(0.108)	(0.088)	(0.081)
Campus visits	0.152	0.026	0.187*	0.245*	-0.022	-0.113	-0.000	0.057	-0.003	-0.101	-0.004	0.160	0.197**	0.061
	(0.093)	(0.090)	(0.105)	(0.135)	(0.106)	(0.105)	(0.091)	(0.103)	(0.098)	(0.081)	(0.088)	(0.109)	(0.090)	(0.083)
IAG	-0.067	0.061	0.019	-0.086	0.014	-0.019	-0.053	-0.054	0.127**	0.066	0.054	0.058	0.025	0.059
	(0.058)	(0.058)	(0.066)	(0.083)	(0.067)	(0.067)	(0.057)	(0.064)	(0.062)	(0.053)	(0.056)	(0.069)	(0.058)	(0.053)
Masterclasses	0.089	-0.068	-0.118	-0.066	0.015	-0.022	-0.086	0.059	-0.010	0.022	-0.045	0.012	-0.058	-0.002
	(0.067)	(0.067)	(0.076)	(0.094)	(0.077)	(0.076)	(0.064)	(0.074)	(0.071)	(0.061)	(0.064)	(0.078)	(0.065)	(0.061)
Mentoring	0.165**	0.090	-0.039	0.066	-0.024	0.074	0.022	-0.058	0.014	-0.012	0.028	0.084	0.021	-0.009
	(0.081)	(0.079)	(0.091)	(0.115)	(0.092)	(0.092)	(0.078)	(0.087)	(0.086)	(0.074)	(0.079)	(0.095)	(0.079)	(0.074)
Summer Sch.	0.073	-0.147	-0.096	0.312	0.021	0.218	-0.170	0.129	-0.090	-0.183	0.029	0.013	0.048	-0.062
	(0.140)	(0.135)	(0.163)	(0.207)	(0.158)	(0.156)	(0.132)	(0.149)	(0.146)	(0.128)	(0.133)	(0.163)	(0.136)	(0.130)
Skills	-0.181***	0.007	-0.014	0.086	-0.027	0.030	-0.085	-0.085	-0.020	0.021	-0.028	-0.038	-0.017	-0.014
	(0.057)	(0.056)	(0.064)	(0.080)	(0.064)	(0.065)	(0.055)	(0.063)	(0.060)	(0.051)	(0.054)	(0.066)	(0.055)	(0.051)
Staff Dev.	-0.496	0.035	0.125	-0.023	-0.460	-1.037	-0.041	0.153	-0.535	-1.261	0.071	1.008	0.065	-0.262
	(0.736)	(0.683)	(0.786)	(1.294)	(0.759)	(1.073)	(0.664)	(0.725)	(0.698)	(0.881)	(0.677)	(0.808)	(0.693)	(0.650)
Other	-0.160***	0.067	0.059	-0.127	0.025	0.067	0.023	0.033	-0.008	0.048	0.015	-0.032	-0.075	-0.017
	(0.056)	(0.055)	(0.063)	(0.080)	(0.064)	(0.063)	(0.054)	(0.061)	(0.059)	(0.050)	(0.053)	(0.066)	(0.054)	(0.050)
Observations&	**1,641**	**1,428**	**1,432**	**1,249**	**1,326**	**1,336**	**1,402**	**1,311**	**1,307**	**1,438**	**1,520**	**1,424**	**1,503**	**1,548**

See Tables 14 to 16 for full variable definitions. Control variables as Tables 17 and 18 not reported here. Signs of the coefficient estimates are meaningful; the coefficient estimate cannot be interpreted as the marginal effect. Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$. * $p<0.10$. $ These variables are included separately in individual models. & Sample size for all but the 'hours' model.

Table 21: Linear regression for change in binary outcomes – 'speak to' and influence variables as predictors

	1_next	5_subj	6_cour	7_ucas	8_info	9_quals	10_stud	11_career	12_cost	13_fin	14_live
w4_spk_fam	-0.000	0.013	0.067	0.047	0.013	-0.012	0.101**	0.074**	0.100**	0.054	-0.001
	(0.040)	(0.028)	(0.041)	(0.047)	(0.044)	(0.039)	(0.042)	(0.037)	(0.048)	(0.050)	(0.048)
w4_spk_frd	0.006	0.001	0.085**	-0.044	-0.008	0.023	0.019	0.033	0.014	-0.005	0.031
	(0.031)	(0.023)	(0.033)	(0.038)	(0.036)	(0.031)	(0.034)	(0.029)	(0.038)	(0.040)	(0.039)
w4_spk_tch	-0.005	0.013	-0.035	0.088***	0.049	0.022	0.018	0.060**	0.063*	0.103***	0.046
	(0.027)	(0.020)	(0.029)	(0.034)	(0.032)	(0.028)	(0.030)	(0.026)	(0.034)	(0.036)	(0.035)
w4_spk_car	0.018	-0.001	-0.022	0.032	0.021	-0.020	0.032	-0.003	0.015	0.044	0.062*
	(0.026)	(0.020)	(0.029)	(0.033)	(0.031)	(0.027)	(0.029)	(0.025)	(0.033)	(0.035)	(0.034)
w4_spk_nob	-0.078	-0.084	0.157	-0.065	-0.147	-0.121	-0.015	0.064	0.382*	0.117	-0.156
	(0.143)	(0.121)	(0.176)	(0.202)	(0.190)	(0.166)	(0.177)	(0.154)	(0.200)	(0.211)	(0.203)
Observations	**1,188**	**1,506**	**1,502**	**1,502**	**1,508**	**1,502**	**1,456**	**1,452**	**1,454**	**1,454**	**1,449**
w4_inf_fam	0.090	0.015	-0.085	0.153	0.231**	0.055	0.039	0.072	0.151	0.125	0.293**
	(0.086)	(0.067)	(0.100)	(0.115)	(0.109)	(0.093)	(0.100)	(0.086)	(0.114)	(0.119)	(0.118)
w4_inf_frd	0.080	0.030	-0.153	0.140	0.261**	0.037	0.001	0.021	0.080	0.054	0.255**
	(0.092)	(0.071)	(0.106)	(0.122)	(0.115)	(0.098)	(0.106)	(0.091)	(0.121)	(0.127)	(0.125)
w4_inf_tch	0.054	-0.061	-0.205*	0.161	0.227*	-0.051	-0.027	0.030	0.127	0.237*	0.256**
	(0.094)	(0.072)	(0.108)	(0.124)	(0.117)	(0.100)	(0.109)	(0.094)	(0.124)	(0.130)	(0.128)
w4_inf_car	0.068	-0.014	-0.057	0.110	0.237**	-0.002	-0.024	0.018	0.063	0.082	0.251*
	(0.094)	(0.073)	(0.109)	(0.125)	(0.118)	(0.101)	(0.109)	(0.094)	(0.124)	(0.130)	(0.129)
Constant	0.088	0.148**	0.338***	0.205	0.094	0.196*	-0.041	-0.002	-0.121	-0.014	-0.182
	(0.095)	(0.073)	(0.109)	(0.125)	(0.118)	(0.101)	(0.110)	(0.094)	(0.125)	(0.131)	(0.129)
Observations	**1,256**	**1,563**	**1,560**	**1,559**	**1,563**	**1,558**	**1,521**	**1,517**	**1,517**	**1,517**	**1,513**

See Tables 14 to 16 for full variable definitions. Control variables as Tables 17 and 18 not reported here. Signs of the coefficient estimates are meaningful; the coefficient estimate cannot be interpreted as the marginal effect. Standard errors in parentheses. *** p<0.01, ** p<0.05. * p<0.10. All variables are included separately in individual models.

Table 22: Linear regressions for change in ordinal outcomes – 'speak to' and influence variables as predictors

VARIABLES	2_motiv	3_grades	4_gouni	15_apply	16_likeme	17_fitin	18_acad	19_cope	20_broad	21_chall	22_valu	23_soc	24_earn	25_job
w4_spk_fam	0.043	0.126	0.059	0.092	0.221**	0.009	0.160*	0.204**	-0.000	-0.049	-0.039	0.116	0.045	-0.033
	(0.083)	(0.083)	(0.095)	(0.119)	(0.095)	(0.096)	(0.083)	(0.091)	(0.090)	(0.077)	(0.080)	(0.099)	(0.081)	(0.076)
w4_spk_frd	0.066	0.053	0.172**	0.078	-0.001	0.056	-0.027	0.067	-0.090	-0.018	0.038	-0.104	-0.010	0.032
	(0.067)	(0.066)	(0.077)	(0.095)	(0.076)	(0.077)	(0.066)	(0.074)	(0.072)	(0.061)	(0.063)	(0.078)	(0.066)	(0.061)
w4_spk_tch	0.111*	0.088	0.124*	0.158*	0.063	0.186***	0.113*	0.095	0.087	0.052	0.167***	0.180***	0.118**	0.004
	(0.059)	(0.058)	(0.067)	(0.082)	(0.067)	(0.068)	(0.058)	(0.066)	(0.063)	(0.053)	(0.056)	(0.070)	(0.058)	(0.053)
w4_spk_car	0.075	0.073	-0.006	0.072	0.072	-0.073	0.043	0.052	0.034	0.014	-0.068	-0.035	0.055	0.008
	(0.058)	(0.056)	(0.065)	(0.079)	(0.065)	(0.066)	(0.057)	(0.063)	(0.061)	(0.052)	(0.055)	(0.068)	(0.056)	(0.052)
w4_spk_nob	-0.736**	-0.210	-0.074	0.462	-0.107	0.605	0.403	0.361	-0.282	-0.512	-0.058	0.510	0.253	-0.072
	(0.374)	(0.392)	(0.393)	(0.448)	(0.406)	(0.445)	(0.388)	(0.460)	(0.493)	(0.315)	(0.339)	(0.434)	(0.328)	(0.309)
Constant	-0.232*	-0.217*	-0.302**	-0.198	-0.223	-0.027	-0.147	-0.290**	0.247*	0.204*	-0.016	0.029	-0.195	-0.246**
	(0.124)	(0.122)	(0.139)	(0.175)	(0.141)	(0.145)	(0.123)	(0.137)	(0.134)	(0.114)	(0.118)	(0.147)	(0.122)	(0.113)
Observations	1,474	1,280	1,289	1,121	1,192	1,203	1,257	1,177	1,170	1,295	1,366	1,276	1,347	1,394
w4_inf_fam	-0.325	0.155	-0.165	0.242	0.013	0.216	0.071	0.235	0.075	-0.094	-0.045	-0.160	-0.267	-0.250
	(0.205)	(0.200)	(0.232)	(0.255)	(0.220)	(0.230)	(0.184)	(0.222)	(0.206)	(0.176)	(0.190)	(0.233)	(0.196)	(0.173)
w4_inf_frd	-0.397*	0.138	-0.111	0.003	-0.097	0.096	0.009	0.190	-0.058	-0.103	-0.075	-0.166	-0.396*	-0.330*
	(0.218)	(0.212)	(0.245)	(0.275)	(0.234)	(0.244)	(0.196)	(0.235)	(0.219)	(0.188)	(0.202)	(0.248)	(0.208)	(0.184)
w4_inf_tch	-0.342	0.187	-0.074	0.442	0.174	0.275	0.176	0.268	0.183	-0.130	0.035	-0.217	-0.280	-0.208
	(0.221)	(0.216)	(0.249)	(0.282)	(0.239)	(0.248)	(0.200)	(0.239)	(0.223)	(0.191)	(0.206)	(0.251)	(0.211)	(0.187)
w4_inf_car	-0.449**	0.200	-0.285	0.132	0.078	0.264	0.153	0.339	0.249	0.055	-0.080	-0.155	-0.239	-0.272
	(0.223)	(0.217)	(0.251)	(0.281)	(0.240)	(0.251)	(0.203)	(0.240)	(0.227)	(0.194)	(0.207)	(0.255)	(0.213)	(0.189)
Constant	0.253	-0.174	0.005	-0.241	-0.045	-0.110	-0.063	-0.238	0.133	0.236	0.041	0.234	0.119	-0.081
	(0.223)	(0.218)	(0.249)	(0.288)	(0.243)	(0.253)	(0.204)	(0.243)	(0.228)	(0.194)	(0.209)	(0.256)	(0.214)	(0.191)
Observations	1,536	1,342	1,342	1,177	1,241	1,252	1,310	1,232	1,227	1,347	1,427	1,337	1,403	1,446

See Tables 14 to 16 for full variable definitions. Control variables as Tables 17 and 18 not reported here. Signs of the coefficient estimates are meaningful; the coefficient estimate cannot be interpreted as the marginal effect. Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$. * $p<0.10$. All variables are included separately in individual models.

Table 23: Linear regressions for change in binary outcomes – Covid-19 variables as predictors

VARIABLES	1_next	5_subj	6_cour	7_ucas	8_info	9_quals	10_stud	11_career	12_cost	13_fin	14_live
cov_pc	0.069*	-0.001	0.039	0.035	0.069	0.035	-0.056	-0.053	0.011	-0.033	-0.137***
	(0.041)	(0.031)	(0.045)	(0.052)	(0.048)	(0.042)	(0.046)	(0.040)	(0.052)	(0.055)	(0.053)
cov_eqp	-0.016	0.034	-0.023	-0.015	-0.011	0.014	-0.052	-0.052*	-0.065	-0.001	-0.063
	(0.032)	(0.025)	(0.035)	(0.041)	(0.038)	(0.033)	(0.036)	(0.031)	(0.041)	(0.044)	(0.042)
cov_wifi	0.017	0.029	0.011	0.004	0.027	0.018	0.038	0.018	0.038	0.034	-0.078*
	(0.035)	(0.026)	(0.038)	(0.044)	(0.041)	(0.036)	(0.039)	(0.034)	(0.044)	(0.047)	(0.045)
cov_spc	-0.008	0.026	0.001	-0.041	0.022	0.018	-0.032	-0.016	-0.039	0.056	-0.012
	(0.032)	(0.024)	(0.035)	(0.040)	(0.038)	(0.033)	(0.036)	(0.031)	(0.041)	(0.043)	(0.041)
cov_tch	-0.010	0.036	0.014	-0.011	-0.005	0.006	0.010	-0.022	0.045	0.020	0.006
	(0.031)	(0.024)	(0.035)	(0.040)	(0.038)	(0.033)	(0.036)	(0.031)	(0.041)	(0.043)	(0.041)
cov_hlp	-0.057*	-0.026	-0.008	0.073*	0.097**	-0.005	-0.027	0.016	-0.024	-0.005	0.056
	(0.033)	(0.025)	(0.037)	(0.042)	(0.040)	(0.034)	(0.038)	(0.033)	(0.043)	(0.045)	(0.043)
cov_par	0.066**	0.031	0.052	0.006	-0.029	-0.022	0.001	-0.010	-0.051	-0.016	-0.022
	(0.034)	(0.026)	(0.037)	(0.043)	(0.040)	(0.035)	(0.038)	(0.033)	(0.044)	(0.046)	(0.044)
cov_non	-0.016	0.049*	0.035	-0.003	0.052	0.024	-0.024	-0.069*	0.013	0.116**	-0.022
	(0.037)	(0.028)	(0.041)	(0.047)	(0.044)	(0.038)	(0.042)	(0.036)	(0.047)	(0.050)	(0.048)
Observations	**1,152**	**1,460**	**1,457**	**1,458**	**1,462**	**1,457**	**1,411**	**1,407**	**1,409**	**1,410**	**1,405**
cov_more	-0.007	-0.044	-0.086	-0.024	0.051	-0.024	-0.083	0.074	-0.075	-0.081	0.031
	(0.073)	(0.053)	(0.080)	(0.088)	(0.086)	(0.074)	(0.083)	(0.071)	(0.094)	(0.098)	(0.098)
cov_less	-0.045	-0.075	0.071	-0.107	-0.067	-0.067	-0.014	-0.046	0.190*	0.035	0.072
	(0.080)	(0.056)	(0.083)	(0.092)	(0.087)	(0.078)	(0.085)	(0.073)	(0.098)	(0.101)	(0.101)
Observations	**799**	**1,003**	**997**	**999**	**999**	**999**	**974**	**972**	**972**	**971**	**968**

See Tables 14 to 16 for full variable definitions. Control variables as Tables 17 and 18 not reported here. Signs of the coefficient estimates are meaningful; the coefficient estimate cannot be interpreted as the marginal effect. Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$. * $p<0.10$. All variables are included separately in individual models.

Table 24: Linear regressions for change in ordinal outcomes – Covid-19 variables as predictors

VARIABLES	2_motiv	3_grades	4_gouni	15_apply	16_likeme	17_fitin	18_acad	19_cope	20_broad	21_chall	22_valu	23_soc	24_earn	25_job
cov_pc	-0.089	-0.262***	-0.028	0.096	-0.105	-0.033	-0.073	-0.013	0.073	-0.033	0.108	-0.070	-0.141	0.005
	(0.090)	(0.089)	(0.105)	(0.126)	(0.103)	(0.103)	(0.091)	(0.101)	(0.100)	(0.084)	(0.088)	(0.106)	(0.089)	(0.084)
cov_eqp	-0.114	-0.008	-0.164**	0.003	0.075	0.033	0.002	0.023	-0.103	-0.014	-0.121*	-0.101	-0.061	-0.081
	(0.071)	(0.070)	(0.080)	(0.098)	(0.080)	(0.081)	(0.069)	(0.079)	(0.075)	(0.065)	(0.068)	(0.084)	(0.070)	(0.064)
cov_wifi	0.014	0.034	-0.082	-0.011	0.129	0.025	0.114	0.040	-0.087	-0.019	-0.087	-0.023	-0.031	-0.073
	(0.076)	(0.075)	(0.087)	(0.102)	(0.087)	(0.087)	(0.076)	(0.084)	(0.081)	(0.069)	(0.072)	(0.089)	(0.074)	(0.069)
cov_spc	-0.050	-0.024	-0.066	-0.001	-0.030	-0.009	-0.026	-0.032	0.119	0.087	0.034	-0.229***	-0.004	-0.021
	(0.070)	(0.069)	(0.080)	(0.096)	(0.079)	(0.080)	(0.069)	(0.077)	(0.074)	(0.064)	(0.067)	(0.082)	(0.068)	(0.063)
cov_tch	-0.014	0.011	-0.003	0.079	0.033	-0.202**	0.006	-0.100	-0.022	0.019	0.033	-0.058	0.095	-0.027
	(0.070)	(0.068)	(0.079)	(0.096)	(0.079)	(0.080)	(0.068)	(0.078)	(0.074)	(0.064)	(0.067)	(0.083)	(0.069)	(0.064)
cov_par	0.046	0.074	-0.002	-0.059	-0.102	0.009	-0.051	-0.083	0.029	-0.062	0.046	0.004	0.127*	0.033
	(0.074)	(0.072)	(0.084)	(0.100)	(0.083)	(0.085)	(0.072)	(0.082)	(0.079)	(0.068)	(0.071)	(0.087)	(0.072)	(0.067)
cov_hlp	0.049	-0.052	0.059	-0.141	-0.060	-0.111	-0.081	0.021	-0.068	0.051	-0.009	-0.031	0.122*	-0.002
	(0.075)	(0.074)	(0.085)	(0.101)	(0.084)	(0.086)	(0.073)	(0.083)	(0.079)	(0.068)	(0.071)	(0.087)	(0.072)	(0.067)
cov_non	0.041	-0.011	-0.130	-0.092	0.039	0.016	0.107	0.023	-0.040	0.092	0.018	-0.266***	0.090	0.051
	(0.082)	(0.080)	(0.092)	(0.115)	(0.093)	(0.092)	(0.079)	(0.090)	(0.087)	(0.074)	(0.078)	(0.096)	(0.080)	(0.074)
Observations	1,430	1,242	1,248	1,082	1,154	1,166	1,219	1,142	1,134	1,257	1,324	1,235	1,305	1,350
cov_more	0.044	-0.166	-0.018	0.758***	0.206	-0.011	0.060	0.121	-0.061	-0.145	0.048	-0.195	-0.165	-0.034
	(0.156)	(0.160)	(0.183)	(0.209)	(0.169)	(0.179)	(0.146)	(0.159)	(0.164)	(0.135)	(0.146)	(0.180)	(0.153)	(0.143)
cov_less	-0.371**	-0.072	0.040	-0.337	-0.140	-0.217	-0.403***	-0.567***	-0.117	-0.368**	-0.560***	-0.893***	-0.369**	-0.251*
	(0.161)	(0.176)	(0.189)	(0.226)	(0.177)	(0.177)	(0.152)	(0.177)	(0.178)	(0.144)	(0.155)	(0.187)	(0.157)	(0.147)
Observations	983	860	850	730	796	811	835	786	787	858	907	850	895	926

See Tables 14 to 16 for full variable definitions. Control variables as Tables 17 and 18 not reported here. Signs of the coefficient estimates are meaningful; the coefficient estimate cannot be interpreted as the marginal effect. Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$. * $p<0.10$. All variables are included separately in individual models.

Table 25: Linear regressions for change in binary outcomes – basic demographics with KS4 attainment

VARIABLES	1_next	5_subj	6_cour	7_ucas	8_info	9_quals	10_stud	11_career	12_cost	13_fin	14_live
Male	0.045*	-0.013	0.035	-0.015	-0.028	0.009	-0.004	0.020	-0.071**	-0.034	-0.017
	(0.024)	(0.018)	(0.026)	(0.030)	(0.028)	(0.024)	(0.027)	(0.023)	(0.030)	(0.032)	(0.031)
BAME	-0.035	-0.042	-0.077**	-0.089**	-0.070*	-0.026	0.028	0.027	-0.003	-0.031	-0.013
	(0.034)	(0.026)	(0.039)	(0.044)	(0.042)	(0.036)	(0.040)	(0.034)	(0.045)	(0.047)	(0.046)
Disabled	0.024	0.011	-0.055	-0.021	-0.014	0.002	0.020	-0.017	-0.037	-0.006	-0.039
	(0.031)	(0.023)	(0.034)	(0.038)	(0.036)	(0.031)	(0.035)	(0.030)	(0.039)	(0.041)	(0.040)
FSM	0.069**	-0.030	0.008	-0.031	0.006	-0.020	0.010	0.054**	-0.025	0.048	-0.015
	(0.027)	(0.020)	(0.030)	(0.034)	(0.032)	(0.027)	(0.031)	(0.026)	(0.034)	(0.036)	(0.035)
KS4	0.058**	0.054**	0.037	0.130***	0.057*	0.052*	0.041	0.009	0.007	0.068*	-0.005
	(0.029)	(0.021)	(0.031)	(0.036)	(0.034)	(0.029)	(0.032)	(0.028)	(0.036)	(0.038)	(0.038)
First in family	-0.076**	-0.047*	0.006	0.040	0.007	-0.049	0.031	-0.006	0.023	-0.004	-0.029
	(0.034)	(0.026)	(0.038)	(0.043)	(0.041)	(0.035)	(0.039)	(0.034)	(0.044)	(0.046)	(0.045)
DK if first	0.021	0.014	0.030	0.076**	0.060*	0.023	0.088***	0.082***	0.091***	0.035	0.090**
	(0.027)	(0.020)	(0.029)	(0.033)	(0.032)	(0.027)	(0.030)	(0.026)	(0.034)	(0.036)	(0.035)
Know someone	-0.086**	-0.058**	-0.057	-0.033	-0.032	-0.083**	0.005	-0.027	-0.041	-0.061	-0.110**
	(0.034)	(0.025)	(0.037)	(0.042)	(0.040)	(0.034)	(0.038)	(0.032)	(0.042)	(0.045)	(0.044)
IDACI	-0.221**	0.161**	-0.114	-0.011	-0.129	-0.117	0.051	-0.027	0.312**	0.077	0.202
	(0.101)	(0.075)	(0.111)	(0.127)	(0.121)	(0.103)	(0.114)	(0.098)	(0.129)	(0.135)	(0.133)
Target learner	-0.003	-0.055***	0.030	-0.006	0.007	0.015	-0.070**	-0.029	0.000	0.022	-0.044
	(0.026)	(0.019)	(0.029)	(0.032)	(0.031)	(0.027)	(0.030)	(0.025)	(0.033)	(0.035)	(0.034)
Observations	**1,346**	**1,691**	**1,687**	**1,686**	**1,691**	**1,686**	**1,644**	**1,638**	**1,639**	**1,640**	**1,635**

See Tables 14 to 16 for full variable definitions. Control variables as Tables 17 and 18 not reported here. Signs of the coefficient estimates are meaningful; the coefficient estimate cannot be interpreted as the marginal effect. Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$. * $p<0.10$. Models in the lower panel have the same set of control as the upper panel. Responses for first in family and know someone are from Wave 2 (2019-20).

Table 26: Linear regressions for change in ordinal outcomes – basic demographics with KS4 attainment

VARIABLES	2_motiv	3_grades	4_gouni	15_apply	16_likeme	17_fitin	18_acad	19_cope	20_broad	21_chall	22_valu	23_soc	24_earn	25_job
Male	0.133**	0.070	0.086	-0.170**	0.021	-0.098*	-0.026	0.020	-0.012	0.024	-0.042	-0.143**	-0.012	-0.036
	(0.052)	(0.052)	(0.060)	(0.075)	(0.059)	(0.059)	(0.051)	(0.057)	(0.055)	(0.047)	(0.050)	(0.061)	(0.051)	(0.047)
BAME	0.041	0.117	0.194**	0.162	0.113	0.012	0.042	0.028	0.098	0.127*	0.032	-0.076	0.017	0.040
	(0.077)	(0.077)	(0.088)	(0.105)	(0.090)	(0.090)	(0.075)	(0.085)	(0.081)	(0.068)	(0.074)	(0.091)	(0.077)	(0.070)
Disabled	-0.124*	-0.089	-0.094	-0.132	-0.054	-0.053	-0.080	-0.158**	-0.080	0.090	-0.036	0.075	0.111*	0.050
	(0.067)	(0.068)	(0.077)	(0.096)	(0.076)	(0.076)	(0.065)	(0.073)	(0.071)	(0.060)	(0.064)	(0.079)	(0.067)	(0.061)
FSM	0.013	-0.010	-0.048	-0.016	0.002	0.051	0.040	0.063	-0.016	0.016	0.022	0.061	0.059	0.069
	(0.059)	(0.060)	(0.068)	(0.084)	(0.067)	(0.067)	(0.058)	(0.065)	(0.064)	(0.054)	(0.057)	(0.071)	(0.058)	(0.054)
KS4	0.068	0.194***	0.363***	0.383***	0.211***	0.081	0.215***	0.214***	0.104	0.163***	0.026	0.220***	0.104*	0.090
	(0.063)	(0.063)	(0.073)	(0.091)	(0.071)	(0.071)	(0.062)	(0.069)	(0.071)	(0.058)	(0.061)	(0.074)	(0.062)	(0.058)
First in family	0.041	-0.119	-0.071	0.013	-0.114	0.093	-0.056	-0.098	-0.089	0.050	0.029	-0.085	0.047	0.103
	(0.075)	(0.074)	(0.085)	(0.104)	(0.084)	(0.085)	(0.072)	(0.079)	(0.079)	(0.067)	(0.071)	(0.088)	(0.074)	(0.069)
DK if first	0.071	-0.026	-0.032	0.050	0.009	-0.004	0.022	-0.020	-0.020	0.020	0.023	-0.007	0.036	0.092*
	(0.059)	(0.059)	(0.068)	(0.085)	(0.067)	(0.067)	(0.057)	(0.065)	(0.062)	(0.053)	(0.056)	(0.069)	(0.058)	(0.053)
Know someone	-0.137*	-0.083	-0.050	-0.127	-0.023	0.005	-0.064	-0.086	-0.175**	-0.186***	-0.124*	-0.100	-0.013	-0.006
	(0.073)	(0.073)	(0.083)	(0.110)	(0.083)	(0.085)	(0.072)	(0.081)	(0.080)	(0.066)	(0.070)	(0.088)	(0.073)	(0.067)
IDACI	0.089	0.169	-0.145	0.001	0.240	-0.592**	-0.048	-0.094	0.036	-0.145	-0.085	0.383	0.131	0.244
	(0.223)	(0.223)	(0.255)	(0.317)	(0.254)	(0.253)	(0.217)	(0.245)	(0.234)	(0.202)	(0.213)	(0.267)	(0.220)	(0.203)
Target learner	0.074	0.038	-0.003	-0.078	-0.051	0.086	-0.042	0.044	0.086	0.036	0.031	-0.099	0.007	0.007
	(0.057)	(0.057)	(0.065)	(0.082)	(0.065)	(0.065)	(0.055)	(0.062)	(0.060)	(0.051)	(0.054)	(0.067)	(0.056)	(0.052)
Observations	**1,658**	**1,445**	**1,448**	**1,262**	**1,338**	**1,350**	**1,415**	**1,325**	**1,320**	**1,454**	**1,533**	**1,438**	**1,518**	**1,564**

See Tables 14 to 16 for full variable definitions. Control variables as Tables 17 and 18 not reported here. Signs of the coefficient estimates are meaningful; the coefficient estimate cannot be interpreted as the marginal effect. Standard errors in parentheses. *** p<0.01, ** p<0.05. * p<0.10. Models in the lower panel have the same set of control as the upper panel. Responses for first in family and know someone are from Wave 2 (2019-20).

Appendix 1: Learner Survey Core Questions

1. Which year of study are you in?

❍ School – year 9
❍ School – year 10
❍ Sixth form – year12 (lower sixth)
❍ Sixth form – year 13 (upper sixth)
❍ College – level 3 – year 1
❍ College – level 3 – year 2

2. When you finish your current studies, what would you most like to do next?

❍ Get a full-time job
❍ Get a part-time job
❍ Study higher education at a further education college or other further education provider
❍ Study at a local university or another higher education institution
❍ Study away from home at university or another higher education institution
❍ Get a job and study at the same time
❍ Begin an apprenticeship
❍ Begin a higher/degree apprenticeship
❍ Take a gap year
❍ Other (*please specify*)_____
❍ Don't know

3. Who have you spoken to about higher education?

❑ Family
❑ Friend(s)
❑ Teacher(s)
❑ Careers adviser(s)
❑ Other (*please specify*) _____
❍ Nobody

4. *Apart from yourself*, who has had the greatest influence on your decision about what to do next?

❍ Family
❍ Friend(s)
❍ Teacher(s)
❍ Careers adviser(s)
❍ Other (*please specify*) _____

5. Has Covid-19 influenced your decision about what to do next?

❍ No, not at all
❍ Yes, to some extent
❍ Yes, a great deal
❍ I'm not sure

6. How much do you agree with the following statements?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
I am motivated to do well in my studies	○	○	○	○	○	○
I can get the grades I need for further study	○	○	○	○	○	○
I believe I could go to university if I wanted to	○	○	○	○	○	○

7. Where did you study between March and July 2020 during the Covid-19 lockdown?

○ I stayed in school/college
○ I went to school/college and studied from home
○ I studied from home

*If you stayed in school/college, skip question 8 and go to **question 9**.*

8. Did any of the following make it more difficult for you to continue learning at home? *Please tick all that apply*

❑ Lack of a computer that you could use for your school/college work
❑ Lack of other equipment or resources that you would normally have in school/college to help you learn
❑ Poor or no Wi-Fi connection at home
❑ Limited contact with tutor and/or subject teachers at school/college
❑ Lack of a quiet space to study
❑ Being asked to help out with other family members, such as younger brothers and sisters
❑ Parents/carers unable to help with school/college work
○ Nothing, I had everything I needed to continue learning at home

9. Where did you study during the school closures due to Covid-19 between January and March 2021?

○ I stayed in school/college
○ I went to school/college and studied from home
○ I studied from home

*If you stayed in school/college, skip question 10 and go to **question 11**.*

10. Did any of the following make it more difficult for you to continue learning at home?
Please tick all that apply

- ❑ Lack of a computer that you could use for your school/college work
- ❑ Lack of other equipment or resources that you would normally have in school/college to help you learn
- ❑ Poor or no Wi-Fi connection at home
- ❑ Limited contact with tutor and/or subject teachers at school/college
- ❑ Lack of a quiet space to study
- ❑ Being asked to help out with other family members, such as younger brothers and sisters
- ❑ Parents/carers unable to help with school/college work
- ◯ Nothing, I had everything I needed to continue learning at home

11. How much do you know about the following things about higher education?

	Nothing	A little	A lot
The subjects that you could study	◯	◯	◯
Different types of course, such as: degree, foundation degree, or higher/degree apprenticeships	◯	◯	◯
How to apply to study higher education	◯	◯	◯
Where to find information about applying	◯	◯	◯
The qualifications and grades needed to get into higher education	◯	◯	◯

12. How much do you know about the following aspects of higher education?

	Nothing	A little	A lot
What student life would be like	◯	◯	◯
How it leads to careers that you may be interested in	◯	◯	◯
The costs of study	◯	◯	◯
The financial support available	◯	◯	◯
The options about where to live whilst studying	◯	◯	◯

*If you are in Sixth form year 13 (upper sixth) or College level 3 (year 2), go to **question 13**, if not, skip to **question 14**.*

13. Have you applied to study at higher education?

Yes	○	*Please go to **question 17***
No	○	*Please go to **question 16***

14. Has Covid-19 affected your decision about whether or not to apply to higher education at age 18 or 19?

❍ Yes, I'm now more likely to apply (1)
❍ Yes, I'm now less likely to apply (2)
❍ No, I'm just as likely to apply to now as I was before Covid-19 (3)
❍ I'm not sure (4)

15. How likely are you to apply to higher education at age 18 or 19?

Definitely won't apply	○	*Please go to question 16*
Very unlikely	○	*Please go to question 16*
Fairly unlikely	○	*Please go to question 16*
Fairly likely	○	*Please go to question 17*
Very likely	○	*Please go to question 17*
Definitely will apply	○	*Please go to question 17*
Don't know	○	*Please go to question 16*

16. What is the main reason you might NOT go on to study higher education?

❍ My current qualifications are enough
❍ I have decided on a specific career (that does not require further study)
❍ I want to work and earn money
❍ The cost is too much
❍ It depends on the grades I get
❍ I don't have the necessary study skills
❍ It does not appeal to me
❍ I want to travel
❍ I am still undecided
❍ There is nowhere close enough to home
❍ COVID-19 has put me off going to higher education
❍ Other reason (*please specify*) _____

*If you answered question 16, skip question 17 and go to **question 18***

17. What is the main reason you want to go to higher education?

❍ I enjoy learning
❍ To enable me to get a well-paid job
❍ It's what my parents expect me to do
❍ It's what all my friends are planning to do
❍ My teachers have encouraged me to go
❍ I don't know what else to do
❍ I don't feel ready to start working yet
❍ It will be too hard to get a job because of Covid-19
❍ Other reason (*please specify*) _____

18. How much do you agree with the following statements about higher education?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
It is for people like me	○	○	○	○	○	○
I would fit in well with others	○	○	○	○	○	○
I have the academic ability to succeed	○	○	○	○	○	○
I could cope with the level of study required	○	○	○	○	○	○

19. How much do you agree with the following statements about higher education?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
It will broaden my horizons	○	○	○	○	○	○
It will challenge me intellectually	○	○	○	○	○	○
It will give me valuable life skills	○	○	○	○	○	○
It will improve my social life	○	○	○	○	○	○
It will enable me to earn more	○	○	○	○	○	○
It will enable me to get a better job	○	○	○	○	○	○