

Widening Participation Research Fund Final Report

Project Title: Removing barriers: Financial transparency, peer effects and prior attainment

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This was a team project and other team members alphabetically are: Julia Carey (UoB), Raj Chande (UoB, BIT), Catherine Dilnot (IOE/UCL), Lindsey Macmillan (IOE/UCL), Michael Sanders (Harvard, Oxford, BIT). We also acknowledge the major contributions of a series of Project Administrators, Abbi Stoneman, Christine Spencer and Maggi Walton, and of Kate Guest from Teach First in running the mentor training.

A brief description of the research project as presented in the original proposal, including the objectives and the research methodology:

We proposed a set of interventions to raise the number of pupils from local disadvantaged communities and schools applying to study at the University of Bristol. Our objective was to answer a policy question for the University of Bristol: does student-outreach and one-to-one mentoring raise applications for students from these communities? Because this is a policy question, we needed to identify a causal process, and so we adopted a randomised control trial (RCT) methodology. We designed interventions, and randomly selected some school-cohorts to receive those, and others to continue with “business as usual”. Each school received some intervention for at least one cohort each year.

The interventions themselves, described more fully below, derive from both traditional approaches in economics based on information and incentives, and also make the most of recent behavioural research findings. We implemented these over the full timescale allowed, and are now evaluating their success exploiting the RCT approach.

Our proposal includes a range of interventions that tackle some of the major issues identified in discouraging applications to higher education, and especially elite universities, for those from disadvantaged background. These are: students from poorer families not being fully aware of the financial benefits of going to a University like the University of Bristol; not believing that such a university is for “people like me”; and not having the grades to get in. These characteristics are linked – if a potential applicant does not believe she or he wants to or has a chance to get in to the University of Bristol or similar, it does not make sense to try so hard to achieve the grades.

So the two central issues are raising the chances of applying given prior attainment; and raising prior attainment to increase the chance of receiving an offer. While some of the evidence suggests that intervening early is key to removing barriers, we also recognised the need for action for those sixth formers who are making participation decisions now. Consequently we proposed a range of interventions, effective for both short-run and long-run timescales. Short-run interventions aim to provide information and stimulate aspiration to apply and attend the University of Bristol or similar, largely taking grades as given; and longer-run interventions aim to offer a direct assistance to study through targeted peer mentoring, and again by providing information and stimulating aspiration to raise effort and engagement to improve grades. Therefore some of our interventions aim to produce an immediate effect, working with the cohorts of pupils applying in 2013/14. Other interventions will have a longer-run impact aiming to change applications in 2015 and 2016.

Our operations ran as follows. We recruited University of Bristol students to act as mentors. The aim was to have people to talk to the school pupils as close as possible to themselves in age and outlook. We recruited at Fresher's Fair and Volunteer's Fair, and later through email. These mentors were trained for their roles by Teach First in Bristol, at no cost to the project. In the later years of the project, mentors from the previous years, whom we dubbed 'Mentor Leaders', helped in the training of the next year's mentors, and had an opportunity to visit Teach First offices in London for the day and receive further training. Project staff conducted DBS checks on all mentors going into schools. Alongside recruiting pupils we also recruited schools to take part in the trial. This was largely through direct mail outs to the local schools. We interpreted 'local' quite broadly including schools in disadvantaged areas of Weston-Super-Mare for example. We also had a reasonably broad definition of disadvantaged communities to balance the trade-off between achieving a good sample size and targeting a homogenous population. Finally, the sample included both regular state secondary schools and Further Education colleges, of which South Gloucester was by far the largest.

We then set up dates for mentors to visit schools and engage in either mentoring or the inspirational talks. We funded the travel of the mentors but they were volunteers, not paid for the activity.

We also designed and set up an online tool to help explain the financial benefits and costs from attending a university like Bristol. This was presented by the mentors and also the URL given to the pupils so that they could login and go over the information again in their own time. While this will need updating, it is available as a valuable legacy of this project.

School and individual level data on applications was obtained from UoB, and we would like to acknowledge the help from Amy Butterworth in Admissions in much improving our understanding of this data and providing the relevant extracts for us. Data on schools and pupils' performance can also be accessed from Edubase and from the National Pupil Database (NPD), and we have just recently (August 2016) been given permission by the Department for Education to access the NPD. Once we have full access, we will be able to observe the relevant attainment for those individual pupils who received tutoring directly as well as the overall attainment of those year groups who received our inspirational talks.

An outline of any departures from the original objectives and methodology, with reasons.

Objectives and methodology remained the same throughout the project.

Summary of the findings:

Our research is ongoing and these are preliminary findings. Our determination to give the actual implementation as long as possible to run, and the relative slowness of the process of accessing NPD data means that there is more to do. For example, the implementation itself ran until June and we received permission to access the NPD on 8th August. Nevertheless, we believe that these interim results are of interest. To date, because of the lack of pupil level data from the NPD we have focussed on the school-level inspirational talks intervention. More analysis on this will follow, as will the analysis of the one-to-one mentoring.

First, we set the scene by describing the 43 schools and colleges in the trial based on the school-level

NPD data. There are 43 project schools in total – 7 are 16+ colleges only (so only appear in KS5 data), 10 have no sixth form (so only appear in KS4 data) and 26 schools are all through, so appear in both. Table 1 (at the end of the document) presents data from the NPD relating to all students in project schools in their final sixth form year in year two of the three project years and all students in the project schools in the corresponding KS4 year– so KS5 in 2014/15, KS4 in 2012/13. Further details on the data are available.

As can be seen, relative to national state school and college averages the trial school students are only somewhat less deprived both at KS4 and KS5, although compared with all state schools in the local authority areas from which they are drawn, have significantly higher free school meal (FSM) eligibility. The proportion of non-white students in trial schools is much lower than the national average, particularly at KS5, although slightly higher than the area average. Average attainment at KS4 at trial schools is similar to the area and national averages in terms of overall GCSE capped point scores, but the proportions of students gaining 5 A*-C grades is lower, and the GCSE prior attainment of trial school KS5 students is considerably lower than the mean for the area. This relatively lower attainment is also seen in the pattern of qualifications gained and scores at KS5 in trial schools. Compared with the local area, trial school students are nearly 5pp less likely to follow an A-level qualification route, nearly 6pp fewer achieve 3 passes at A-level, and on average they gain 6 fewer points per A-level entry. Overall the picture in the trial schools is of largely white students, relatively deprived in their area, following qualification routes and gaining scores that mean the mean number of A-level points per student (415) is considerably lower than both local area and national averages (464 and 445 respectively).

Turning to the results, we make use of data on UCAS Applications to the University of Bristol (at the school level), and total applications made by students at that school, for entry years between 2002 and 2015. Our data contain two main types of school – comprehensive schools and further education colleges, but we focus on just the former here as we await data on FE colleges. Although treatments were randomized to schools and cohorts, there remains a possibility of imbalance occurring, and differences in the size of schools (which might reasonably be correlated with the number of applications made), acting as a confound on our treatment effect. Consequently we use a long run of data on applications and adopt a school fixed effects approach; we will later explore school-specific time trends. The dependent variable is the number of applications made by participants in a specific school in a specific year. At the moment we are able to use only some of our data, and we are confident that when we can utilise all of it that the precision of the estimates will increase.

In Table 2, at the end of the document, we first show the number of applications to the University of Bristol; second, the total number of applications to any university; and third, the proportion of those total applications coming to Bristol. The treatment indicator is set to 1 when the cohort reaching year 13 in that school in that year received an inspirational talk, and is zero otherwise. The regression otherwise simply contains a constant, school fixed effects, and application cycle effects.

We see substantial increases in some of these outcome measures, though they do not reach standard levels of statistical significance. As just noted, we expect this to improve as we bring more of our data in to play. The size of the effect on total applications is positive but not large: an increase of 34.8 applications on a base of 1640 is around 2%. The increase in applications to Bristol is substantial: 11.6 over a base of 40.2 is 29%. Expressing those two results together, the estimates show an increase in Bristol's share of applications of 0.008 over a base of 0.025 or just over 30%. Again we emphasise that these findings are not statistically significant, but we hope to be able to improve that once we bring in all of our data.

All of these have been achieved at very low cost and are undoubtedly extremely cost effective. At

this stage, we offer weak, albeit consistent across our analyses, evidence of a positive treatment effect associated with receiving the inspirational talk. It is perhaps unsurprising that the results at school level are not precisely measured given relatively few observations. We will acquire more observations just through the passage of time as more treated cohorts reach year 13 and make applications.

Suggestions for extension of the project or further research avenues:

There are many ways in which the project could be continued. Simply continuing the project and collecting more data would by itself generate more data and sharpen the estimates. And given that we ran interventions for younger pupils too, we might well expect to see continuing effects of this project into the future.

More importantly, we envisage a number of extensions to the basic model we have built. We could make much more of the online finances tool and engage pupils in forecasting their earnings (net of loan repayments) in different scenarios. With more student mentors, we would be able to do more to match these mentors back to their own secondary schools, which we believe would be powerful.

Moving on from research to action, we proposed that our intervention be continued in local schools as a regular part of the University's Widening Participation work, not as a research project. We still believe that that would be valuable, a belief reinforced by the preliminary results. To that end, we have prepared a very detailed set of notes to guide administrators of such a scheme, written by Abbi Stoneman. This is available here:

<https://www.dropbox.com/s/4loo8wafx6sxprh/Guide%20to%20the%20Bristol%20Teach%20First%20Inspire%20Project.pdf?dl=0>.

Impact of the research findings for the University of Bristol:

The potential impact arises from the fact that we are providing evidence that the intervention we trialled could make a difference to increasing applications from pupils in disadvantaged schools and neighbourhoods local to the university. Preliminary results – which clearly need more work – suggest that the intervention raised both the number and the quality of applications.

To the extent that the Widening Participation Team's own practices are somewhat similar to ours, this also suggests that they may be effective too. There are two points to make on this. First, the control condition in our scheme was "business as usual" so that includes the activities of the University's own WP team. Our intervention raised applications by about 16% above and beyond their activities. This suggests that possibly the pupils saw them as sufficiently different to produce an effect. Secondly, we were not able to isolate the impact of the many different components of our intervention. So we do not know whether the most effective components are or are not part of the University's existing practices.

We also envisage an impact on the existing University of Bristol students themselves. Recruiting them to the scheme, we advertised it as follows: "*A research team based in CMPO are running a mentoring programme to help kids from local schools get into university, and this is your opportunity*

to participate. Email cmpp-aim4@bristol.ac.uk to sign up! We recruit current UoB students - people like you - to act as mentors to local pupils to raise their aspirations, to give them the facts about the costs and benefits of going to uni and dispel the myths, and to offer a bit of extra tutoring to raise their grades. You will receive training from TeachFirst to give you the skills to do this. We hope that everyone benefits from this scheme: obviously the pupils in the local schools, the university from attracting more talent, and also you benefit - the training from TeachFirst, plus this activity will look good on your cv. " We think that the students will benefit from the addition to their cvs, the training and experience and the 'warm glow' of helping out in their adopted city. Part of the experience is undoubtedly the valuable communication skills that they learned in having to present to a room full of pupils who they were close to in age. These invaluable soft skills will undoubtedly improve their future employability.

More broadly, the University itself gains from an enhanced student experience, the capability to attract talent from a more diverse pool, and in reputational terms both in the city and nationally – all at virtually no cost. Delivered by volunteer students, this fits very well into the developing ethos of the 'Bristol Futures' programme.

Impact of the research findings for the higher education sector and policy makers in the UK:

Widening Participation is an issue that many leading universities are struggling with. It seems likely that this issue will only gain prominence with potentially higher-still fees and the on-going policy interest in social mobility. There is also likely to be increasing scrutiny from OFFA, the Russell Group itself and the Social Mobility Commission.

All of these will be looking out for cost-effective measures to help increase the participation of pupils from disadvantaged communities in leading universities. So we anticipate a broad interest in our results. Others are researching along similar lines (see for example, McNally and Wyness, *Journal of Human Capital*, forthcoming). Impact may well be that other universities choose to take up the scheme and to follow our play-book described above. Regulatory bodies may take up the findings as exemplars of practice, or possibly even required practice.

Once we have completed the analysis and carried out all the necessary robustness checks, we will be in a strong position to begin dissemination to these bodies. We have good links with: the Russell Group, individual leading universities, the Cabinet Office, the Department for Education, the Social Mobility Commission and so on. We are ready to present our findings to these groups. We will also work with Policy Bristol.

The format of the project is simple and easy to use and one that could be rolled out to other universities in collaboration with Teach First. This would provide a national network of mentors in touch with local disadvantaged pupils to encourage participation.

Impact of the research findings for the higher education sector internationally:

Encouraging young people from disadvantaged families to attend university is an increasingly promising and popular area of research. Many of the interventions recently tested are cheap, scalable and illustrate that well timed and compellingly framed information can have at least as much impact as relatively costly tuition subsidies. Castleman (2015) has run numerous experiments in the US showing that providing timely prompts of administrative deadlines improves enrolment rates by over 10% and retention rates by nearly 20%. Hoxby and Turner (2013) found that providing high-achieving, low-income high school students with information on college options for high ability students more than doubled the enrolment rate for these groups in selective colleges. Carrell and

Sacerdote (2013) and Bettinger et al (2012) both found that assisting low income students with the administrative processes of applying for college and financial aid improved enrolment rates by 10-20%. Further studies are presented by Lavecchia et al (2014).

Bettinger, E., Long, B.T., Oreopoulos, P. and Sanbonmatsu, L. (2012) "The role of application assistance and information in college decisions: Results from the H&R Block FAFSA experiment." *The Quarterly Journal of Economics* 127.3, pp. 1205-1242.

Carrell, Scott E., and Bruce Sacerdote. Why do college going interventions work?. No. w19031. National Bureau of Economic Research, 2013.

Castleman, Benjamin L. *The 160-Character Solution: How Text Messaging and Other Behavioral Strategies Can Improve Education*. JHU Press, 2015.

Hoxby, Caroline, and Sarah Turner. "Expanding college opportunities for high-achieving, low income students." Stanford Institute for Economic Policy Research Discussion Paper 12-014 (2013).

Lavecchia, Adam M., Heidi Liu, and Philip Oreopoulos. *Behavioral economics of education: Progress and possibilities*. No. w20609. National Bureau of Economic Research, 2014.

Other impacts of the research (e.g. for schools, local authorities, other bodies or sectors):

The pupils in local schools gain from the additional tutoring, and from the myth-dispelling information on the costs and benefits of university education. The schools also benefit from an injection of extra enthusiasm from an outside source – real life experiences to help encourage their pupils to think seriously about their future options.

Financial summary:

Table 1. Project Budget Summary Years 1-3

	Overall Project Budget	Actual Project Spend	Balance
Budget line	99,834	83,022	16,812
Project Manager	41,853	41,509	344
Administrator	20,989	5,840	15,149
Mentor Expenses - Travel Etc	-	1,763	-1,763
General Office Consumables	400	635	-235
PC Tablets	1,500	-	1,500
Travel & Subsistence	400	502	-102
Teacher Cover for School	2,700	-	2,700
Lindsey McMillan consultancy	27,192	27,192	-
Consultancy for Recruitment School	4,800	4,800	-
UCAS Data (new 2016)		318	-318
Training costs		463	-463
Totals	<u>99,834</u>	<u>83,022</u>	16,812
Project Underspend		<u>16,812</u>	

Table 2. Year 3 in-year costs

Budget line	2015/16:		
	Projections	Actuals	Balance
	21,775.67	21,018.81	756.86
Project Manager	0.00	0.00	0.00
Administrator	0.00	5,840.34	(5,840.34)
Mentor Expenses - Travel Etc	6,996.33	602.87	6,393.46
General Office Consumables	150.00	44.00	106.00
PC Tablets	0.00	0.00	0.00
Travel & Subsistence	133.33	154.70	(21.37)
Teacher Cover for School	900.00	0.00	900.00
Lindsey McMillan consultancy	13,596.00	13,596.00	0.00
Consultancy for Recruitment			
School	0.00	0.00	0.00
UCAS Data (new 2016)	0.00	318.00	(318.00)
Training costs		462.90	(462.90)
<u>Totals</u>	<u>21,775.67</u>	<u>21,018.81</u>	<u>756.86</u>
<i>In-year underspend</i>			<i>756.86</i>

Table 1: Descriptive Statistics for Bristol Inspire Project Schools and Colleges

State schools and colleges:	In the Trial		All in Bristol, Gloucestershire and Somerset		In England	
	KS4	KS5	KS4	KS5	KS4	KS5
Number of students	6,857	7,594	23,971	16,776	593,435	395,457
Number of schools/colleges	36	33	174	98	3,775	2,392
% female	48.1	53.7	48.6	52.5	48.8	53.2
FSM (% of non-missing)	12.7	7.0 ¹	10.3	5.7	14.9	10.7
SEN (% of non-missing)	13.9	8.3	14.3	8.2	17.0	10.4
SSEN (% of non-missing)	2.2	0.9	3.4	0.7	3.8	1.1
EAL (% of non-missing)	7.5	6.3	4.7	4.9	12.7	15.1
Ethnicity: % Asian (of non-missing)	3.6	2.9	2.0	2.3	8.2	10.3
Ethnicity: % Black (of non-missing)	4.0	2.6	1.9	1.8	4.8	5.7
Ethnicity: % Mixed (of non-missing)	4.2	3.9	3.1	3.3	3.8	4.0
Ethnicity: % White (of non-missing)	87.5	89.2	91.8	91.0	80.6	76.9
Ethnicity: % AOEG/Chinese/Unclear (of non-missing)	0.8	1.4	1.2	1.6	2.6	3.1
GCSE mean capped points score including equivalents ²	333	370 ³	332	377	333	375
% with 5 A*-C – GCSE and GNVQ	53.5	79.4 ⁴	56.8	82.2	55.1	78.3
% with A-levels as main qualification	N/A	56.9	N/A	61.4	N/A	57.5
% with NVQ as main qualification	N/A	41.3	N/A	36.7	N/A	39.9
% achieving 3 or more A*-E grades in A-levels/applied A-levels	N/A	42.5	N/A	48.3	N/A	46.6
Mean points from A-levels (across all students) ⁵	N/A	415	N/A	464	N/A	445
Mean number of A-level entries per student	N/A	2.0	N/A	2.2	N/A	2.1
Mean points per A-level entry	N/A	199	N/A	205	N/A	202

¹ Proportion of those eligible for FSM in either year 11 or year 13/14 or both.

² 320 points is 8 Cs, 368 points is 8 Bs.

³ From KS4 data – excluding unmatched students

⁴ From KS4 data – excluding unmatched students

⁵ One grade difference in one A-level is 30 points

Table 2: Impact of receiving an inspirational talk on university applications
Very Preliminary Results – not for wider dissemination

	(1)	(2)	(3)
	All applications (total)	Bristol applications (total)	Bristol applications (% of total)
Treatment	34.819	11.597	0.008
	(503.728)	(15.079)	(0.006)
Application Cycle Fixed Effects ¹	Yes	Yes	Yes
School Fixed Effects	Yes	Yes	Yes
Constant	1639.704***	40.205***	0.025***
	(346.118)	(10.000)	(0.001)
Number of obs.	100	100	100
Number of schools ²	42	42	42

Robust Standard Errors in Parentheses

+ p<0.1, *p<0.05, **p<0.01, ***p<0.001

¹Baseline application cycle: 2015

²Unbalanced panel. We observe 26 schools for the 2015 application cycle, 16 of which were in the trial sample.