

Evaluation of the National Levelling Up Widening Participation Pilot Programme

Executive Summary

Version 1.0

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**Dr Helen Cramman, Dr Helen Gray, Dr Maria Ana Chavana, School of
Education, Durham University**

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1. Executive Summary

Introduction

Levelling Up is a national academic and pastoral online support programme spanning two academic years, targeted at Year 12 students who have an interest in potentially pursuing the study of Chemistry, Maths or Physics at University. In total, 226 students accepted places on the pilot cohort of the programme.

There were three subject strands in the pilot programme, with three Hubs coordinating the overall running of each subject strand. Durham University led the Chemistry strand, the London Mathematical Society the Maths strand, and the Institute of Physics the Physics strand.

For the pilot programme, six departments (Spokes) from four UK universities hosted a cohort of students. There was one Spoke for the Chemistry strand, based at Durham University (42 participants); two Spokes for Maths, based at Durham University (30 participants) and the University of Leicester (25 participants); and three Spokes for the Physics strand, based at the University of Birmingham (48 participants), Durham University (39 participants), and the University of Oxford (42 participants). The pilot cohorts started the programme between February 2021 and July 2021 and the last sessions ran between March 2022 and June 2022.

The design for the delivery of the programme varied across subjects and Spokes. In common across all Spokes, was that participants took part in online subject specific tutorials led by tutors. Participants in the Chemistry and Physics Spokes also had separate mentoring sessions. In addition, activities such as guest lectures were provided by some of the Spokes. The background of tutors varied across the programme. Tutors on the Physics Spokes were A-level teachers, tutors, teacher trainers and outreach officers. On the Maths Spokes tutors were undergraduate students. For the Chemistry Spoke, tutors were postdoctoral researchers and academic staff. Mentors on the Chemistry and Physics Spokes were undergraduate students.

The number of contact hours for participants in tutorial and mentor sessions varied across the Spokes with 34 hours of contact time for Chemistry – Durham participants (via 17 tutorial sessions and 17 mentor sessions), 33 hours for Maths – Durham and Maths – Leicester participants (via 22 tutorial sessions), 28 hours for Physics – Durham (19 tutorials and 9 mentor sessions), and 19 hours for Physics – Birmingham participants (via 10 tutorial sessions and 9 mentor sessions). The number of tutorial and mentoring sessions offered on the Physics – Oxford Spoke varied by tutor and mentor and the exact provision is not known.

Aims of the programme

At the outset of the programme, a detailed Theory of Change Model was developed in collaboration with the three programme Hubs in February 2021. This stated the impact the programme Hubs aimed to achieve by the end of a participant's time on the programme.

The stated seven areas in which the programme desired to have impact were:

1. Participants aspire to study chemistry, physics, mathematics, or a directly related STEM discipline to their programme subject, at university.
2. Participants apply to a high ranked university as listed in in the Times Good University Guide.
3. Participants aspire to study at university (in any subject).
4. Participants aspire to study at their Levelling Up host university.
5. Participants consider that the programme has helped them achieve higher grades at A level in their subject.
6. (Chemistry and Physics) Students consider that the programme has helped them achieve higher grades at A level in maths within their subjects.
7. Participants received offers to study the courses which they have applied for on their UCAS applications.

Evaluation

The evaluation of the programme sought to answer two overarching research questions:

1. Have the intended impact aims and outcomes for the Levelling Up programme been achieved?
2. Is it reasonable to conclude the Levelling Up programme of activities contributed to the achievement of these impact aims and outcomes?

The evaluation used a Contribution Analysis Framework to answer these questions, which is a robust method of undertaking evaluation of widening participation programmes with small numbers of participants in complex programmes (TASO, 2022).

To address the research questions, the evaluation utilised a concurrent triangulation mixed methods approach, collecting data in sequential stages with the first stage informing the development of the data collection tools in the second stage (Creswell et al., 2003). Data were collected using: start of programme participant application form, baseline and end of programme surveys, focus groups, interviews, and observation of training sessions and a tutorial session. Analysis was carried out in detail at two timepoints during the project (interim and end-point), with the findings from the interim analysis informing the development of subsequent data collection tools. At both timepoints, qualitative and quantitative data were analysed independently with the findings integrated at the data interpretation stage.

Key findings

Delivery of the programme

Assessing against the Contribution Analysis framework, the evidence indicates that all activities stated within the Theory of Change model were delivered by all Spokes to some extent.

There were, however, variations in delivery across Spokes as well as in the engagement from participants. Key areas of variation included:

- 1) the Physics – Birmingham and Physics - Oxford Spokes delivered fewer tutorial sessions than originally planned. The majority of respondents to the end of programme survey on the on the Physics – Birmingham Spoke reported that there were some parts of the programme they been unable to participate in fully.

2) for all Spokes, participants missed sessions, with average attendance across Spokes varying from 48% to 69%.

3) Levelling Up specific onsite/remote visits to the university were not possible due to COVID-19 for the three Durham Spokes, although central university open day provision was signposted.

Barriers to effective delivery of the programme had included low attendance by participants leading to cancelled sessions due to safeguarding requirements, and technology not functioning e.g. problems with Zoom or Teams.

For the participants that had engaged with the programme, they reported particularly valuing the structure of the programme, including the weekly cycles and the style and content of sessions. They appreciated the ability to delve deeper into content, that the content went beyond A level and liked the pre-work and found it helpful to attempt this before the tutorial sessions. The participants particularly commented on the benefits of the small group sessions and friendly, welcoming atmosphere. They valued how the tutors and mentors made the sessions interactive and engaging and welcomed being asked questions and working in groups to solve problems in different ways.

Chain of expected outcomes

The evaluation found evidence that the chain of results documented in the Theory of Change model had occurred, with the participants giving examples of the intended outcomes for the programme in action.

The Chemistry – Durham, Maths – Durham, Physics – Birmingham and Physics – Durham Spokes achieved all seven impact aims.

The Maths – Leicester and Physics – Oxford Spokes did not meet the aim for participants to choose to apply to their Levelling Up host university, with only a minority of participants applying to Leicester and Oxford. However, it is important to note that in the end of programme interviews with the Spoke leads, both universities considered that this aim was not of importance for the remit of Widening Participation initiatives at their universities. Since the start of the programme, this aim is also now discouraged by the UK government within university Widening Participation strategies.

The impact aim of participants applying to a high ranked university as listed in the Times Good University Guide was also slightly weaker for Maths – Leicester and Physics – Birmingham than the other Spokes. Although the majority of participants at these two Spokes applied to at least one course in the top 10 for their chosen subjects, less than a third of application choices were to courses ranked in the top 10 for their subject.

Contextual factors

Additional contextual factors considered by the evaluation included the background of participants and support from school and parents/carers with the university application process and knowledge about studying at university. There were differences between Spokes in the proportion of participants by gender, ethnicity and whether the participants would be the first in their family to attend university. For all Spokes there were areas where participants considered that there was missing knowledge either from school or parents/carers.

The data highlights the complexity of potentially differing needs of participants across the programme and that they are joining the programme with different backgrounds and therefore potentially different areas in which they would benefit from additional support. This was highlighted in the range of different, and sometimes contradictory, comments from participants as to which areas of the tutoring and mentoring provision they found most beneficial, where they felt topics were particularly relevant or less useful, whether they would like easier or harder problems set, and more or less frequent sessions.

The evaluation concludes that within this complexity, there were areas where the programme had the potential to fill gaps in knowledge for students from all Spokes and that there were no external contextual factors that may have negatively affected the intended chain of results for the programme.

Conclusions and recommendations

Based on the above evidence, the evaluation considers it reasonable to conclude that the Levelling Up programme has contributed to achieving the stated impact aims for the programme.

The evaluators have several recommendations for the refinement of the programme moving forwards:

- 1) That wherever possible, the programme runs with small group sessions, with consistency week-on-week in the participants, tutors and mentors within groups.
- 2) That training and processes are put in place to support tutors and mentors in tailoring the weekly topics and differentiating the difficulty of activities within the sessions to the specific interests and needs of the participants within their groups.
- 3) That there is an opportunity for participants to communicate with each other outside the organised weekly sessions to enable them to work together on pre-work and discuss topics such as university applications.
- 4) That for the Spokes where it isn't already in place, that a method is found for tutors and mentors to communicate with one another to keep up to date on what has been covered with the participants within their groups.
- 5) That graphics tablets are provided for the Chemistry and Physics programmes to support delivery and to make activities such as drawing graphs and writing equations easier.
- 6) That careful consideration is made as to the most effective pedagogical practice when working with participants who are not visible on screen to the tutor or mentor (i.e. with cameras off).

Limitations of the research

It is important to note the limitations of the evaluation study. A key limitation was the number of participants responding to the end of programme survey. Multiple strategies were implemented to attempt to increase participation, however, the response rate was only 30%. Although a lower number than hoped, the data still provides a useful insight into the experiences of participants.

Analysis of attendance data indicated that the participants that completed the end of programme survey and participated in focus groups attended more sessions than the average for the cohort. The findings may therefore represent a more positive outlook than the cohort as a whole, however, this exemplifies delivery for participants who maximised their engagement.

A second limitation was in the level of engagement of tutors and mentors with the focus groups. Multiple calls were made to encourage participation, and timings were adapted to avoid undergraduate exam periods, however, it was not possible to get good representation of tutors and mentors across Spokes, especially in the end-point focus groups. This had the potential of reducing the range of views captured by the evaluation.

Future research

The evaluators recommend further research is undertaken to understand in more detail what influences participants' choices of university courses. There were clear differences between the rank of participants' course choices on the Maths – Leicester and Physics – Birmingham Spokes compared to the other Spokes on the programme. A more detailed investigation is required to understand what led to these differences. This is particularly of interest in the case of the Maths – Leicester, where delivery and content of the programme was the same as the Maths – Durham Spoke.



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