

# **London Schools Excellence Fund**

## **Self-Evaluation Toolkit**

### **Final report**

#### **Contact Details**

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## Evaluation Final Report Template

### Introduction

The London Schools Excellence Fund (LSEF) is based on the hypothesis that investing in teaching, subject knowledge and subject-specific teaching methods and pedagogy will lead to improved outcomes for pupils in terms of attainment, subject participation and aspiration. The GLA is supporting London schools to continue to be the best in the country, with the best teachers and securing the best results for young Londoners. The evaluation will gather information on the impact of the Fund on teachers, students and the wider system.

This report is designed for you to demonstrate the impact of your project on teachers, pupils and the wider school system and reflect on lessons learnt. It allows you to highlight the strengths and weaknesses of your project methodology and could be used to secure future funding to sustain the project from other sources. All final reports will feed into the programme wide [meta-evaluation of the LSEF](#) being undertaken by SQW. Please read in conjunction with Project Oracle's '**Guidance to completing the Evaluation Final Report**'.

### **Project Oracle: Level 2**

**Report Submission Deadline:** 30 September 2015

**Report Submission:** Final Report to the GLA

**Project Name:** Pedagogical approaches to delivery of a knowledge-led, content-rich GCSE and A level curriculum: Learning with independent schools

**Lead Delivery Organisation:** Christ the King Sixth Form College

**London Schools Excellence Fund Reference:** LSEFR1062

**Author of the Self-Evaluation:** Dr Sue Sing

**Total LSEF grant funding for project:** £473,700

**Total Lifetime cost of the project (inc. match funding):** £474700  
(including in-kind funding = £524400)

**Actual Project Start Date:** 24<sup>th</sup> January 2014

**Actual Project End Date:** 31<sup>st</sup> August 2015

## 1. Executive Summary

This final report is based on an evaluation of a cross-sector state-independent school action research study involving seven state schools in the boroughs of Lewisham and Bexley and four leading and highly prestigious independent schools based in and around Greater London. The project was led by Christ the King Sixth Form College, and took place between January 2014 and August 2015.

The rationale for this project was based on the fact data shows just five schools in England (3 in London) sent more pupils to Oxford and Cambridge over three years than nearly 2000 others combined. The Sutton Trust reported that many state schools struggle to get their students the top grades required to enter our top universities. In contrast, independent and selective state schools tend to dominate the highest A level grade score tables. This project set out to learn with independent schools about the KS4 and KS5 strategies and approaches used to achieve such large numbers of A/A\* grades in English, Maths and the Sciences, which then enable so many of their students to gain places at Oxbridge and other leading universities. This learning was aimed at increasing state school teachers' understanding and confidence around what is needed to provide the 'stretch' element that currently seems to be missing for many academically-able state school students.

The evidence was gathered through:

- teacher-researchers' lesson research notes and reflections from:
  - visits to each other's schools to observe their specialist subject being taught
  - their experiences of teaching in each other's schools
  - their development and testing of high challenge resources for use cross-sector
- participants' discussions about project findings at a Reflection and Sharing Day
- the testing of specially created cross-sector online subject networks, to test their utility for developing and sharing subject knowledge and pedagogy expertise
- teacher and student surveys

The impact of our project was evaluated through qualitative and quantitative analysis of all of the above datasets, and these findings were subsequently externally validated by an appointed HEI team.

The evaluation of the project data demonstrated the following findings:

- there were actually many similarities found in the teaching and learning approaches used in the state and independent schools
- through peer-to-peer lesson research visits to each other's schools, much was learnt about the practices, strategies and types of support state school teachers need to really effectively develop and stretch their most able learners
  - discernible differences between the sectors include the faster pace of lessons; teachers' particularly strong subject knowledge, the commonplace use of higher order questioning to challenge and extend learners; higher levels of expectations by staff, students and institutions as a whole
- character traits such as resilience, determination and a willingness to participate without fear of being wrong, can impact significantly on students' ability and confidence to progress
- up-to-date subject knowledge is absolutely critical for equipping teachers with high levels of confidence and the professional ability to challenge and extend their students' learning, to convey and instil a passion for their subject and for learning *per se*
- there is a dearth of subject-specific CPD opportunities – reported by teachers in both sectors
- professional cross-sector research collaborations – state and independent school teachers working together in a range of ways – can powerfully enrich teaching and learning for both parties

As a result of completing this evaluation we would make the following recommendations for future delivery of such projects:

- securing institutional buy-in is essential
- establishing and maintaining professional relationships is key – without these, the conduct of activities may be extremely difficult and relative achievements limited
- communication and openness are key: keep participants informed but consider when and how you do this
- use an action research approach for its capacity to be professionally empowering for teachers

- create rich CPD opportunities such as those in this project as they can lead to incredibly powerful and potentially long-lasting gains for teachers, e.g. encouraging them to reflect on their own and their peers' practices; developing thinking and practices; renewing passion and enthusiasm for their subject
- have a Project Link in each school as a key point of contact for setting up different research activities
- consider the timing of your activities as this can significantly impact on participation, quality and quantity of data able to be gathered
- be prepared to be flexible and pragmatic in your approaches
- timing: allow sufficient lead-in times for data analysis; lay sufficient groundwork prior to, and for the testing of any interventions in order to more confidently assess whether any impact is due to these activities or the result of other intervening factors

## 2. Project Description

- *Why was the project set up? / What need was it seeking to address?*

The project has been delivered because the data shows that just five schools in England (3 of them are in London) sent more pupils to Oxford and Cambridge over three years than nearly 2,000 others combined. For the first time, The Sutton Trust has combined individual schools' A-level results with data from the university admissions body UCAS. Its table shows, by individual school, what percentage of pupils went forward into higher education in general, and what percentage went to a list of 30 universities the charity considers "highly selective". It found that many state schools struggle to get their students the top grades to enter our top universities. Independent and selective state schools tend to dominate the highest A-level grade score.
- *What were the circumstances into which it was introduced?*

The lead institution for this project, Christ the King Sixth Form College, invited a number of their 11-16 state partner schools to be involved in this work and thus this drew on existing relationships within the state sector. However, a state-independent school partnership was newly formed for the purposes of this project and these initial introductions were brokered through connections held by one of the project partners.
- *What project activities have been put in place?*

Between January 2014 and June 2015, the following project activities were completed:

  - Professional peer-peer lesson observations – c.300 observations conducted across the five subjects and both key stages
  - Data gathered on whole school ethos and practices in all of the independent schools and some of the state schools - 12 research reports
  - Engagement with, and active contribution to, testing of online subject-specific cross-sector networks – five networks; two platforms tested
  - Exchange research activities – 27 teacher exchanges; 6 groups of teachers involved in collaborative development and testing of high level stretch and challenge resources; 2 groups testing supra-curricular approaches
  - Staff survey – baseline and re-survey (approx. one year apart): 39/33
  - Student survey – baseline and re-survey (approx. one year apart): 328/175
  - Reflection and Sharing day with all teachers – June 2014
  - Reflection and Sharing half-day with Project links – July 2014
  - Subject-specific Development Day meetings – Nov 2014
  - Project Dissemination Conference held at City Hall – June 2015
  - Going forwards, the Key Stage 5 state sixth form colleges intend to continue the Scholarship Graduate programme that has been trialled in this project. The intention is to build on what has been learnt from the testing of this intervention in academic year 2014-15 and from the project as a whole
  - In addition, subject to being able to secure additional funding, the intention is to scale-up the online subject networks so that other schools in London may benefit from this additional, and potentially more effective and empowering, approach to subject-specific teacher CPD

- *Where has the project been delivered geographically?*  
States schools and colleges in boroughs of Lewisham and Bexley  
Independent schools located in and around Greater London
- *Who delivered the project?*  
Christ the King Sixth Form College.
- *Who were the target beneficiary groups of the project and why?*
  - Intended: KS4 and KS5 state school teachers of English, Maths, Biology, Chemistry and Physics
  - Unintended: KS4 and KS5 independent school teachers of English, Maths, Biology, Chemistry and Physics
  - Intended pupils: More able Key Stage 4 state students (Year 10) and Key Stage 5 state students (Years 12 & 13) studying English Literature, English Language, Mathematics, Biology, Chemistry and Physics
  - Unintended pupils: KS4 and KS5 independent school pupils of English, Maths, Biology, Chemistry and Physics

**2.1** Does your project support transition to the new national curriculum? **Yes/No**

If **Yes**, what does it address?

The move to linear GCSE and A level qualifications.

**2.2** Please list any materials produced and/or web links and state where the materials can be found. Projects should promote and share resources and include them on the [LondonEd website](#).

### 3. Theory of Change and Evaluation Methodology

**3.1** Please list **all** outcomes from your evaluation framework in Table 1.

**Table 1- Outcomes**

Description	Original Target Outcomes	Revised Target Outcomes	Reason for change
Teacher Outcome 1	Increased confidence and competence to improve the quality of learning at Key Stage 4 and Key Stage 5, to attain A/A*		
Teacher Outcome 2	Increased subject knowledge and confidence to prepare students for achieving A/A*		
Teacher Outcome 3	Increased knowledge of what works regarding AS/A2 teaching and more effective high challenge offered.		
Teacher Outcome 4	Increased confidence as reflective practitioners		
Pupil outcome 1	Increased academic confidence to achieve A/A* at KS4 and KS5		

Pupil outcome 2	Increased percentage of pupils achieving A and A* both at A Level and GCSE in the state schools and colleges in 2015.		
Pupil outcome 3	Increased number of applications to Russell Group universities (this relates to pupils' raised aspirations and confidence to achieve sufficient UCAS points/grades to qualify as a Russell Group applicant)		
Pupil outcome 4	Pupils will have access to a range of activities that enhance their learning in English, Maths and Science.		
Wider system outcome 1	State schools have developed an understanding of the strategic approaches taken in independent schools that bring about high academic achievement.		
Wider system outcome 2	State school teachers have developed an understanding of the knowledge-led, content-rich curriculum for their subject		
Wider system outcome 3	Increased expertise in delivering teaching and learning programmes that enthuse and engage all learners.		
Wider system outcome 4	Skill in delivering differentiated learning practices and programmes so that more able learners achieve top grades. It is anticipated that initially this will be a teacher outcome, subsequently becoming a school-wide outcome through peer teaching/in-house upskilling.		
Wider system outcome 5	Enhancement of teachers' ability to articulate their learning and share their practice with others.		
Wider system outcome 6	Establishment of a sustainable long-term collaboration/brokerage		

	between state and independent schools.		
Enter additional Outcome Name add extra lines as necessary			

Although we did not make any changes to our evaluation framework, the data gathered indicated some unanticipated outcomes for many of the independent school teachers involved in the project. The focus of our intended beneficiaries were the state school teachers and pupils given that the issue was the low numbers of highly able state pupils progressing to Russell Group universities compared to their independent school peers. However, following the initial Phase 1 visits to each other's schools to observe their specialist subject being taught it was evident from their written reflections that the independent school teacher-researchers were also gaining a great deal from these experiences.

**3.2** Did you make any changes to your project's activities after your Theory of Change was validated? **No**

**3.3** Did you change your curriculum subject/s focus or key stage? **No**

**3.4** Did you evaluate your project in the way you had originally planned to, as reflected in your validated evaluation plan?

Changes to anticipated outcomes:

**PO2:** Increased percentage of pupils achieving A/A\* at A level & GCSE in state schools and colleges in 2015

The original intention was for this to be a two year project beginning in September 2013. However, due to a delay in our funding being awarded and this not happening until January 2014, the project therefore began one term late and thus the overall research period was reduced to 18 months (January 2014 – August 2014). In terms of school time, this made a considerable difference. The shorter time span of the project means that it is not really possible to attribute any changes/improvement in grades especially to our work. We would need a longer time period for testing, and also a control group (although for the KS5 work we have been able to compare the Scholarship Graduate programme group of students with historical data for matched groups), to more feasibly consider the achievement of this particular outcome.

#### **4. Evaluation Methodological Limitations**

**4.1** What are the main methodological limitations, if any, of your evaluation?

- Reliance on 'assessments' by people who might be biased
  - In lesson research visits, teachers were asked to describe and to try to capture as much detail as possible about the lessons observed; not to evaluate or judge
  - But, despite training and clear guidance on this, to a greater or lesser degree some teachers' data did include some bias and judgement; recognisably unavoidable but does not detract from the value of professional peer-peer observation approach through action research methods
- In the absence of a control group for our KS5 intervention, we have used historical data for matched groups instead
- Inability to evaluate all outcomes – due to timeframe of project and delay of one term at the beginning (as explained above)
- Missing data/some data not returned – lesson research visits, exchange day data, staff surveys
- Inability to follow up with some participants: attrition and addition of new school in September 2014 (on reflection, perhaps we might have asked them to complete the survey at the point of joining) and also 'replacement' teachers joining the project part-way through

- Data collected at different points – KS5 baseline student survey data gathered at varying points – intended to be gathered prior to AS level examination period but due to timing, this data could not be collected until after the exam period in two schools – this may have had an impact on responses/variation seen in responses
- Re-surveying of KS5 student sample – response rate was c.50-60% for state and independent schools (considered to be good when conducting a re-survey) – difficulty of timing (approaching A2 exam period/study leave/commitment prioritisation) and ensuring students' attendance at the scheduled time to complete the survey
- Different approach used to collect baseline and second staff and student survey data – staff survey initially conducted 'electronically' via Word document emailed to respondents, which was emailed back to the Project Manager upon completion; student survey initially conducted as paper-based version with the Project Manager administrated this in person. The second staff and student survey were both conducted using Google Forms – a 'fully' electronic format – but with the Project Manager again administrating the student survey in person. This electronic approach provided some advantages but also some unforeseen drawbacks: advantageous in that it was much more possible to ensure/enforce responses to questions (because they could be made mandatory before the respondent could move to the next question) and so in turn this contributed to higher response rates for those questions (although you cannot really be sure that meaningful responses have always been entered). While this might be considered a more efficient and effective approach for increasing response rates, due to the same mechanism not having been used for the first survey it is difficult to know with any certainty whether in the first survey the respondents were leaving questions blank because they did not have a response or for any other reason (e.g. lack of time; overlooked etc.)
- Connected to the above point, there were also some advantages and challenges related to the collation of this data. Google Forms automatically collates the data into a Google sheet – which is useful as a time-saving mechanism (compared to manually entering the data into an Excel spreadsheet). But, this meant that the data was separated by subject – and then needed to be exported to Excel and merged in order to conduct an analysis by sector and key stage. While these were not significant issues they did lead to some frustrations when working to very tight deadlines.
- Re-surveying of staff and students – to make a more accurate comparison, we perhaps should have discounted from the first survey those staff/students who did not complete the second survey – for a fairer representation (as we did not include those teachers who joined the project later). It could be argued that their continued inclusion distorts the overall picture. However, due to lack of time, and this also would mean the data would need to be re-analysed (as well as narrowing the sample) this was not done.

#### **4.2 Are you planning to continue with the project, once this round of funding finishes?**

Yes/No

Yes, the Key Stage 5 state Sixth Form colleges intend to continue the Scholarship Graduate programme and will build on what has been learnt from the trialling of this intervention in academic year 2014-15 and from the project as a whole.

**If yes, will you (and how will you) evaluate impact going forward?**

We intend to review outcomes year on year as well as continue to review students' and staff engagement with the programme.

### **5. Project Costs and Funding**

5.1 Please fill in Table 2 and Table 3 below:



**Table 2 - Project Income**

	Original <sup>1</sup> Budget	Additional Funding	Revised Budget [Original + any Additional Funding]	Actual Spend	Variance [Revised budget – Actual]
Total LSEF Funding	443700	30000	473700	472988	-712
Other Public Funding					
Other Private Funding					
In-kind support (e.g. by schools)	50700				
<b>Total Project Funding</b>	<b>494400</b>		<b>524400</b>	<b>523688</b>	<b>-712</b>

In the main, in-kind support relates to independent school costs. Estimates have been based on state school costs although we acknowledge that the actual cost will likely be higher.

- Independent school teachers' staffing cover costs: **costed at £250/day (state school cost)**
  - Visit 1 x 17 staff = **£4250**
  - Visit 2 x 17 staff = **£4250**
  - attendance at meetings
    - Participant project launch (1/2 day) = **£2125**
    - Reflection & Sharing Day = **£4250**
    - Development Day meeting = **£4250**
    - Meeting with Deputy Mayor x5 teachers = **£625**
    - City Hall Project Dissemination Conference = **£2125**
  - exchange day research activities (particularly teacher exchanges)
    - Direct teacher exchanges x6 teachers = **£1750**
- Independent school Project Links staffing costs: **costed at £400/day (state school cost)**
  - wider school research x5 visits = **£2000**
  - attendance at meetings
    - half-day project participant launch at The Mayfair (Feb 2014) x4 Links = **£800**
    - half-day Reflection and Sharing session (July 2014) x4 Links = **£800**
    - Pre-dissemination feedback meeting half-day (May 2015) x3 Links = **£600**
    - City Hall dissemination event half-day (June 2015) x3 Links = **£600**
- Development Day meetings – November 2014 - Independent schools providing venue for full-day project meetings x5 = **costed at £25/hour = £875**
- Google domain and access to apps for education – **FREE**
- Google and MS 365 consultant support – **costed at same as MS 365 consultant charges = £9200**
  - MS 365 - **£9200 (\$15000)** provided= 13 days' work (=c.£700/day)
- City Hall venue for project dissemination conference – **estimated at £3000**

**Total= £50700**

<sup>1</sup> Please refer to the budget in your grant agreement

**Table 3**

	Original Budget	Additional Funding	Revised Budget [Original + any Additional Funding]	Actual Spend	Variance Revised budget – Actual]
Direct Staff Costs (salaries/on costs)	114000			108763.43	-5236.57
Direct delivery costs e.g. consultants/HE (specify) Consultants	140200			148700	+8500
Management and Administration Costs	15000			6230.35	-8769.65
Training Costs	30000			33958.06	+3958.06
Participant Costs (e.g. Expenses for travelling to venues, etc.)	4500			7126.81	+2626.81
Publicity and Marketing Costs	7000			2937.69	-4062.31
Teacher Supply / Cover Costs	126000			126771.66	+771.66
Other Participant Costs	7000			7000	--
Evaluation Costs		30000		31500	+1500
Others as Required – Please detail in full					
<b>Total Costs</b>	<b>443700</b>	<b>473700</b>		<b>472988</b>	<b>-712</b>

## 5.2 Please provide a commentary on Project Expenditure

- **Direct staff costs** were slightly lower than anticipated. Originally, the intention was to recruit a research assistant. However, once the project was underway we realised that a higher level of expertise was needed and therefore the college principal and assistant principal became more involved in this particular capacity.
- **Direct delivery costs** were slightly higher than planned due to one of the consultants becoming more involved in Phase 1.
- **Management and Administration costs** were significantly less than estimated mainly because of the change in staffing arrangements (as explained above).
- **Training costs** were broadly in line with the estimated figure.
- **Participant costs** were higher than planned. These costs predominantly relate to travel and subsistence costs incurred by the teacher researchers for the various research activities and experiences they have been involved in across Phase 1 and Phase 2 of the study. Again, at the project planning stage it was not possible to know precisely how many activities teachers would be willing to be involved in, how many it would be feasible to organise and exactly the practicalities involved, e.g. whether overnight stays would be required due to the actual travel time involved for a teacher visiting a state school from an independent school and vice versa.
- **Publicity and Marketing costs** were considerably lower than estimated because in most instances we were able to undertake the work internally, thus at a much reduced cost compared to using commercial sources.
- **Teacher Supply/ Cover costs** were roughly as estimated.
- **Other Participant costs** were as estimated.
- **Evaluation costs** were slightly higher than planned due to additional data entry being required prior to analysis.

## 6. Project Outputs

**Table 4 – Outputs**

Description	Original Target Outputs	Revised Target Outputs <i>[Original + any Additional Funding/GLA agreed reduction]</i>	Actual Outputs	Variance [Revised Target - Actual]
No. of schools	6	11	11	+5
No. of teachers	50+	47	47	-3
No. of pupils	1400+	400	400	-c.1000
Enter additional output name <i>add extra lines as necessary</i>	St Catherine's Catholic School (state 11-16 secondary school)			

In addition to a new state school joining the project in September 2014, the number of teachers has also varied throughout the course of the project due to some teachers leaving the project part-way through and other teachers taking up their place in the majority of cases. For clarity, these particular circumstances are presented here:

School 2: began with 3 teachers (English, Maths, Science/Biology); one teacher (Biology) left in Phase 2 due to changing schools; teacher not replaced

School 3: began with 5 teachers; one teacher (Physics) left in Phase 2 due to change of personal circumstances; teacher not replaced

School 4: began with 5 teachers; one teacher (Maths) left in Phase 1 due to changing schools and one teacher (English) left in Phase 2 due to change in professional responsibilities – both were replaced

School 5: began with 5 teachers; one teacher (Biology) left in Phase 2 due to health reasons; teacher not replaced

School 6: began with 4 teachers (Maths, Biology, Chemistry, Physics); a new teacher (English) joined the project at the beginning of Phase 2

School 11: new KS4 state school joined the project at beginning of Phase 2, which brought three new teachers into the project (English, Maths, Science/Biology)

Hence, while the number of teachers has not changed significantly, the original composition of that group has altered over time and this should be noted when considering the evaluation data.

### CLARIFICATION on discrepancy in numbers stated in funding agreement, this report and claim form 6:

- The figures for school/teacher/pupil outputs stated in the funding agreement were based on best estimates gauged at the time of writing the project proposal.
- The 'revised school target output' reported in the originally submitted final report referred solely to the intended number of school outputs from this project, i.e. 7 state schools and sixth form colleges; the figure did not include the unintended school outputs subsequently identified, i.e. the 4 independent schools. On reflection, the 'revised school target output' figure here should state the overall number of outputs (intended and unintended combined) and hence this has now been amended – see above.
- The amended 'revised school target output' figure above now matches the figure stated in claim form 6.
- The figure '47' stated above for the 'revised teacher target output' relates to the number of teachers who began the project plus 3 additional teachers from the new school that joined at the beginning of Phase 2. This figure differs from that stated in claim form 6 as the form is requesting for different information: for the 'No. of teachers taking part and contributing to the **cumulative total** across the lifetime of the project'. It is now realised that the original calculation of 47 in claim form 6 is incorrect as this refers only to the total number of teachers who began the project plus the number of additional teachers who joined. The figure that should have been stated is '50' as the project began with 43 teachers and an additional 7 later became involved – this includes the three additional teachers from the one new school

joining in Phase 2; the other 4 replaced teachers who left the project either in Phase 1 or Phase 2.

- In claim form 6, the figure of '525' pupils 'directly benefitting' from the project relates to the number of students we anticipated being able to survey as part of this project. Although a set number was agreed with all the schools, in reality this differed per school for different reasons (e.g. number of students attending on the day; student absences etc.) The figure that should have been entered in claim form 6 is '400', as shown in the table above; we apologise for this error and oversight on our part.

## 7. Key Beneficiary Data

### 7.1 Teacher Sub-Groups (teachers directly benefitting counted once during the project)

Please provide your definition for number of benefitting teachers and when this was collected below.

Benefitting teachers are classed as those directly involved in the project's activities, who have undertaken the role of a teacher-researcher, and who continued to be involved at the time of our City Hall project dissemination conference in early June 2015. The figures below refer to the total number of 'benefitting' teachers involved per school and accounts for those teachers involved in the project all the way through, and those who joined the project at a later date (either in place of those who left, or as a new school joining the project; see explanation under [Table 4](#)).

**Table 5 – Teachers benefitting from the programme**

	No. teachers	% NQTs (in their 1 <sup>st</sup> year of teaching when they became involved)	% Teaching 2 – 3 yrs (in their 2 <sup>nd</sup> and 3 <sup>rd</sup> years of teaching when they became involved)	% Teaching 4 yrs + (teaching over 4 years when they became involved)	% Primary (KS1 & 2)	% Secondary (KS3 - 5)
<b>Project Total</b>						
School 1 – state (KS4)	5	--	--	100%	--	100%
School 2 – State (KS4)	3 (2) 1 dep.	50%	50%	--	--	100%
School 3 – state (KS4)	5 (4) 1 dep.	--	--	100%	--	100%
School 4 – state (KS5)	5 2 changes	--	--	100%	--	100%
School 5 – state (KS5)	5 (4) 1 change 1 dep.	--	25%	75%	--	100%
School 6 – state (KS5)	4 (5) 1 new	--	40%	60%	--	100%
School 7 – independent	4	--	--	100%	--	100%
School 8 – independent	5	--	20%	80%	--	100%
School 9 – independent	2	--	--	100%	--	100%
School 10 – independent	5 (4)*		40%	40%	--	100%
School 11 – state (KS4)	3	--	33%	67%	--	100%
<b>TOTAL</b> <b>-beginning**</b> <b>-end**</b>	<b>43</b> <b>44</b>					

\*School 10 – data for one teacher unknown

\*\*See clarificatory text accompanying Table 4 (p11)

### 7.1.2 Please provide written commentary on teacher sub-groups

The majority of the state school teachers were highly experienced practitioners who had been teaching for a considerable number of years. Although the table above states ‘teaching over 4 years when they became involved’, our staff survey data indicates they have been in the profession for much longer, e.g. one KS4 state school teacher had taught for 17 years at the time of joining the project; a KS5 teacher held 20 years’ experience. From three of the four independent schools, almost every teacher held four or more years’ experience. Approximately one fifth of the overall state and independent cohort were within their 1<sup>st</sup> to 3<sup>rd</sup> year of teaching (one NQT).

When we compare the sectors in the context of this project, broadly speaking using the information held, the proportion of teachers in each category is fairly similar:

- approximately 79% of the state school teachers possessed 4 or more years’ experience compared to 75% of the teachers from the independent sector
- approximately 18% of state school teachers were in their 2<sup>nd</sup> to 3<sup>rd</sup> year of teaching compared to 19% from the independent sector
- 4% of the state school teachers were in their NQT year

- *data is unknown for one independent school teacher*

Therefore, overall it seems that the teachers were reasonably evenly matched in terms of their years of teaching at the point of becoming involved in this study. Of course, at an individual level within the subject groups there are likely to have been some differences.

## 7.2 Pupil Sub-Groups (these should be pupils who directly benefit from teachers trained)

Please provide your definition for number of benefitting pupils and when this data was collected below

### Key Stage 4:

- 50 KS4 students from three state 11-16 schools, who experienced the KS4 interventions; surveyed in October/November 2014) & re-surveyed in June/July 2015.

### Key Stage 5:

- c.50 highly able students from each KS5 state school and each independent school; surveyed in May/June 2014 to compare their attitudes and approaches to learning & re-surveyed in April/May 2015.
- 22 highly able state Sixth Form AS students (determined by their average GCSE scores) involved in a KS5 intervention designed to test some of the key elements identified as making a difference for A/A\* achievement in the independent schools.

**Tables 6-8 – Pupil Sub-Groups benefitting from the programme**

	No. pupils	% LAC	% FSM	% FSM last 6 yrs	% EAL	% SEN
<b>Project Total</b>						
<i>School 1 – state (KS4)</i>	18	0	53	53	17	6
<i>School 2 – State (KS4)</i>	17	0	37	37	12	12
<i>School 3 – state (KS4)</i>	15	0	55	55	0	7
<i>School 4 – state (KS5)</i>	51	0	27	*Not known	24	1.9
<i>Sch 4 SR* students</i>	14	0	29	*Not known	21.4	0
<i>School 5 – state (KS5)</i>	48**	0	9	*Not known	0	1.9
<i>Sch 5 SR* students</i>	6*** (4)	0	25	*Not known	0	7
<i>School 6 – state (KS5)</i>	19	0	53	*Not known	50	0
<i>Sch 6 SR* students</i>	2	0	50	*Not known	np	np
<i>School 7 – independent</i>	38	0	0	0	0	10
<i>School 8 – independent</i>	50	0	0	0	0	4
<i>School 9 – independent</i>	48	0	0	0	0	2
<i>School 10 – independent</i>	73	np	np	np	np	np
<i>School 11 – state (KS4)</i>	0	ns	ns	ns	ns	ns
<b>TOTAL</b>	<b>399</b>					
<i>-KS4 state</i>	50					
<i>-KS5 state</i>	140					
<i>-Independent</i>	209					

\*Data not known as students had previously attended a 11-16 secondary school and then subsequently moved to School 4/5/6 to pursue A level study.

\*SR = Scholarship Graduate Programme

\*\* Data only available for 47 students

\*\*\* Data based on 4 students only as 2 students withdrew partway through the year

*np* = not provided

*ns* = no students involved from this school

	<b>No. Male pupils</b>	<b>No. Female pupils</b>	<b>% Lower attaining**</b>	<b>% Middle attaining**</b>	<b>% Higher attaining**</b>
<b>Project Total</b>					
<i>School 1 – state (KS4)</i>	13	5	28	56	17
<i>School 2 – State (KS4)</i>	7	10	12	53	35
<i>School 3 – state (KS4)</i>	15	0	13	60	27
<i>School 4 – state (KS5)</i>	28	23	33.3	35.2	27.4
<i>Sch 4 SR* students</i>	3	11	7.1	85.7	7.1
<i>School 5 – state (KS5)</i>	14	33	17	42.5	40.4
<i>Sch 5 SR* students</i>	0	4	0	0	100
<i>School 6 – state (KS5)</i>	9	10	84.2	15.8	0
<i>Sch 6 SR* students</i>	0	2	50	0	50
<i>School 7 – independent</i>	38	0	0	0	100
<i>School 8 – independent</i>	50	0	0	0	100
<i>School 9 – independent</i>	0	48	0	0	100
<i>School 10 – independent</i>	<i>np</i>	<i>np</i>	<i>np</i>	<i>np</i>	<i>np</i>
<i>School 11 – state (KS4)</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>

\*SR = Scholarship Graduate Programme

\*\*KS5 Lower attaining = <7; KS5 Middle attaining = 7-7.5; KS5 Higher attaining = 7.5+

*np* = not provided

*ns* = no students involved from this school

	% Asian Indian	% Asian Pakistani	% Asian Bangladeshi	% Asian Any Other background	% Black Caribbean	% Black African	% Black Any Other Background	% Mixed White & Black Caribbean	% Mixed White & Black	% Mixed White & Asian	% Mixed Any Other	% Chinese	% Any other ethnic group
<b>Project Total</b>													
<i>School 1 – state (KS4)</i>	0	6	0	6	22	22	0	0	0	0	11	0	0
<i>School 2 – State (KS4)</i>	0	0	0	18	12	29	0	24	0	0	0	6	0
<i>School 3 – state (KS4)</i>	0	0	0	7	0	53	13	0	0	0	0	7	13
<i>School 4 – state (KS5)</i>	1.9	0	1.9	9.8	11.7	37.2	5.8	3.9	0	0	0	3.9	3.9
<i>Sch 4 SR* students</i>	0	0	0	0	0	42.8	14.2	0	0	0	7.1	21.4	0
<i>School 5 – state (KS5)</i>	4.2	0	0	0	4.2	38.2	2.1	2.1	2.1	0	0	0	8.5
<i>Sch 5 SR* students</i>	0	0	0	0	0	50	25	0	0	0	0	0	0
<i>School 6 – state (KS5)</i>	0	0	0	5	26	37	0	5	11	0	0	11	5
<i>Sch 6 SR* students</i>	0	0	0	50	0	50	0	0	0	0	0	0	0
<i>School 7 – independent</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>
<i>School 8 – independent **</i>	6	2	0	8	0	0	0	0	0	2	4	2	0
<i>School 9 – independent</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>	<i>nk</i>
<i>School 10 – independent</i>	<i>np</i>	<i>np</i>	<i>np</i>	<i>np</i>	<i>np</i>	<i>np</i>	<i>np</i>	<i>np</i>	<i>np</i>	<i>np</i>	<i>np</i>	<i>np</i>	<i>np</i>
<i>School 11 – state (KS4)</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>

\*SR = Scholarship Graduate Programme

*nk* = Information not kept by school

\*\* unspecified ethnic origin for 38% of data

*np* = not provided

*ns* = no students involved from this school



	% White British	% White Irish	% White Traveller of Irish heritage	% White Gypsy/Roma	% White Any Other
<b>Project Total</b>					
School 1 – state (KS4)	11	0	0	0	22
School 2 – State (KS4)	6	6	0	0	0
School 3 – state (KS4)	7	0	0	0	0
School 4 – state (KS5)	0	0	0	0	9.8
Sch 4 SR* students	14.2	0	0	0	0
School 5 – state (KS5)	36.1	0	0	0	2.1
Sch 5 SR* students	0	0	0	0	25
School 6 – state (KS5)	0	0	0	0	0
Sch 6 SR* students	0	0	0	0	0
School 7 – independent	nk	nk	nk	nk	nk
School 8 – independent **	24	0	0	0	14
School 9 – independent	nk	nk	nk	nk	nk
School 10 – independent	np	np	np	np	np
School 11 – state (KS4)	ns	ns	ns	ns	ns

\*SR = Scholarship Graduate

nk = Information not kept by school

\*\* unspecified ethnic origin for 38% of data

np = not provided

ns = no students involved from this school

### 7.2.1 Please provide a written commentary on your pupil data

#### **Comparison of KS4 & KS5 target group data (intervention students only) to borough averages (using London Data Store datasets)**

The target groups relate to 50 KS4 and 20 KS5 students based in Bexley (2 schools) and Lewisham (4 schools); thus, the target group % data (TGD) has been compared to the most recent data for these two boroughs, respectively.

%LAC: Most recent data =2014.

**KS4 & KS5:** Compared to both boroughs, the TGD for KS4 and KS5 was lower. However, the percentages per 10000 children aged under 18 were less than 1% for both boroughs (Bexley: 0.46%; Lewisham: 0.77%) and therefore it could be argued that the differences were negligible.

%FSM: Most recent data =2013-14.

**KS4:** Compared to the Bexley borough average (BBA), the TGD was higher: 55% cf. 40.7%, and almost the same as the Lewisham average (LBA) for the aggregated TGD: 45% cf. 47.1%. Note, the

borough average data is based on pupils who achieved 5+ A\*-C grades at GCSE whereas the TGD relates to Year 10 pupils.

**KS5:** Compared to the BBA, the TGD was much lower: 25% cf. 40.7%. Compared to the LBA, the aggregated TGD was slightly lower: 39.5% cf. 47.1%.

**%EAL:** Most recent data =2015.

**KS4:** Compared to the BBA (20297 pupils), the TGD was lower: 0% cf. 13%. Compared to the LBA (14502 pupils), the aggregated TGD was lower by almost half: 14.5% cf. 27%.

**KS5:** Compared to the BBA, the TGD was much lower: 0% cf. 13%. Compared to the LBA, the TGD (available only for one school) was slightly lower: 21.4% cf. 27%.

**%SEN:** Most recent data =2014.

**KS4:** Compared to the BBA, the TGD was much higher: 7% cf. 2.5%. Compared to the LBA, the aggregated TGD was also much higher: 9% cf. 2.7%.

**KS5:** Compared to the BBA, the TGD was much higher: 7% cf. 2.5%. Compared to the LBA, the TGD (available only for one school) was slightly lower: 0% cf. 2.7%.

**Ethnicity:** Most recent data =2015.

**KS4:** Compared to the BBA, the TGD was not representative of this wider cohort with large percentage differences found: much lower numbers of White British; much higher numbers of White Any Other Background, Asian Pakistani, Asian Any Other Background, Black Caribbean, and Mixed Any Other Background. Compared to the LBA, the aggregated TGD also appeared not to be representative with large percentage differences found: much lower numbers of White British, White Irish, White Any Other Background, Black Caribbean, Mixed Any Other Background; much higher numbers of Asian Any Other Background, Black African, Mixed White & Black Caribbean, Chinese and Any Other Asian Group.

	% Asian Indian	% Asian Pakistani	% Asian Bangladeshi	% Asian Any Other background	% Black Caribbean	% Black African	% Black Any Other Background	% Mixed White & Black Caribbean	% Mixed White & Black African	% Mixed White & Asian	% Mixed Any Other Background	% Chinese	% Any other ethnic group
<i>School 1 – state (KS4)</i>	0	6	0	6	22	22	0	0	0	0	11	0	0
<i>Bexley ave.</i>	2.9	0.5	0.5	2.6	1.4	15.9	1.1	1.6	1.1	1	1.9	1.3	1
<i>School 2 – State (KS4)</i>	0	0	0	18	12	29	0	24	0	0	0	6	0
<i>School 3 – state (KS4)</i>	0	0	0	7	0	53	13	0	0	0	0	7	13
<i>TG aggregated</i>	0	0	0	12.5	6	41	6.5	12	0	0	0	6.5	6.5
<i>Lewisham ave.</i>	0.7	0.8	0.8	3.4	18.8	19.5	4.2	5.1	1.9	1	4.7	1.5	3.2

TG= target group

	% White British	% White Irish	% White Traveller of Irish heritage	% White Gypsy/Roma	% White Any Other Background
<i>School 1 – state (KS4)</i>	11	0	0	0	22
<b>Bexley ave.</b>	<b>61.6</b>	<b>0.4</b>	<b>0.1</b>	<b>0.3</b>	<b>3.8</b>
<i>School 2 – State (KS4)</i>	6	6	0	0	0
<i>School 3 – state (KS4)</i>	7	0	0	0	0
<b>TG aggregated</b>	<b>6.5</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Lewisham ave.</b>	<b>20.5</b>	<b>0.6</b>	<b>0</b>	<b>0.1</b>	<b>8.3</b>

TG= target group

KS5: Compared to the BBA, the TGD was not representative of this wider cohort with large percentage differences found: much higher numbers of Black African, Black Any Other Background, and White Any Other Background and no students for all other categories. Compared to the LBA, the aggregated TGD also appeared not to be representative with large percentage differences found: much higher numbers of Asian Any Other Background, Black African, Black Any Other Background, Chinese, much lower White British and no students for all other categories.

	% Asian Indian	% Asian Pakistani	% Asian Bangladeshi	% Asian Any Other background	% Black Caribbean	% Black African	% Black Any Other Background	% Mixed White & Black Caribbean	% Mixed White & Black African	% Mixed White & Asian	% Mixed Any Other Background	% Chinese	% Any other ethnic group
<i>Sch 5 SR* students</i>	0	0	0	0	0	50	25	0	0	0	0	0	0
<b>Bexley ave.</b>	<b>2.9</b>	<b>0.5</b>	<b>0.5</b>	<b>2.6</b>	<b>1.4</b>	<b>15.9</b>	<b>1.1</b>	<b>1.6</b>	<b>1.1</b>	<b>1</b>	<b>1.9</b>	<b>1.3</b>	<b>1</b>
<i>Sch 4 SR* students</i>	0	0	0	0	0	42.8	14.2	0	0	0	7.1	21.4	0
<i>Sch 6 SR* students</i>	0	0	0	50	0	50	0	0	0	0	0	0	0
<b>TG aggregated</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>46.4</b>	<b>7.1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3.6</b>	<b>10.7</b>	<b>0</b>
<b>Lewisham ave.</b>	<b>0.7</b>	<b>0.8</b>	<b>0.8</b>	<b>3.4</b>	<b>18.8</b>	<b>19.5</b>	<b>4.2</b>	<b>5.1</b>	<b>1.9</b>	<b>1</b>	<b>4.7</b>	<b>1.5</b>	<b>3.2</b>

TG= target group

	% White British	% White Irish	% White Traveller of Irish heritage	% White Gypsy/Roma	% White Any Other Background
<i>Sch 5 SR* students</i>	--	--	--	--	25
<b>Bexley ave.</b>	<b>61.6</b>	<b>0.4</b>	<b>0.1</b>	<b>0.3</b>	<b>3.8</b>
<i>Sch 4 SR* students</i>	14.2	--	--	--	--
<i>Sch 6 SR* students</i>	--	--	--	--	--
<b>TG aggregated</b>	<b>7.1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Lewisham ave.</b>	<b>20.5</b>	<b>0.6</b>	<b>0</b>	<b>0.1</b>	<b>8.3</b>

TG= target group

Useful links: [London Data Store](#), [DfE Schools Performance](#), [DfE statistical releases](#)

## 8. Project Impact

### 8.1 Teacher Outcomes

Date teacher intervention started: [February 2014](#)

**Table 9 – Teacher Outcomes: teachers benefitting from the project**

Target Outcome	Research method/ data collection	Sample characteristics	Metric used	1 <sup>st</sup> Return and date of collection	2 <sup>nd</sup> Return and date of collection
<i>e.g. Increased Teacher confidence</i>	<i>e.g. E-survey</i>	<i>e.g. 100 respondents from a total of 200 invites.  The profile of respondents was broadly representative of the population as a whole.</i>	<i>e.g. Mean score based on a 1-5 scale (1 – very confident, 2 – quite confident, 3 neither confident nor unconfident, 4 - quite unconfident, 5 – very unconfident)</i>	<i>e.g. Mean score- 3.7, collected September 2015</i>	<i>e.g. Mean score- 4.5, collected June 2015</i>
<b>TO1.</b> <i>Increased confidence and competence to improve the quality of learning at Key Stage 4 and Key Stage 5, to attain A/A*</i>	<i>Staff survey (survey 1=paper; survey 2=electronic Google form)</i>	<i>Baseline: 38 respondents from a total of 43 invites.  Re-survey: 33 respondents (the possible total sample size had decreased since baseline data collection due to some teachers leaving the project midway. New teachers joining partway were not included in the survey.</i>	<i>Mix of open-ended questions and ranking and scale-rated questions  1-5 ranking (1= most important)  1-6 Scale rating (6 = fully; 5 = to large extent; 4 = to some extent; 3 = limited extent; 2 = not at all; 1 = undecided)</i>	<i>Baseline data collected late Mar-late Apr 2014</i>	<i>Re-surveyed late Apr/early May 2015</i>
<b>TO2.</b> <i>Increased subject knowledge and confidence to prepare students for achieving A/A*</i>	<i>Staff survey (survey 1=paper; survey 2=electronic Google form)</i>	<i>See above.</i>	<i>See above.</i>	<i>Baseline data collected late Mar-late Apr 2014</i>	<i>Re-surveyed late Apr/early May 2015</i>
<b>TO3.</b> <i>Increased knowledge of what works regarding AS/A2 teaching and more effective high challenge offered.</i>	<i>Staff survey (survey 1=paper; survey 2=electronic Google form)</i>	<i>See above.</i>	<i>See above.</i>	<i>Baseline data collected late Mar-late Apr 2014</i>	<i>Re-surveyed late Apr/early May 2015</i>

<b>T04.</b> Increased confidence as reflective practitioners	Staff survey (survey 1=paper; survey 2=electronic Google form)	See above.	See above.	Baseline data collected late Mar-late Apr 2014	Re- surveyed late Apr/early May 2015
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### Narrative explanation of impact of project:

**T01.** Increased confidence and competence to improve the quality of learning at Key Stage 4 and Key Stage 5, to attain A/A\*

**T02.** Increased subject knowledge and confidence to prepare students for achieving A/A\*

**T03.** Increased knowledge of what works regarding AS/A2 teaching and more effective high challenge offered

**T04.** Increased confidence as reflective practitioners

Teacher impact, in relation to the teacher outcomes outlined in the evaluation framework, and as listed in the above table, was assessed in a number of ways during the project:

- through **qualitative and quantitative data for a bespoke attitudinal and confidence teacher survey:**
  - this survey was created and conducted twice – once as near as possible to the beginning of the project (baseline data) and the second time approximately twelve months later (comparison/impact data)
  - all the participating teacher-researchers were asked to complete the survey: this included KS4 and KS5 state school teachers and independent school teachers who taught across both key stages (baseline survey completed by 39 teachers; re-survey completed by 33 teachers)
  - the survey included scale rating questions as well as open-ended questions, where respondents were invited to add comments
  - the only difference between the two surveys was that the second survey included questions asking the teachers to consider whether they felt their views may be, at least in part, attributable to their involvement and experiences in this LSEF Project
  - through analysis of each dataset, and by comparing the two datasets, we sought to identify any changes and/or differences in respondents’ perceived levels of professional confidence and competence over the lifetime of this project and consider whether any of this could be attributed to their active involvement and contributions to this research
  - enabled us to measure the impact of **all four target teacher outcomes.**
  
- through **qualitative responses** made by teacher-researchers during their **lesson observation visits to each other’s schools:**
  - in Phase 1 the teacher-researchers were all involved in two lesson research visits to each other’s schools (these took place approximately 6 weeks apart: state school teachers visiting independent schools and vice versa).
  - the purpose of these visits was to try to capture as much data as possible about the teaching and learning of their specialist subject in the ‘other’ sector
  - teachers were provided with specially-designed research documentation to support their recording of this data and this included space (with prompts) to reflect on the lesson just seen.
  - this data particularly helped to shed light on **teacher outcome 3 and 4**
  
- through **anecdotal evidence from dissemination meetings**
  - whilst this type of data might be considered less robust than other types, nonetheless, it is deemed valuable for the insights they provided into the gains teachers felt they had been able to make and we felt this provided data on **teacher outcome 4** especially.

The data suggests that all four teacher outcomes have been achieved.

**A closer look at the data:**

As target outcomes TO1, TO2 and TO3 are all closely related in the sense that they are based on a deepened understanding for teachers of what is involved in trying to achieve A/A\*, where appropriate, and in an effort to avoid repetition, the findings for these outcomes will be discussed together. Given the rationale for this project, the intended beneficiaries of this study were the KS4 and KS5 state school teachers. However, by surveying the independent school teachers we were also able to consider how the two groups fared against one another in terms of their professional confidence and ability to teach to A/A\* level. The research was essentially aimed at learning how to increase KS4 and KS5 state school practitioners' professional confidence, knowledge and ability to support their most highly able students to achieve A/A\* grades (TO1, TO2, TO3) and enabling them to share this learning more widely (TO4).

The survey included questions aimed at gauging the teachers' understanding of the key competencies one might expect in an A/A\* grade student for each of the subjects being studied in this project (i.e. English, Maths, Biology, Chemistry and Physics) (→ TO2, TO3). They were presented with a series of statements and asked if they felt any skills were missing, whether they felt all were equally important or if they should be ordered, and whether they deemed any to be superfluous. When teachers were re-surveyed a year later, they were asked to consider the same statements and questions but were also asked to reflect on whether any changes or developments to their understanding were in any way due to their involvement in the project. By the time of the re-survey, state school teachers appeared more able to comment and were doing so more fully than before (first and second survey compared) and though this was not the case for every subject there was a sense that their understanding of the competencies had increased as illustrated in some of the following example quotes from KS4 teachers:

- *I think I previously thought that achieving an A\* at GCSE was almost a mythical/mysterious concept. Now I feel that I have a better understanding of what is required. (KS4-2-ENG;)*
- *I thought that if my students could access the top end of a GCSE paper, I was providing well for them - I now see that we need to provide them with greater skills, both mathematics specific and for problem solving, reasoning, etc. in general. (KS4-3-MATHS)*
- *I used to think an A\* student was one which can just answer questions correctly and gain marks on the paper (which is what essentially enables a student to achieve such a grade), I now understand it is more of a thinking process and an application of skill that differentiates the high achievers from the rest. (KS4-2-MATHS)*
- *The confidence of students to make conjectures, take risks and think independently. I used to base this on ability alone but even the highest able cannot achieve an A\* if they don't have the above skills. (KS4-2-MATHS)*
- *I see critical vocabulary and engagement with ambiguity as more important to me as a teacher now. (KS4-1-ENG)*

In some cases, involvement in the project's research activities had provided opportunities for state school teachers to deepen their understanding of A\*/A in a subject-specific context, as indicated in the following types of comments (→ TO3):

- *Experiencing independent school practice and particularly the focus on literary breadth and knowledge based teaching has clarified my own practice (KS4-1-ENG)*
- *I saw the relatively limited importance and focus on public exams in the private schools. There was far more focus on depth and breadth of study rather than being drawn into Assessment Objectives, Mark schemes and the like. Also, the primacy of Literature over language in the private schools was interesting as it is the opposite in the state sector- again; this is more conducive to depth of study, rather than the extract-based nature of language. (KS4-3-ENG)*
- *In the independent schools I saw how teacher/students could spend a whole lesson analysing one question. The students stayed with it as they could see the benefit. Before I felt as if I was apologetic if a topic was a bit boring or if we were going through it slowly because we were going in depth. I also care less about 'entertaining' the students and am unapologetic if a lesson is a slow, deep insight into one topic. (KS5-1-CHEM)*

- *Seeing the way that pupils in the public schools talk so freely and in individual ways about texts rather than waiting to be told what to think by the teacher, made me want to help some of my more able students' access texts that provide them with other viewpoints. (KS4-3-ENG)*
- *In my visit to my first school I saw some revision lessons. I tried out a couple of ideas I had from the day. One technique was not effective (papers around the room) but it made me try out some different revision activities. (KS5-2-PHYS)*
- *The best lessons I saw at IND-2 all involved the lessons hanging off a concrete if sometimes obscure example. (KS5-1-BIOL)*

The independent school teachers still believed that an A/A\* skillset is wider than that presented to them in the survey; they tended to disagree with skills related to perception, insight, instinctive approaches, intuitive leaps and non-standard approaches and saw these as superfluous. They also felt that a number of skills were missing from the list presented and felt that work ethic and independent learning skills should also be included.

Comments from some independent school teachers indicated that their views about these skills and competencies required for highest level achievement had shifted due to their participation in this project even if they had not radically changed. For example:

- *I certainly have stopped forming opinions on the ability of students or my perception of what they can achieve based on how vocal they are in class or how quickly they can respond to questions. I no longer put any value in speed (not that I valued it above all other factors previously) at which students work but instead the depth of their understanding, how well they can link concepts and apply them to other situations, and also how insightful they are when engaging in discussion (IND-4-CHEM)*
- *Sometimes students are able to demonstrate these competencies verbally however their ability to explain themselves in writing is a different skill (IND-3-BIOL)*

Conversely, teachers across both sectors in the state schools more frequently commented on changes in their perceptions and understanding. Some teachers felt that the project had suggested ways to develop necessary skills such as reading; another said that they now see critical vocabulary and engagement with ambiguity as more important now. Other teachers remarked:

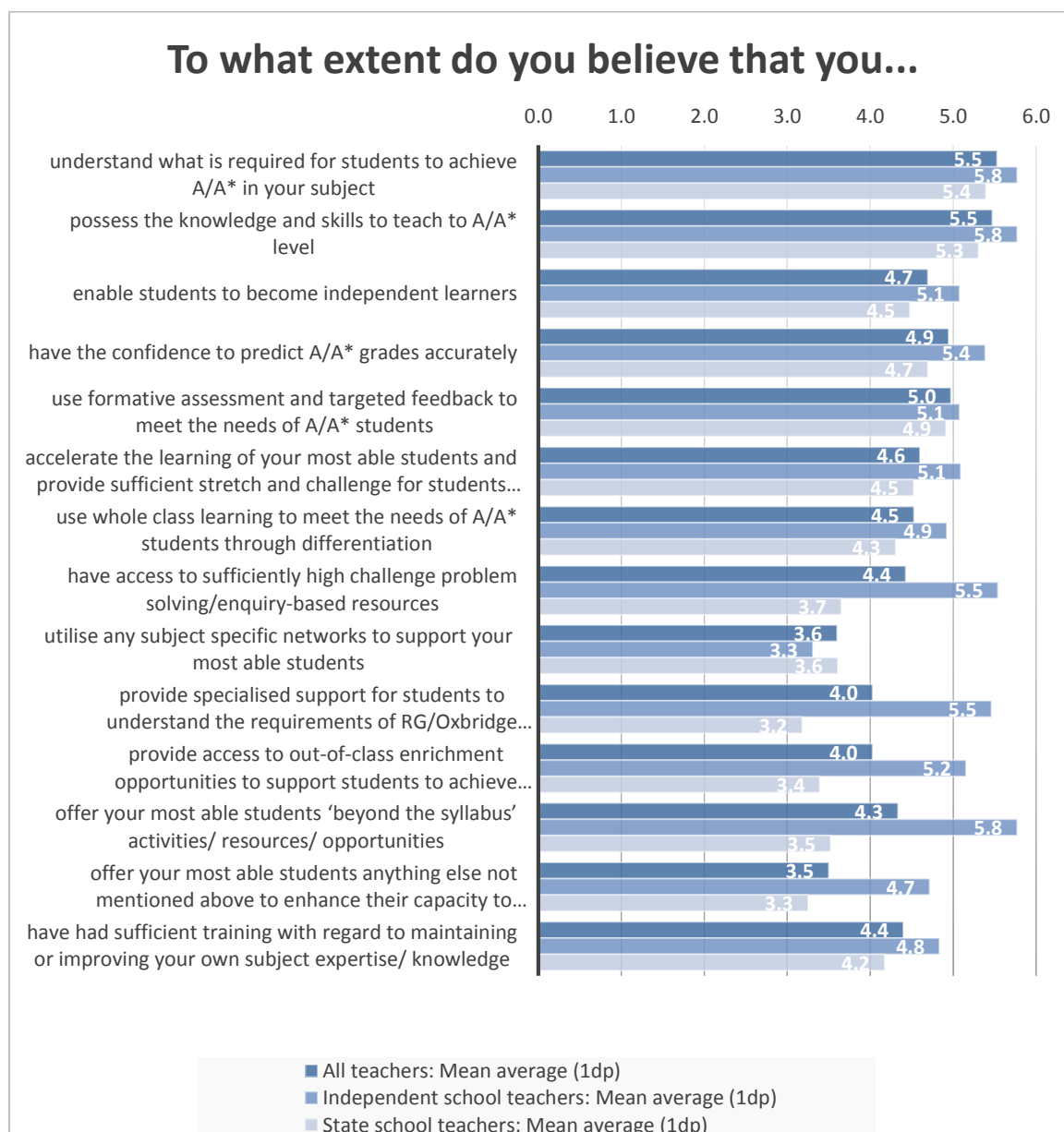
- *I used to think an A\* student was one which can just answer questions correctly and gain marks on the paper (which is what essentially enables a student to achieve such a grade), I now understand it is more of a thinking process and an application of skill that differentiates the high achievers from the rest (KS4-2-MATHS).*
- *I feel that developing reading skills is absolutely essential to getting an A\* and the project has helped me to see ways to do that. (KS4-2-ENG)*
- *I think that I have seen that these competencies cannot be taught but can be nurtured by the teacher. (if the surrounding environment is supportive of this) (KS5-1-CHEM)*
- *Project has raised awareness in terms of*
  - *allowing students and myself to read outside the syllabus*
  - *encourage students to articulate their views more clearly and to have the confidence to criticise, defend and refine other students [sic] views. (KS5-3-CHEM)*

Note: although this data was quantifiable, due to the relatively small overall sample size we considered it would not be appropriate or valid to conduct any statistical analyses.

To gauge the extent to which the teachers felt they fostered the skills, behaviours and competencies required to teach to the highest level, in both surveys, the teachers were asked to use a 1-6 scale rating to indicate their self-belief and confidence levels around a series of statements focused on teaching to A/A\* level (→ TO1, TO2, TO3). Their responses and how these changed over time (between survey 1 and survey 2) are illustrated in the two graphs that follow (Graph 1 and Graph 2) and discussed in terms of how his project has impacted on this group of teacher-researchers. The question asked was 'to what extent do you believe that you...' and this was followed by 14 statements. A 1-6 rating scale was used where 1=UNDECIDED; 2=NOT AT ALL; 3=LIMITED EXTENT; 4=TO SOME EXTENT; 5=TO LARGE EXTENT; 6=FULLY.



To a large extent, the second survey responses tended to reflect the findings of the first survey. Staff confidence in offering what was required for students to achieve at the highest level was greater in almost all categories in the independent sector, as illustrated in **Graph 1** below:

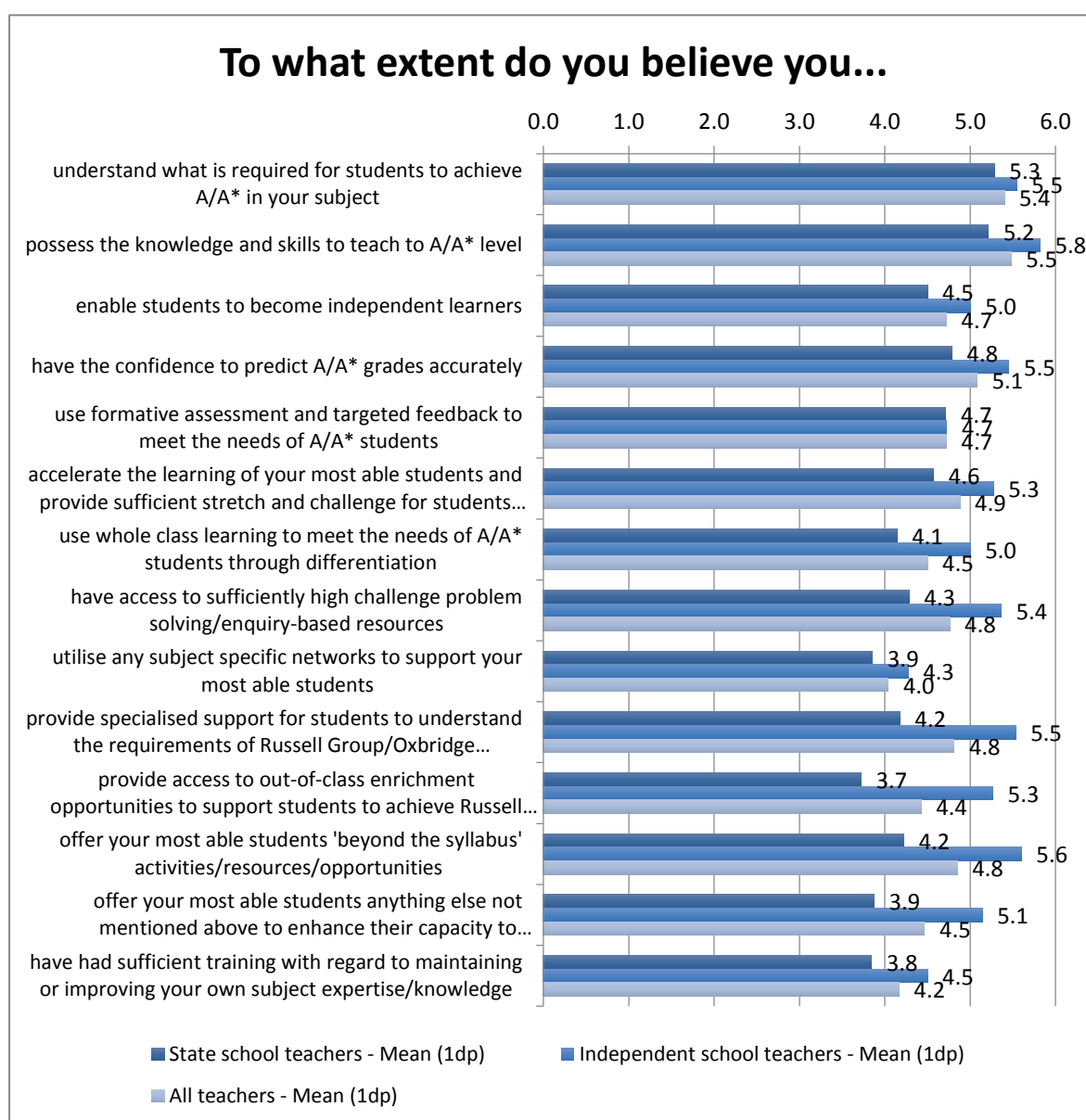


**Graph 1: Staff survey 1 (n=39): KS4 and KS5 state and independent school teachers' responses to question "To what extent do you believe you..."**

With one exception ('utilise any subject specific networks to support your most able students'), the independent school teachers reported feeling far more confident and better equipped (in terms of subject knowledge, skills to teach to A\*, ability to predict high grades and accelerate learning so as to provide sufficient stretch and challenge etc.) than their state school peers to provide what is needed for students to achieve at the highest level. Their responses indicated they could also offer and/or had greater access to enrichment and progression support structures and mechanisms such as access to high challenge problem solving and enquiry-based resources, out-of-class enrichment and 'beyond the syllabus' activities designed to develop and promote scholarship. For example, in additional comments provided, teachers spoke about the use of journal articles in lessons; activities on websites; using questions from Olympiads/university exams; subject 'clubs' and talks; trips (including overseas e.g. to CERN) and involvement in competitions such as an Olympiad.

The independent school teachers' responses to '...providing specialised support for students to understand the requirements of Russell Group/ Oxbridge entry/ interviews' also indicated a greater ability to offer dedicated, informed support for students applying to these universities. For instance, some teachers highlighted that many staff were Oxbridge graduates and that teachers offered students classes and other types of specific support. In the re-survey one teacher added: "... all Oxbridge students are allocated a teacher (who teaches a relevant subject) to provide practice interviews every week for four or five weeks leading up to interview". In contrast, most of the state school teachers who commented said that this type of support and preparation came under the remit of the careers department or was attended to by others outside of class.

Interestingly, in the second survey, the majority of the state school teachers seemed to have gained greater insight or confidence in almost all categories (related to fostering skills and competencies) as a result of their involvement with the project. Graph 2 below displays the teachers' survey responses to the same set of statements, when the survey was re-run towards the end of the project (→ TO1, TO2, TO3):



Graph 2: Staff survey 2 (n=33): KS4 and KS5 state and independent school teachers' responses to question "To what extent do you believe you..."

There are a number of key points to note regarding **all four target teacher outcomes** when we compare **Graph 1** and **Graph 2**:

Although the confidence of the independent school teachers remained higher than the state school teachers (as per the first survey) in terms of being able to provide what is needed for students to achieve at the highest level, nonetheless the state school teachers now appeared to feel more confident in terms of their ability to:

- predict A/A\* grades accurately
- accelerate the learning of their most able students and provide sufficient stretch and challenge for students
- have access to sufficiently high challenge problem solving/enquiry-based resources
- utilise any subject specific networks to support their most able students
- provide specialised support for students to understand the requirement of Russell Group/Oxbridge entry/ interviews
- provide access to out-of-class enrichment opportunities to support student to achieve RG/Oxbridge entry
- offer their most able students 'beyond the syllabus' activities/ resources/ opportunities
- offer their most able students anything else not mentioned to enhance their capacity to achieve at the highest level.

In the baseline survey, where state school teachers commented on 'beyond the syllabus' activities for their students, there were references to summer schools and other university-run outreach. Within the school, 'scholarship sessions' and investigations off the syllabus were mentioned, along with teaching AS content to Year 11 students. By the time of the re-survey, there was a strong sense that teachers' confidence and knowledge had grown as indicated by their comments about different ideas and activities they had implemented into their classroom practice as a result of what they had seen, experienced and discussed in the independent schools (→ **TO1, TO2, TO3, TO4**). Many of these were based around thinking and challenge activities:

- *Tried to get pupils thinking 'outside' of their comfort zone (with much resistance - particularly from high achieving boys). (KS4-3-MATHS)*
- *I have done some useful work with Year 10 students at our partner schools where I've tried out specific reading and writing strategies with them to bridge the gap between GCSE and A-Level. I'm currently evaluating some of the results from this. (KS5-2-ENG)*
- *I have given students a greater range of texts to aid their learning. I have encouraged students to write their ideas into formal essays. (KS4-2-ENG)*
- *I have also placed more focus on the discussion with questioning rather than on waiting for students to take notes. I have set more note-taking as prep work and monitored this so that more time is available for trying to apply the key concepts and focusing on language and exam technique. (KS5-2-PHYS)*
- *Pace in my lesson has been much better/faster with the right resources. (KS5 PHYS – 3)*
- *I do not 'dumb down' questions and I expect students to come to my level more than I used to. This is difficult when you have extremely weak students in a class with A/A\* students as the weak students can become lost. (KS5-1-CHEM)*
- *Students lead the lesson with teacher's resources that have been given to them in preparation (KS5-3-BIOL)*
- *Using Google Drive effectively to set and share and create holiday work for AS and A2. Have started to build a Biology website for student reference. Have used Prep work regularly and as the major driving force in the lessons more. Have created more "models" of work and shared on Moodle to emphasise the quality I am after. Tried using more concrete Biological examples to hang theory off of. (KS5-1-BIOL)*
- *I have done a lot more teaching around the subject with the A2 students (going off syllabus) (KS5-1-PHYS)*

Furthermore, over the course of the year state school teachers were now utilising a broader range of sources to personally keep up-to-date with their subject (→ **TO1, TO2, towards TO3**). In the baseline survey, of those teachers who responded to this question most spoke about engaging in reading, e.g. use of internet sources, magazines, journal articles; a very small number indicated attending conferences and lectures. In the re-survey, while comments were similar there too was a noted increase of state school teachers becoming more involved than before in experiences and events of a

more academic nature for the purposes of maintaining and updating their subject knowledge, e.g. there were mentions of joining the Royal Society of Chemistry (RSC), taking out journal subscriptions, development of departmental subject INSETs, engaging in personal research activities such as using Google, YouTube and the subject-specific online communities set up as part of this project (see section 8.3.1 for screenshots). These were just some examples given that suggested an increase in the breadth and depth of overall activities undertaken. This difference between the first and second survey was felt to be a significant and highly positive aspect of these research-based CPD experiences for the state school teachers.

Overall, the majority of the state school teachers felt they had gained greater insight or confidence in almost all categories related to the fostering of skills and competencies as a result of their involvement with the project and this was evident from their responses in the second survey (→ TO1, TO2, towards TO3, TO4). For example, the following reflection was offered from one KS4-2-Maths teacher: “I used to think an A\* student was one which can just answer questions correctly and gain marks on the paper (which is what essentially enables a student to achieve such a grade), I now understand it is more of a thinking process and an application of skill that differentiates the high achievers from the rest”. And, as reported in the UCL IOE’s external evaluation of our data, “some said that the observations, subject networks and sharing of resources were useful. Other teachers mentioned now knowing strategies for how to prepare their ‘top end’, or what skills they needed to give students to achieve. One KS4 state school teacher said “The project did not give me any skills as such, it just gave me an insight into how classes with a high proportion of A/A\* might look”. Other comments recognised that resources and pace, as seen in the independent sector, were crucial for impact.

When asked what the teacher felt they did particularly well in helping students to achieve A/A\* grades/ Russell Group entry, their baseline and re-survey responses were broadly similar. The independent school teachers offered a wide range of responses including being able to focus on ‘high ability’ students, possessing strong subject knowledge, being able to provide constant support for students and a range of extra-curricular and enrichment activities. However, although the KS4 state school teachers were still more likely to focus on the technical aspects of exam preparation, at KS5 the teachers were now speaking more about using materials and content that goes beyond the specification and providing a greater range of extension activities (→ all four teacher outcomes):

- *I have done some useful work with Year 10 students at our partner schools where I've tried out specific reading and writing strategies with them to bridge the gap between GCSE and A-Level. I'm currently evaluating some of the results from this. (KS5-2-ENG)*
- *I have also placed more focus on the discussion with questioning rather than on waiting for students to take notes. I have set more note-taking as prep work and monitored this so that more time is available for trying to apply the key concepts and focusing on language and exam technique. (KS5-2-PHYS)*
- *Pace in my lesson has been much better/faster with the right resources. (KS5-3-PHYS)*
- *I do not 'dumb down' questions and I expect students to come to my level more than I used to. This is difficult when you have extremely weak students in a class with A/A\* students as the weak students can become lost. (KS5-1-CHEM)*
- *Students lead the lesson with teacher's resources that have been given to them in preparation (KS5-3-BIOL)*
- *Using Google Drive effectively to set and share and create holiday work for AS and A2. Have started to build a Biology website for student reference. Have used Prep work regularly and as the major driving force in the lessons more. Have created more "models" of work and shared on Moodle to emphasise the quality I am after. Tried using more concrete Biological examples to hang theory off of. (KS5-1-BIOL)*
- *I have done a lot more teaching around the subject with the A2 students (going off syllabus) (KS5-1-PHYS)*

The survey invited teachers to comment on what they saw as the key barriers to the achievement of A/A\* grades in their subject. The teachers’ responses in the baseline and second survey did not differ significantly. The independent school teachers highlighted barriers lack of engagement, lack of exam technique and leaving revision too late. In both surveys, the state school teachers referenced a lack of cultural capital, poor prior attainment and knowledge and a lack of mathematical and academic

literacy skills. In both surveys, some of the KS4 state school teachers gave a particular mention to the constraints imposed by an OFSTED/ results-driven culture, which they felt encouraged a 'teaching to the test' and 'spoon-feeding' mentality. A small number of the state school teachers indicated that during the project their view had changed about the attitudes and skills needed alongside subject knowledge (as indicated in quotes presented earlier).

The survey invited teachers to choose five elements from a given list regarding 'What would enable you to make the most progress in increasing or nurturing A/A\* performance?'; their selections highlighted some differences between the sectors. The elements presented were: *guidance from the examination boards; exemplars of A/A\* work; whole school INSET; subject consultant support; subject-based INSET; resource materials such as information/ material for teachers or activities/ material for students; coordinated teacher observation; student booster sessions; working with staff from other schools/colleges; strategies for teaching G&T students; setting or streaming by group*. In the second survey, the independent school teachers tended to rate *coordinated teacher observations* as most helpful while the state school teachers rated *resource materials, exemplars of A/A\* work and booster sessions* most highly. The state school teachers also placed greater importance on *working with staff from other schools*. Interestingly, the KS5 state school teachers in particular frequently chose *setting and streaming by ability* as did the independent school teachers. Whereas previously, *specific strategies for teaching gifted and talented* had been chosen as being of particular importance, by the time of the second survey this was rated far less highly. In the second survey, many of the teachers indicated that their choices had been influenced by what they had learnt through their involvement in this LSEF project (→ TO3).

Almost all of the state school teachers reported that the act of going into independent school classrooms and the opportunity to discuss ideas directly with independent school colleagues had had a real impact on their thinking and practice. These responses and quotes such as those presented below would tend to suggest that we have been relatively successful in achieving **all of the four stated teacher outcomes**:

- *Raising the culture/standards of my students came directly out of my experience at both IND-1 and IND-4 (KS5-1-PHYS)*
- *I have had experience with what strategies are used for the most able in the country and have used this to push my top set students to make exceptional progress.(KS4-2-MATHS)*
- *Having seen the high standards at some of the other schools on the project, I have tried to ensure that my students are fully equipped so that they can compete! (KS4-2-ENG)*
- *It has been good to share ideas and thoughts with colleagues who predominately work with high level students. And to see what they have used in the classroom (KS4-1-MATHS)*
- *I have been very inspired when I have met teachers particularly from the independent schools as I have heard about the things they do and events they attend. It is also interesting to discuss physics concepts- reminds me why I choose to teach the subject. I guess this is because I have virtually always been the only physics teacher in a school. (KS5-2-PHYS)*

Although the state school teachers were the intended beneficiaries of the study, there too was evidence to indicate that many of the independent school teachers had also professionally benefitted from the project activities in a range of ways as these example quotes illustrate:

- *I am questioning my practice more as a result of the project and am starting to look at how I could be more effective in driving up results even more. (IND-1-ENG)*
- *The project has reminded me of how much more I always have to learn. (IND-3-ENG)*
- *Seeing many of the same problems across a wider range of students has helped clarify my thinking (IND-2-PHYS)*
- *I had forgotten how good white boards are - visiting schools involved in in the LSEF helped to remind me how useful they are in lessons. (IND-3-CHEM)*
- *I sometimes assume a lack of key terminology use is due to a lack of revision, however I've come to realise that students often just forget to use a term which they don't use every day. I will be spending more time focusing on this in future lessons. (IND-3-BIOL)*
- *It has helped me to clarify what I need to do to help the pupils I teach because we have been made to identify and discuss the things we do. I think before that I took alot of things for granted. (IND-3-CHEM)*

In some cases, the teachers reported that their experiences of discussing, experiencing and seeing teaching and learning in state schools had had an impact on their thinking about teaching and learning. For some, their thinking about pedagogy seemed to have changed or developed:

- *I certainly have stopped forming opinions on the ability of students or my perception of what they can achieve based on how vocal they are in class or how quickly they can respond to questions. I no longer put any value in speed (not that I valued it above all other factors previously) at which students work but instead the depth of their understanding, how well they can link concepts and apply them to other situations, and also how insightful they are when engaging in discussion (IND-4-CHEM)*
- *I have become even more pragmatic about it! For the A\*, a lot of it is perspiration rather than inspiration. (IND-3-MATHS)*
- *Realising that a knowledge-rich focus is key to success. (IND-4-ENG)*
- *I am a little more convinced of the need for teacher subject knowledge to be high. I am also more convinced of the need for students to practice writing to get better. Finally, the need to keep drilling exam specific skills and knowledge is crucial. (IND-1-ENG)*
- *My thinking has convinced me that with maths in particular, if a teacher is uncomfortable at all with the content, the students have no chance. (IND-3-MATHS)*
- *An increased belief in the importance of showing pupils where an equation for example comes from rather than plucking it from thin air. (IND-4-PHYS)*

And, although to a far lesser degree than the state school teachers, the independent school teachers also fed back that as a result of what they had seen, experienced and discussed in the state schools, some of these activities had subsequently become incorporated into their classroom practice:

- *Massive whiteboards in all the maths classrooms to encourage group work and variety in lessons - as seen in KS5-ST-1 lessons. (IND-3-MATHS)*
- *Tried more AfL e.g. 'invisible marking' to force students to address mark schemes. Tried to rewrite some prep exercises to include more open-ended questions as well as routine practice. Talked to students more about how to study and how to learn. (IND-2-PHYS)*
- *Experimenting with paper-free classroom; blended learning, more online activities, more use of apps in lessons (IND-1-BIOL)*
- *I have started using more preparatory homework e.g. reading an article or a text book chapter, so that students arrive to lessons with the ability to ask more insightful questions and have the chance to iron out any issues that they have already met. (IND-3-BIOL)*

While it was relatively unsurprising to read, at an individual level, that many of the independent school teachers felt their work and/or professional confidence in the areas covered by this question had not changed as a result of being involved in this LSEF project, a cohort-level comparison of this group's baseline and re-survey responses suggested that actually there had been some changes in terms of increased confidence in their ability to:

- have the confidence to predict A/A\* grades accurately
- accelerate the learning of their most able student and provide sufficient stretch and challenge for students
- use whole class learning to meet the needs of A/A\* students though differentiation
- utilise any subject specific networks to support their most able students
- provide access to out-of-class enrichment opportunities to support students to achieve Russell Group/ Oxbridge entry
- offer their most able students anything else not mentioned to enhance their capacity to achieve at the highest level.

It is of little surprise that some challenges evidently remain for the state sector as elucidated by some additional comments offered in relation to these questions (→ TO4). For example, in response to '...enable students to become independent learners', several state school teachers felt this was difficult in their school because students had problems with organisational skills and relied on the teacher to "tell them". In the re-survey, one independent school teacher commented that because of the limited time and amount of content being covered, "any independence developed is down to the students not the teacher". Some state schools also mentioned the impact of Ofsted gradings on confidence, "if not graded 'outstanding' that somehow means not fully capable of getting A/A\* results".

One teacher felt that the pressure from Ofsted was resulting in a spoon-feeding approach being taken.

In terms of the teachers' increased confidence as reflective practitioners (→ TO4), this was demonstrated through different sources of qualitative data:

- teachers' written reflections in their lesson observation notes (Visit 1 and 2)
- staff survey comments (baseline and re-survey – example quotes have been included in this commentary)
- anecdotal feedback from project meetings

From the outset, it was evident that teachers were already starting to reflect on their research experiences of observing their specialist subject being taught in the 'other' sector as evidenced by their insightful, considered comments. While the documentation provided to every teacher-researcher to assist them with recording their notes (and included a section with prompts aimed at encouraging further thoughts and reflections, the choice to write anything lay with each individual. In many instances, for both the first and second lesson research visits, teachers wrote down thoughts about particularly interesting points that had stood out for them (→ TO3, TO4), e.g.

- *Motivation is intrinsic. Learning for the sake of learning is key...This was very high level but the pace was not as blindingly fast as I thought it would be. Students are given the time and space to address misconceptions – of which there were a few (albeit high level ones) (KS4-1-PHYS; Visit 1)*
- *Limited use of praise c/w my school...This whole lesson works because they have done the background prep, research which they show & which forms the heart of the learning & focuses the discussion. A very student led lesson (KS4-1-ENG; Visit 1)*
- *Student led. They solve, make mistakes, discuss with each other, correct each other and get corrected through teacher guidance – resilience (KS4-2-MATHS; Visit 1)*
- *High expectations – students pushed to develop their interpretation of ideas/poems (KS4-2-ENG; Visit 1)*
- *Good use of explaining concepts – building up a picture (KS4-3-PHYS; Visit 1)*
- *No differentiation in class [but some for homework] (KS4-3-PHYS; Visit 1)*
- *Pedagogy doesn't even seem to be considered (KS4-3-MATHS; Visit 1)*
- *[students] consistently discussing on task & enthused by subject. High motivation...want to sound clever & improve, challenged to improve the quality of expression (KS4-3-ENG; Visit 1)*
- *standard of teacher talk in Y10 as high as it is for KS5 (KS4-3-ENG; Visit 1)*
- *Questioning used to check learning – students persuaded to ensure answers are precise (KS5-1-ENG; Visit 1)*
- *Teacher modelled speaking using literary terms to which pupils responded in subsequent answers (KS5-1-ENG; Visit 1)*
- *Teacher very knowledgeable and easily drew comparisons with other texts they may have learned in lower school, in order to contextualise ideas (KS5-1-ENG; Visit 1)*
- *35 mins felt too short to tackle themes emerging in this novel but there is a sense of ongoing learning rather than individual LOs being met with each lesson (KS5-1-ENG; Visit 1)*
- *very short (feels!) lesson – feels more like just one concept is covered but in detail. i.e. short "intense" learning lessons (KS5-1-BIOL; Visit 1)*
- *much greater detail covered in the lesson than might have been expected for GCSE...there was a sense of the teacher helping them to understand concepts as 'equals' (KS5-1-PHYS; Visit 1)*
- *Very much a 'traditional' style of teaching which relies heavily on the work being done outside the lesson and the students drive and desire to further their own learning beyond the bounds of the syllabus (KS5-1-PHYS; Visit 1)*
- *It was as though the students were expected to come to the level of the teacher delivery rather than the reverse (KS5-1-BIOL; Visit 1)*
- *Students seem very able and willing to start a problem and try a strategy then to start again if not progressing...confident to share silly mistakes and misconceptions (KS5-1-MATHS; Visit 1)*
- *Struck by very high information density of lesson. A lot of knowledge is being displayed by both teacher and students although the teacher is pressing and encouraging the students to develop this even further. Having said that the structure of getting students to write on the*

*board and then discuss is a familiar and interactive one – the difference here is the amount of pre-existing knowledge they are able to marshal in support of the task (KS5-2-ENG; Visit 1)*

- *Copy of New Scientist to early completers. Reading through with no direction (KS5-2-CHEM; Visit 1)*
- *Follow on questions – students had to justify statements that they made and explored why they came up with the answer (KS5-2-CHEM; Visit 1)*
- *“Because the students have a good-excellent grasp of the underpinning knowledge – an intelligent dialogue was facilitated and their knowledge taken forward, rather than filling gaps in knowledge (KS5-2-BIOL; Visit 1)*
- *The worksheet being used in class was an A level resource” (KS5-2-BIOL; Visit 1)*
- *The students asked intelligent questions of the teacher and each other. Their questioning showed high levels of independent study and learning and scientific curiosity. The teacher embraced this and used it to move the lesson forward with high ordered questioning and dialogic teacher (KS5-3-BIOL; Visit 1)*
- *The “control” of the lesson/behaviour/pace was “driving from behind” rather than “led from the front” (KS5-1-PHYS; Visit 2)*
- *What strikes me is that these students (Y13) are only just learning the meaning of these AOs [assessment objectives] as part of their exam preparation, whereas my classes have been aware of them from the start. Do AOs hinder learning as a process? Is it an element to be introduced later, after a more holistic approach? (KS5-1-ENG; Visit 2)*

Independent school teachers engaged in reflections too, albeit theirs sometimes being somewhat critical of what they saw:

- *The inspirational leaps, and extension of brightest was missing. It took 1.5 hours to do what I'd aim to do in 40-60mins with similar kids. More pace needed (IND-1-MATHS; Visit 1)*
- *Lacked pace. Teacher not sufficiently comfortable with the material herself; she was overly cautious and therefore moved too slowly. Top kids must have been bored (IND-1-MATHS; Visit 1)*
- *On reflection, there is clearly a balance between didactic “chalk & talk” versus pupils taking responsibility for their [sic] own learning. In Physics, the question is where should the balance be. In my teaching I am probably over didactic, perhaps this teacher left too much to their pupils (who may have benefitted from some stuff being set out for them & explained with Q&A) (IND-1-PHYS; Visit 1)*
- *The lesson was long. There was a feeling that one of the tasks went on a long time and perhaps more could have been said or done in the time available (IND CHEM 3; Visit 1)*
- *No evidence of stretch & challenge. May be due to the syllabus content but all teaching in this lesson was factual and nothing in it addressed beyond syllabus ideas, or challenged students (IND-2-PHYS; Visit 1)*
- *Lessons have significant student involvement – they are doing the work but, it is broken down & walked through by teacher i.e. “do this”, “now do this”, “next move on to” etc. At what point do students gain the right learning/independence skills to do this for themselves? Should they have to or is that the role of the teacher? (IND-4-CHEM; Visit 1)*
- *Significant difference in approach/attitude of AS students compared to A2. AS still in “school mode” – chatty/immature/lack focus but A2 seem very driven. What changes between the 2 years? How can strategies be instilled to help this @AS? (IND-4-CHEM; Visit 1)*
- *The kids are very compliant – but they don't really ask many questions (IND-4-PHYS; Visit 2)*
- *There is an urgency to get through the material due to the rapidly approaching exams. However, this seems to be at the detriment of learning and I am not convinced a huge amount of progression was made (IND-4-BIOL; Visit 2)*
- *The balance between modelling technical language and forcefeeding it seemed to be exactly right – students were encouraged to experiment with it, to take ownership of it, rather than being indoctrinated with it (IND-2-ENG; Visit 1)*
- *Students sit around tables of 4, therefore some have their backs to each other. Would a ‘seminar’ layout be more effective in encouraging the students to respond to each other's points, i.e. less just teacher-led – more peer to peer? (IND-3-ENG; Visit 2)*



State and independent school teachers recorded thoughts on what could be useful for taking back to their own classrooms, in particular for providing additional stretch and challenge to their most able students, e.g.

- *Lack of attentiveness to independent learning in my lessons and how well this class coped with it (KS4-2-MATHS; Visit 1)*
- *Differentiate through questioning. High level questioning like ‘evaluate’ and ‘describe’ will be used to challenge more able students (KS4-2-BIOL; Visit 1)*
- *I could increase the complexity of vocab as aspirational to students (KS4-3-ENG; Visit 1)*
- *The use of quotations about the play/writer is actually planned into one of my lessons this week – I was initially worried about its relevance, as not explicitly marked in the exam, but I now think it is right to include it as contributing to wider learning/more critical thinking, a skill suitable for my more able students (KS5-1-ENG; Visit 1)*
- *The idea of discussing sections of the text that students had already prepped is one I use with my Lang & Lit AS class – this is something that they very much enjoy but in terms of managing, can be tricky to keep weaker students on track. It would be good to think of a way to use this type of discussion to stretch my more able students without excluding the majority of the class. I usually set whole class questions so students can prep for this type of discussion but I will look into extension Qs for the more able/rephrasing their questions. It is interesting to note that because of the shorter lessons, my prep work section equates to entire lesson in this [IND] school (where not a double) (KS5-1-ENG; Visit 1)*
- *Constant extension of concepts. Why? How? What it? etc. (KS5-2-PHYS; Visit 1)*
- *Instead of avoiding a complex proof or squeezing the proof into less time, give it plenty of time and bring in other concepts (KS5-2-MATHS; Visit 1)*
- *I will get hold of some pre uni papers to use with my A/B students in w/shop (KS5-2-BIOL; Visit 2)*
- *I like the way that exam marks were publicly shared and pairs of students given each other’s papers to try to work out where marks were gained/lost before seeing the mark scheme was a useful activity (KS5-2-PHYS; Visit 2)*
- *Use of obscure but interesting examples to hook in learners – makes more sense. Talking in specifics to make generalities clear rather than the other way round” (KS5 1 BIOL – Visit 2)*
- *Giving students the opportunity to independently try and reach a solution with the support of peers (KS4-1-MATHS; Visit 2)*
- *Students explanation building and correcting each others [sic] mistakes helps to develop mathematical literacy (KS4-1-MATHS; Visit 2)*
- *Seeing fun extension work provided would work in some specific classes I teach. “Rewarding work with extra work” is a habit I have perhaps fallen into and it would be worth trying a new system of providing either a fun task/game or practical element for those who complete their work (KS4-1-BIOL; Visit 2)*
- *The practice which would be beneficial to stretch and challenge my more able students is to provide them with a high level task. For instance, when teaching Year 10 or 11 most able students, I will provide for them A-level work which I believe will challenge their curiosity and critical thinking (KS4-2-BIOL; Visit 2)*

Independent school teachers also gained ideas they felt could be useful for their own practices:

- *Getting students to work in groups and present work is really good – I need to get some big sheets of paper & more board space (IND-3-MATHS; Visit 1)*
- *The enthusiasm & passion of the teacher is palpable – reminds me of the importance of this – must be there for students to be fully engaged (IND-3-ENG 3; Visit 1)*
- *Because the students I teach don’t need different approaches to make them focus – they are focused because of their drive to achieve – I think I am unimaginative in the way I use different resources. This [lesson activities observed] was inspiring (IND-3-ENG; Visit 1)*
- *Pupils were actively using scrap paper & whiteboards to answer Qs or write notes, reducing pressure to be perfect 1<sup>st</sup> time (IND-3-BIOL; Visit 1)*
- *Long (20’) task gives teacher time to give 1:1 feedback to most students while others get on with their work, mostly purposively. I could learn from this – setting longer tasks to allow for this (IND-2-ENG; Visit 1)*
- *Very pupil focussed with them working in groups to revise. I liked the idea of pupils teaching the rest of the class the most difficult questions (IND-4-BIOL; Visit 1)*

- *I really liked the idea of giving out questions with part of the answer and I will definitely use that in my lessons! (IND-3-CHEM; Visit 2)*
- *I liked very much the big whiteboards which enabled everyone to see what each group was writing – I would like to try that out in my lessons as it would be good to get an instant response to pupils answers (IND-3-CHEM; Visit 2)*
- *Teacher uses smartboard to emphasise important points – I could do this more → ensures clarity (IND-3-ENG; Visit 2)*
- *I really like the way the teacher ‘puts his students on the spot’ – there is nowhere to hide in this lesson! You never know when you are going to be called on to join in. This is very effective (IND-3-ENG; Visit 2)*
- *Continued development of questions is excellent – I’m going to try to incorporate this more (IND-3-MATHS; Visit 2)*
- *Give ‘less instructions’ to students when doing practical work. Instead of step by step, give them the whole task (KS5-3-PHYS; Visit 2)*
- *When recapping a topic, adding much harder examples/concepts for reflection & challenge (KS5-2-MATHS; Visit 2)*
- *Revision by topic with questions sorted by difficulty. The more able knew this and race through in order to be stretched (KS5-2-MATHS; Visit 2)*

In addition, some state school teachers commented on practices they would like to try but also potential obstacles they felt they would face, e.g. time-consuming behavioural issues, ensuring the needs of a mixed ability class in addition to trialling targeted approaches and practices for the most able:

- *The pace of the lesson was very fantastic; ‘The T shared the starter with pupils by testing students’ previous knowledge and recapping the previous knowledge. After the starter, the T dived quickly into the first activity by explaining the science behind the topic after which he moved smoothly into the practical demonstration’ – I think this practice enhances students’ understanding because the activities are linked – each activity leads into the next one; the only fear in applying this practice is the behaviour of the students I teach because whenever I am teaching, I have to stop to manage behaviour constantly and this would not allow smooth transition from one activity to the other (KS4-2-BIOL; Visit 2)*
- *There was a culture of learning, all the students were happy to get answers wrong if it meant that they fully understood the topic. In my experience of teaching in inner city school, students will often not want to answer question in lesson as this would make them look like they had failed amongst their peer group. The students in this lesson clearly had spent many hours outside of the classroom honing their [sic] chemistry knowledge, whereas often the students in inner city schools have social pressure which make this time commitment impossible (KS4-1-CHEM; Visit 1)*
- *focus on detail – tiny details – encourages depth of analysis. Not easy to do with the larger class (KS4-3-ENG; Visit 1)*
- *The idea of being able to intensively deconstruct via whole class discussion is attractive but potentially problematic in larger class sizes [of mixed ability students]. I currently make use of a similar technique via small group focused discussions and whole class shared feedback but this is not a system that is currently as intensive in terms of stretching most able students. I will be looking into ways of managing this within larger class sizes (KS5-1-ENG; Visit 1)*
- *As with previous lessons, pedagogy is not really evident. Just “discuss/do” (chalk n talk!) and everyone is happy with that. I’m not sure we could transfer this model as our pupils won’t just ‘do’ and we have far too many Ofsted inspired hoops to jump through. I find myself thinking of alternative strategies I would suggest to ‘engage’ these students – although they are engaged whatever they are given! (KS4-3-MATHS; Visit 2)*
- *“IND-2 is an amazing school, with the most motivated students I have ever seen...Sadly I can not apply a lot from this lesson, it was far too [sic] open and lacked the scaffolding and differentiation my students require” (KS4-1-CHEM; Visit 2)*

While the staff survey (baseline and re-survey) has been discussed in the above commentary and also some of the teachers’ reflections from their visits to each other’s schools (Phase 1 lesson research visits), additional example quotes from the re-survey are provided here serve to further

illustrate what the teacher-researchers have learnt through their ability but also the opportunity to reflect on their own and each other's practices (→ TO3; TO4):

- *what has changed is some ideas in how to address the competencies (KS5-1-PHYS; second staff survey)*
- *I do think I have a stronger sense of the importance of knowledge, even in English (which tends to be seen now as a skills-based subject). That knowledge may come through specific phrases and facts about texts, although in the case of the highly able I suspect it is based in the repertoire of reading undertaken, and the ability to draw on that as a comprehensive knowledge-base of vocabulary, giving the basis for subtle semantic differentiation, and also generic and allusive awareness which allows one to read more precisely and deeply. I would like to investigate this further (KS5-2-ENG; second staff survey)*
- *I feel that developing reading skills is absolutely essential to getting an A\* and the project has helped me to see ways to do that. (KS4-2-ENG; second staff survey)*
- *I certainly have stopped forming opinions on the ability of students or my perception of what they can achieve based on how vocal they are in class or how quickly they can respond to questions. I no longer put any value in speed (not that I valued it above all other factors previously) at which students work but instead the depth of their understanding, how well they can link concepts and apply them to other situations, and also how insightful they are when engaging in discussion (KS5-1-CHEM; second staff survey)*
- *Project has raised awareness in terms of*
  - *allowing students and myself to read outside the syllabus*
  - *encourage students to articulate their views more clearly and to have the confidence to criticise, defend and refine other students [sic] views. (KS5-3-CHEM; second staff survey)*
- *I have found the support from IND-2 and the google chrome network helpful. It is actually the first time that I have worked with colleagues from such a range of schools. I always feel inspired after visiting other establishments. (KS5-1-PHYS; second staff survey)*
- *I have had experience with what strategies are used for the most able in the country and have used this to push my top set students to make exceptional progress. (KS4-2-MATHS; second staff survey)*
- *It has helped me to clarify what I need to do to help the girls I teach because we have been made to identify and discuss the things we do. I think before that I took a lot of things for granted. (IND-3-CHEM; second staff survey)*
- *Observations of other teaching strategies also helped my understanding of what more able students behaviours could look like. (KS5-2-CHEM; second staff survey)*

Finally, in the latter stages of the project, individual teachers were invited to speak about their research experiences and the impact of these for their teaching, their students' learning and for going forwards generally. Without exception, every teacher accepted. Their keen willingness and ability to share their learning more widely was denoted as one indication of this project's achievement of target teacher outcome TO4.

One meeting involved a group of teachers across the five subjects and two sectors involved in the study meeting with the Deputy Mayor for Education; the other event was the project conference held at City Hall where interim findings were shared with a public audience. At the meeting with Munira Mirza, teachers openly and enthusiastically shared reflections about what they had learnt from the experience of collaborating with each other cross-sector and the benefits and challenges of this for their own thinking and practices. Examples include:

- *an independent school Physics teacher (IND-2-PHYS) reflecting on the challenges facing teachers who are not part of a 'larger' department. At his own school, he is the head of Department for a team of 8 dedicated Physics teachers. In this project, he has worked with state school colleagues at different schools where they are based in a department of one – themselves! The independent school colleague reflected on the impact of these differing scenarios for maintaining the teacher's energy, verve, and passion for their subject – all of which have been identified in this study as being significant components in high challenge teaching and learning;*
- *a different independent school colleague (IND-1-ENG) reflected on what he felt was an issue of raising state school students' aspirations, confidence and self-belief. Through his visits to a*

number of state schools and colleges (KS4 and KS5) he had started to think more about the importance of exposure to a broader range of role models for students, and opportunities to a greater span of options and experiences - as a way to try and instil belief that they are capable of more: of applying to more prestigious universities, of aiming for roles in more prestigious professions. His concerns related to the cyclic problem of 'not knowing what you don't know' needing to be broken;

- a state school Chemistry teacher (KS5-1-CHEM) explained that following her research experiences (visits to the independent schools, being involved in a teacher exchange where she had taught some independent school classes), she had developed much greater confidence to teach all aspects of the curriculum without trying to somehow apologise for coverage of the more mundane aspects. In addition, she spoke of having raised the bar in her expectations of her most able students and in doing so was now demanding more of them. This changed thinking and adaptations to practice were directly due to her observations of, and discussions with, independent school Chemistry colleagues;
- two Heads of Department (Maths: IND-3-MATHS; Physics: IND-2-PHYS) at two different independent schools spoke excitedly about changes to their own practice as a result of being involved in this study: the Maths teacher said she had brought in whiteboards into all her Maths classrooms after observing these being used in the state sector and reflecting on the impact of these for more efficient teaching and learning. The Physics teacher felt that the opportunities to observe his subject taught in a different sector had enabled him to witness new and different pedagogical approaches that would likely not have happened had he simply visited a fellow independent school (where he felt he would just have seen 'more of the same'). Indeed, this same sentiment was echoed by an English teacher from another independent school.

**Table 10 – Comparison data outcomes for Teachers [if available]**

Target Outcome	Research method/ data collection		Sample characteristics	Metric used	1 <sup>st</sup> Return and date of collection	2 <sup>nd</sup> and collection
<i>e.g. Increased Teacher confidence</i>	<i>e.g. E-survey</i>		<i>e.g. 100 respondents from a total of 200 invites.  The profile of respondents was broadly representative of the population as a whole.</i>	<i>e.g. Mean score based on a 1-5 scale (1 – very confident, 2 – quite confident, 3 neither confident nor unconfident, 4 - quite unconfident, 5 – very unconfident)</i>	<i>e.g. Mean score</i>	<i>e.g.</i>

**8.1.1** Please provide information (for both the intervention group and comparison group where you have one) on:

- Sample size, sampling method, and whether the sample was representative or not
- Commentary on teacher impact (please also refer to table 5 re impact on different groups of teachers)
- Qualitative data to support quantitative evidence.
- Projects can also provide additional appendices where appropriate.

*(Minimum 500 words)*

## 8.2 Pupil Outcomes

Date pupil intervention started:

### KS4

- **Intervention 1:** tutoring over 8 weeks - Nov 2014 – Jan 2015
- **Intervention 2:**
  - Masterclass 1 (5 weeks) – Nov-Dec 2014
  - Masterclass 2 (6 weeks) – Jan-Feb 2015
- **Intervention 3:** 5 day, 4 night residential visit to Jesus College, Cambridge University) - Easter 2015

### KS5

- **Intervention** (Scholarship Graduate programme) - September 2014

**Table 11 – Pupil Outcomes for pupils benefitting from the project**

Target Outcome	Research method/ data collection	Sample characteristics	Metric used	1 <sup>st</sup> Return and date of collection	2 <sup>nd</sup> Return and date of collection
<i>e.g. Increased educational attainment and progress in Writing</i>	<i>e.g. Pupil assessment data</i>	<i>e.g. Characteristics and assessment data collected for 97 of 100. The profile of respondents matches that initially targeted in the Theory of Change.</i>	<i>e.g. mean score or percentage at diff National Curriculum Levels or GCSE grades</i>	<i>e.g. Mean score- 3.7, collected September 2015</i>	<i>e.g. Mean score- 4.5, collected June 2015</i>
<b>PO1.</b> <i>Increased academic confidence to achieve A/A* at KS4 and KS5</i>	Bespoke attitudinal survey  <i>KS4 survey 1&amp;2=paper survey</i>  <i>KS5 survey 1=paper; survey 2=electronic Google form</i>	<i>KS4: respondents were 50 Year 10 state school students selected from three 11-16 secondary schools, experiencing the KS4 interventions</i>  <i>KS5: respondents were a sample of c.50 highly able AS state and independent students studying at least one A level in English, Maths, Biology, Chemistry or Physics</i>	<i>Mix of open-ended questions and scale-rated questions</i>  <i>3 questions used 1-5 scale rating (5= always; 4= frequently; 3= sometimes; 2= occasionally; 1= rarely)</i>  <i>Mix of open-ended questions and scale-rated questions</i>  <i>3 questions used 0-5 scale rating (5= always; 4= frequently; 3= sometimes; 2= occasionally; 1= rarely; 0= no response)</i>  <i>1 question used 0-3 scale rating (3= agree; 2= disagree;</i>	<i>KS4 baseline data collected Sep 2014</i>  <i>KS5 baseline data collected May-June 2014</i>	<i>Re-surveyed June/July 2015</i>  <i>Re-surveyed post-Easter – late April/early May 2015</i>

			1= not sure; 0= no response)		
<b>PO2.</b> <i>Increased percentage of pupils achieving A and A* both at A Level and GCSE in the state schools and colleges in 2015.</i>	Formal examination results compared with historical data from 2014, 2013, 2012, 2011.		A level grades	A Level and GCSE results in state schools and colleges from 2014, 2013, 2012, 2011.	A Level and GCSE results in state schools and colleges August 2015
<b>PO3.</b> <i>Increased number of applications to Russell Group universities (this relates to pupils' raised aspirations and confidence to achieve sufficient UCAS points/grades to qualify as a Russell Group applicant)</i>	Bespoke attitudinal survey. (survey 1=paper; survey 2=electronic Google form)	KS5: respondents were a sample of 50 highly able state and independent AS students studying at least one A level in English, Maths, Biology, Chemistry or Physics	Mix of open-ended questions and scale-rated questions  3 questions used 0-5 scale rating (5= always; 4= frequently; 3= sometimes; 2= occasionally; 1= rarely; 0= no response)  1 question used 0-3 scale rating (3= agree; 2= disagree; 1= not sure; 0= no response)	Baseline data collected May-June 2014, also compared with historical data.	Re-surveyed post-Easter – late April/early May 2015
<b>PO4.</b> <i>Pupils will have access to a range of activities that enhance their learning in English, Maths and Science.</i>	Wider institutional strategic data gathered from qualitative interviews		Open-ended qualitative responses	Baseline data gathered Feb/Mar 2014	

**Narrative explanation of impact of project:**

**PO1.** Increased academic confidence to achieve A/A\* at KS4 and KS5

**PO2.** Increased percentage of pupils achieving A and A\* both at A Level and GCSE in the state schools and colleges in 2015.

**PO3.** Increased number of applications to Russell Group universities (this relates to pupils' raised aspirations and confidence to achieve sufficient UCAS points/grades to qualify as a Russell Group applicant)

**PO4.** Pupils will have access to a range of activities that enhance their learning in English, Maths and Science.

Pupil impact, in relation to the pupil outcomes outlined in the evaluation framework, and as listed in the table above, was assessed in the following ways in the project:

- KS4: the KS4 work involved the implementation of three interventions with highly able Year 10 state school students (→ PO4). To assess their effectiveness in relation to the proposed outcomes, pre- and post-intervention assessment tests and pre- and post-intervention student surveys were conducted with a group of research group (RG) and control group (CG) students (→ PO1, PO3)

- KS5: the KS5 work intervention involved the trial of a new academic programme of activities entitled the Scholarship Graduate programme (→ PO4). This involved 20 KS5 state school students and the impact of this intervention was independently evaluated through qualitative data gathered from staff and students throughout the academic year (→ PO4) and through consideration of those students' AS grades achieved in August 2015 (→ PO2) and their intended future plans (→ PO3).
- KS5: in addition, for the reasons explained in section 7.2, a group of highly able KS5 students from each KS5 Sixth Form college and each independent school were also surveyed twice (baseline and re-surveyed approximately one year later) to consider and compare their attitudes and approaches towards learning and their future study and career plans (→ PO1, PO3).

### **PO1. Increased academic confidence to achieve A/A\* at KS4 and KS5**

**KS4:** The data gathered to assess the change in KS4 state school students' academic confidence to achieve A/A\* finally proved to be limited and inconclusive.

#### ***A closer look at the data:***

Data was gathered from the KS4 students involved in the state school interventions (explained for PO4) using a bespoke attitudinal survey that was largely based on the survey used with the KS5 students in this study. It was completed by two groups of KS4 state school students: a research group (RG) and a control group (CG). Baseline data was collected in October/November 2014 and students were re-surveyed in June/July 2015; pre- and post-intervention surveys were obtained from 23 students: 18 RG and 5 CG. At each stage, each group's responses were compared; any changes from pre- to post-intervention completion were also considered. The survey comprised a number of scale-rated and open-ended questions covering the following areas:

- *About you*
  - students were asked to provide information about their year group, age, date they joined the school and predicted grades for the subjects being studied
- *What is academic confidence?* – open-ended response to questions:
  - What do you think it means to have academic confidence?
  - If someone has academic confidence what would they be like?
  - How do you think you could gain academic confidence?
- *How do you rate yourself?*
  - students were asked to rate how confident they felt (1= low confidence; 5= extremely confident) about their overall academic ability overall and in relation to the subjects being studied
- *What does academic confidence look like to you?*
  - scale-rated question ('agree', 'always', 'frequently', 'sometimes', 'occasionally' or 'rarely') in response to suggestions
- *How you approach your learning.*
  - scale-rated question ('agree', 'always', 'frequently', 'sometimes', 'occasionally' or 'rarely') in response to suggestions
  - open-ended response for how they supplemented learning outside lessons
- *Your views about your learning*
  - scale-rated question ('agree', 'always', 'frequently', 'sometimes', 'occasionally' or 'rarely') in response to suggestions about in- school learning experiences
- *Your future plans*
  - open-ended response regarding plans after Year 11 and after school or college
  - if they were planning to go to university, students were asked which universities they had in mind and any preferences
  - students were asked to list three things they hoped to achieve after school and why

The KS4 students' responses to the scale-rated questions were analysed to consider their levels of academic confidence. The data from these questions provided an indication of:

- (1) the degree to which students believe they are able to learn successfully
- (2) the extent to which students have strategies to help them overcome challenges in their learning

- (3) the extent to which students feel they are making good progress towards achieving their learning goals

Comparison of the pre- and post-intervention mean scores for the RG and CG students' responses to the three questions showed that:

- (1) **pre-intervention**: the CG students' mean scores for *'the degree to which students believe they are able to learn successfully'* was slightly higher than those of the RG students – but this difference was not statistically significant; **post-intervention**: the RG students' mean scores increased and were almost the same as the CG's scores
- (2) **pre-intervention**: the RG students' mean scores were higher than the CG students in terms of *'the extent to which students have strategies to help them overcome challenges in their learning'* – this difference was statistically significant; **post-intervention**: the RG students' mean scores fell and were almost the same as the CG's scores
- (3) **pre-intervention**: the RG students' mean scores were higher than the CG students in terms of *'the extent to which students feel they are making good progress towards achieving their learning goals'* – this difference was statistically significant; **post-intervention**: the RG students' mean scores fell and were almost the same as the CG's scores
- the post-intervention differences between the RG and CG were not statistically significant
- but, when the responses of individual students were considered some outliers were identified and it is likely these impacted on the mean scores; when removed from the significance tests, this showed that the average changes for **(1) and (2) were not statistically significant** but were **statistically significant for (3)** – and so, in other words:
  - (1) there is no change to the extent to which RG students believe they are able to learn successfully
  - (2) there no change to the extent to which they have strategies to help them overcome challenges in their learning
  - (3) RG students were less likely than before to believe they were making progress with their learning goals

Although the RG students' responses indicated a higher level of confidence in some areas compared to the CG students: *'the extent to which students have strategies to help them overcome challenges in their learning'* and *'the extent to which students feel they are making good progress towards achieving their learning goals'*, and these differences were calculated to be statistically significant, some outlying scores were identified, which impacted on the average mean scores. Therefore, overall, it seems that what is able to be learnt from this data about the students' levels of academic confidence is limited and inconclusive. In part, this is due to some of the methodological limitations relating to this work, e.g. the small overall sample size and the particularly small size of the control group limits the validity of findings from any comparisons of the RG and CG. Further reflections on this aspect of the project delivery are discussed in [section 11](#).

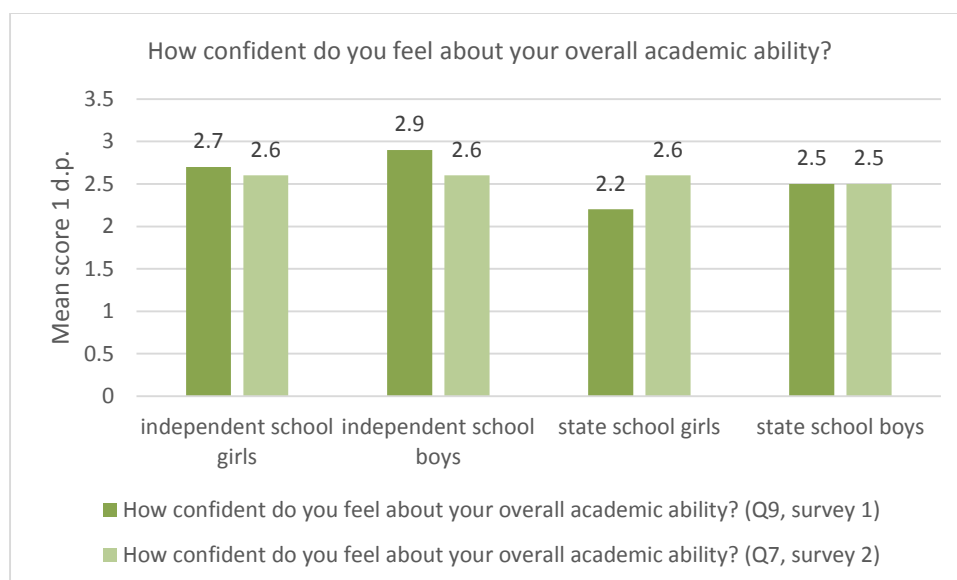
**KS5:** The data gathered to assess the change in KS5 state school students' academic confidence to achieve A/A\* showed an increase in confidence of state school girls and a slight drop in confidence of independent school boys; the confidence levels of the other two groups (state school boys and independent school girls) remained largely unchanged over time.

#### **A closer look at the data:**

For the same purposes outlined above for the KS4 survey, a bespoke attitudinal survey was designed for use with a group of high ability KS5 students in each of the state and independent schools involved in the project. Each school agreed for a group of 50 students to be surveyed in each year of the project, which enabled us to gather baseline data and comparison/impact data approximately one year later. The students surveyed were AS students in the first year of the study. At the outset of the project, the intention had been that respondents would be those directly experiencing the interventions put in place through this research. However, due to the shortening of the study by just over one school term (and as explained in [section 7.2](#) regarding our definition of 'benefitting pupils'), therefore the purposes and focus of the student survey needed to be revised. We subsequently chose to use the student survey to gauge and compare levels of confidence and attitudes and motivations to learning for groups of high ability students in the KS5 state and independent schools, and to consider any changes over time. It was this research instrument that was used to gauge the impact of [PO1](#).



In both surveys, the students were asked to rate ‘How confident do you feel about your overall academic ability?’ They were given a 1-5 rating scale, where 1= extremely confident and 5= low confidence. Through additional statistical analysis conducted by our team of external evaluators at the UCL IOE, for each response the mean average was taken away from 5 in order to provide a number which indicated confidence rather than lack of confidence (while acknowledging this as an imperfect statistical fix). **Graph 3** below illustrates the students’ responses in both surveys:



**Graph 3: (KS5) student survey 1 (Q9) and student survey 2 (Q7) ‘How confident do you feel about your overall academic ability?’**

Notes:

- baseline survey n=328 (independent school students: 209; state school students: 119)
- re-survey n=175 (independent school students: 109; state school students: 66)

As shown, the students’ mean survey responses changed very little between the time of the baseline survey and their completion of the re-survey approximately one year later (although the re-survey was conducted with a smaller cohort – approx. 55% of the original group). All categories of student (independent school girls, independent school boys, state school girls, state school boys) scored very similarly in terms of their mean scores in the re-survey: with the independent school students (girls and boys) and the state school girls scoring a mean of 2.6 and the state school boys scoring a mean of 2.5. Between the two surveys however, the most noticeable changes were the increase in confidence of the state school girls and the slight drop in confidence of independent school boys. Given these findings, it is then somewhat surprising that of those AS state school students who had been considering applying to Oxford or Cambridge University so few actually followed up on this (see **Table 1** below for **PO3**).

To qualify the above discussion regarding levels of academic confidence, the survey included questions to gauge what students understood this to be. Across the sectors, their responses could be categorised under largely the same themes: achievement; character traits such as risk-taking and perseverance; a broader interest and curiosity about the subject(s) being studied. Independent school students also made comments related to confidence in one’s subject knowledge and this could be demonstrated in different ways such as being able to explain concepts to others, not being reliant on notes, feeling assured about being able to answer any question posed.

Perhaps one of the most noticeable differences between the first and second survey responses to this question was the more frequent reference to particular character traits such as perseverance and feeling comfortable with being wrong:

Independent school students:

- *Knowing it does not matter if you make mistakes, the more involved you get, the better you will understand and learn*

- *Being able to know when I am and how to cope with being wrong, so that I can correct myself and get to know what the problem is so I can fix it*
- *They will try even if they fail and won't stop until they've succeeded*

State school students:

- *Someone who knows what he/she wants and how to get it. Then goes out of their way to get it*
- *...being able to use what you already have to achieve better even when people doubt you*
- *Being able to stand in front of your class and not being scared to fall flat on your face when presented with a challenge, e.g. a presentation or a ([sic] explanation of a particular thing*
- *Being able to face anything whether it's good or bad*
- *Also not being shy to stand out in certain situations*

**PO2.** Increased percentage of pupils achieving A and A\* both at A Level and GCSE in the state schools and colleges in 2015

As noted earlier in this report, it is too soon to know whether this outcome has been achieved as students will only sit GCSE and A level examinations next summer (KS5). However, for the KS5 we have compared current AS grades with historical data for matched pupils as a means for trying to make some kind of assessment on this outcome.

Please see below for **Tables 8-16** reported for **PO4**.

**PO3.** Increased number of applications to Russell Group universities (this relates to pupils' raised aspirations and confidence to achieve sufficient UCAS points/grades to qualify as a Russell Group applicant)

The data suggests that this outcome has not yet been achieved.

**A closer look at the data:**

To assess this outcome, we looked at the KS5 students' survey responses regarding intended future study plans beyond A levels. Although the data showed that the surveyed KS5 state and independent school students shared similar levels of academic confidence, there was a rather large difference in terms of their future study aspirations with the data indicating that significantly fewer state students intended to apply to Oxbridge and other Russell Group universities compared to their independent school peers.

Baseline survey data was gathered during the students' AS year; at that time it was unlikely they had made their choices regarding whether their future next steps would involve higher education study. Taking this into account, they were asked to indicate their future career aspirations and any plans they had in mind for university study (institutions they would like to apply to and course they would like to pursue).

As drawn out by the UCL IOE's validation of the data, just 16 of 119 state school responses indicated an intention to apply to Oxford or Cambridge University, which equates to 13% of the state school cohort surveyed. In the re-survey, just 1 of 66 (1.5%) respondents had actually applied to Oxbridge (specifically Cambridge University). In the initial survey, 118 of 209 independent school students (56%) planned to apply to Oxbridge; a year later 43 of 109 students had actually made applications (39%):

	<b>BASELINE</b> → <b>RE-SURVEY</b>	<b>%</b>
<b>STATE</b> sch students	<b>16/119</b> → <b>1/66</b>	<b>13% → 1.5%</b>
<b>INDEPEND</b> sch students	<b>118/209</b> → <b>43/109</b>	<b>56% → 39%</b>

**Table 1: A comparison of the number of state and independent school students intending to make applications to Russell Group universities, at baseline and in the re-survey one year later**

As highlighted by UCL IOE (external evaluation team), in the baseline survey the state school students indicated plans to apply to a broad range of universities: some of which were Russell Group institutions and some which were not. The independent school students were predominantly only considering making applications to Russell Group universities including Oxford and Cambridge. Some independent school students were also planning to apply to US universities such as Yale or Princeton. In the re-survey, the majority of independent school students had made actual applications to Russell Group universities with just a small number of exceptions for students wishing to pursue niche courses such as Sports Science or Drama. Most of the state school students mentioned having applied to one or more Russell Group universities although some had also applied to non-Russell Group institutions for traditional courses such as the sciences. One student mentioned having applied to a European university to study medicine.

Given the students very similar (mean) levels of confidence in their own academic ability (see narrative for PO1 above), therefore it was somewhat surprising to see that so few state school students had actually made applications to Oxford or Cambridge University

Both groups of students were largely basing their choices on the following factors:

<b>Independent students</b>	<b>State students</b>
Tutorial/supervision system (Oxbridge)	References to the course
Reputation of university	Environment/campus
Extracurricular activities available	Reputation of university
The course/city/environment	Near home
Family ties	Family/friend recommendations
Breadth of courses (Oxbridge & US universities)	Grades to get in
Positive visits to preferred university	Staying in London to save on living & transport costs
	Positive visits to preferred university

**Table 2: Baseline survey responses for reasons given by state and independent students for their preferred university choices (n=328)**

If we consider the reasons given by the two sets of students at the time of the first survey, it is clear that there are some rather different influences affecting their thinking. The independent students seem to predominantly be basing their choices on their expectations and requirements for what their preferred institution should offer such as academic prestige, academic rigour of courses, strong provision for the broader development of learners and city-based locations. Interestingly, several of these key requirements seem to mirror the types of provision and support that has been available to them during their independent school education, and which they likely have become accustomed to, and thus perhaps it is unsurprising to see these remaining important to them and playing such a strong factor in their decision-making process going forwards. While the state school students were also taking academic prestige into consideration, on the whole their choices were really dependent upon expectations and requirements more related to their own personal or academic needs, e.g. the students were heavily accounting for location and felt strongly about the university being close to home – for some this was due to accommodation and transport cost issues; their choices were also strongly guided by their perceptions of their own academic ability – could they achieve the grades required for particular institutions? This last factor is especially interesting in that this did not arise at all as a consideration for the independent students. This perhaps suggests that, compared to the state students, they have a higher level of confidence in their academic abilities and it is simply a given that they will achieve the necessary grades for the generally highly prestigious universities they had in mind.

Approximately one year later, the re-surveyed students were asked the same questions: whether they were considering going to university and what were the reasons for their preferred choices. The table below summarises the main reasons they gave:

<b>Independent students</b>	<b>State students</b>
Specifics of the course	Reputation of university
Reputation of university	Russell Group institution
Collegiate system/ tutorial system	Good teaching
Future career prospects	Ability to 'reach their potential'
Being surrounded by like-minded peers	The course
Being intellectually stimulated	Career pathways/ graduate support
Location of university	Atmosphere/ environment
Nice campus	Visits to universities
Extra-curricular opportunities	Location/ nice campus
Atmosphere of university/ university facilities	Being in London/ near home

**Table 3: Re-survey responses for reasons given by state and independent students for their preferred university choices (n=175)**

Compared to the baseline survey, the reasons cited by the independent students seem to have changed very little. Their decision-making continues to be strongly determined according to high expectations and requirements from the chosen institutions with regards what it can offer them academically as well as professionally. They are concerned to be supported well with their studies and to be in an academically-enriching environment through its broader learning and development opportunities and by studying alongside fellow-minded students (presumably who share similar levels of academic and personal ambition). Interestingly however, there seemed to have been some shifts in thinking for the state school students. Remaining 'local' was still an important factor, but they were now also feeling more concerned about attending an institution that offered 'good teaching', which was academically prestigious and which would support them well with their studies and for progressing into their future careers. This shift in mindset is noticeable as these were certainly not factors spoken about by this group of students at the time of the baseline survey. Although their change in thinking and more academically-focused approach to decision-making may simply be due to their growing maturity as learners and so may have happened anyway over the course of time, it might also be interpreted as a change and increase in their aspirations and confidence to achieve highly now and in the future.

#### **PO4. Will have access to a range of activities that enhance their learning in English, Maths and Science**

**KS4:** This outcome has been achieved through the trialling of three KS4 interventions, all aimed at improving the students' achievement in English, Maths and Science and which intended to raise their aspirations for applying to highly prestigious universities. The relative success of these interventions is discussed below.

**KS5:** This outcome has been achieved through the trialling of a new academic programme of activities (the 'Scholarship Graduate Programme') for highly able KS5 state students. The programme aimed to extend students' learning and experiences beyond the classroom in efforts to provide high level stretch and challenge and in order to raise their abilities and aspirations for applying to highly prestigious universities. The relative success of these interventions is discussed below.

#### **A closer look at the data:**

##### **KS4 Interventions: Tutoring; Saturday masterclasses; a university residential experience**

One of our project partners held responsibility for the research design relating to three KS4 interventions aimed at 50 highly able Year 10 state school students (all had achieved Level 5 in English and Maths at KS2 and were predicted A/A\* in both subjects at GCSE) from three different schools. These interventions involved maths tutoring, a series of Saturday masterclasses and a one week university residential at a prestigious Russell Group institution.

As baseline measures, a group of **50** 'research group' (RG) students (35 boys; 15 girls) were asked to complete the following:

- subject assessment tests in English, Maths, Biology, Chemistry and Physics
  - questions became progressively more difficult and ranged in difficulty from KS3 Level 3 through to Level 8
  - most questions were pitched at Levels 5-7
- a student survey
  - used to explore their levels of academic confidence, their attitudes towards learning and gauge their future plans and any aspirations they may have to pursue further and higher education study.

The 50 RG students were selected from three different schools and the intention was for every student to experience all three interventions. A matched group of **33** students (25 boys; 8 girls; matched for ability as well as ethnicity and socio-economic background so that the profile of these students was broadly representative of those in the research group) from two of these schools was also identified to act as a 'control group' (CG); these students would not be involved in any of the interventions. They were asked to complete the same subject assessment tests and student survey as completed by the RG students. This baseline data was gathered in October/November 2014. The same assessments and survey were conducted again in June-July 2015 in the post-intervention period. The RG and CG students' results were then compared to try to discern the value-added from these interventions.

Of the original 50 RG students, 22 experienced all three interventions and an additional 2 experienced two of three (the maths tutoring and the Saturday masterclasses). Others in the group were involved in one or more of the interventions but could not be included in the final RG group (the dataset used for analysis) because it was not possible to collect post-intervention subject assessment data from them, which would be needed for comparison. The difficulties in data gathering were due to a range of reasons including timing difficulties, student absences and timetable conflicts. As a result of the reduced dataset size, it was felt necessary to reconsider the composition of the research group so that any student who had experienced *at least one of the three interventions* could be included. Where post-intervention data could not be gathered for any original control group student, they were subsequently removed from the final CG group. Thus, the original cohort of 83 students (**50 RG, 33 CG**) changed to a final cohort of **32** students (**23 RG** - 19 boys; 4 girls, **9 CG** - 7 boys; 2 girls). As a result of the changed definition of the final 'research group', therefore the sample size for each dataset (subject assessment tests; student surveys; feedback on each of the interventions) varies; this is made clear when the findings for each dataset are discussed below.

The three different interventions and the rationale behind each are briefly outlined below:

### **Maths tutoring**

*Rationale:* Research by the Russell Group (2009) and the Sutton Trust (2010) shows that the biggest factor determining the numbers of non-privileged pupils at university is their school attainment scores. It was deemed unfeasible to provide tuition for the science subjects and for English, and because underperformance in GCSE Maths by highly able students in non-selective state schools was one of the motivating factors for this project, therefore this was the subject chosen for the tutoring intervention.

These tuition sessions ran after school for 8 weeks, from November 2014 to January 2015 (term time only). Sessions were an hour long and conducted at the three KS4 state 11-16 secondary schools attended by the **24 RG students**. The tutoring was provided by 4 maths tutors recruited from online tutor agencies; each was interviewed, vetted and briefed about the project and their role within it. The project partner designed the format of the tutoring sessions, which involved half of the session involving a teacher-led exercise and/or discussion, supplemented by a supporting activity such as a problem sheet, practice exam question or other appropriate resource for the students to work on independently. The topics covered in these sessions were those that the baseline maths assessment had revealed as being areas of weakness for the students generally. The remainder of the session was used for 'troubleshooting': to provide support for specific problems identified by the students. Typically, 3 tutors facilitated each session, with students being put into groups of 5 and a tutor working with one group.

At the conclusion of the programme, students were asked to reflect on their experience and respond to 7 statements in an evaluation questionnaire: 1. *The objectives of the tuition were clearly defined.* 2.

*Participation and interaction were encouraged. 3. The topics covered were relevant to me. 4. The content was organized and easy to follow. 5. The materials distributed were helpful. 6. This tuition experience will be useful for my exams. 7. The tutors were knowledgeable about the topics covered.*

### **Chemistry masterclasses**

*Rationale:* Educational enrichment opportunities that stretch and challenge students beyond their school curriculum have been shown to positively impact on GCSE performance, particularly in the case of disadvantaged young people (Sutton Trust, 2015).

Two series of Saturday morning masterclasses were hosted at two of the independent schools involved in this project. With one exception for each programme, every session was run by teachers from those schools. The programmes were designed as opportunities for students to get ‘hands-on’ with sophisticated scientific techniques and equipment, and intended to offer them insights into undergraduate-level science. One programme ran for 5 weeks, the other for 6 weeks; both predominantly covered Chemistry. For both programmes, individual sessions lasted an average of 3 hours. Both programmes included input from two Russell Group universities, with sessions hosted by Imperial College and King’s College London. Of the **24 RG students** attending, approximately half of were placed on each programme; where possible and practical, students’ preferences were accommodated.

After the masterclass series had ended, a representative from the project partner’s organisation conducted phone interviews with students to gather their reflections on these experiences.

### **A residential experience at Cambridge University**

*Rationale:* There is evidence to show that residential experiences for young people can have profound, positive effects on students in terms of their personal development (increased self-confidence and independence), their team-building and leadership skills, levels of resilience, motivations and attitudes to learning as well as many other positive effects (e.g. see IOE, 2009; BG Group & NFER, 2014; Sutton Trust, 2011). The Sutton Trust summer schools are an excellent example of how academically-oriented, university-based residential programmes can engender positive outcomes for students.

During Easter 2015, **22 RG students** attended a 5-day 4-night residential to Jesus College, Cambridge University. The visit included a combination of challenging academic activities, which were designed to contextualise and extend the students’ in-school learning, as well as university-led experiences aimed at increasing students’ knowledge of important matters relating to higher education study generally, e.g. student finance, student life, the academic experience etc. In addition, the residential aimed to challenge some of the assumptions commonly associated with access to Oxbridge for young people from non-traditional backgrounds.

The key findings from each dataset and what this tells us are discussed below. Please note that these findings are derived from analysis conducted by the project partner and have been validated by our team of external evaluators. In places, the evaluators performed additional quantitative analysis, where they felt appropriate, and where this is the case it has been indicated.

### **Summary of findings from the pre- and post-intervention subject assessment tests (English, Maths, Biology, Chemistry, Physics)**

Overall, when comparing the mean scores for the pre- and post-intervention subject assessment tests for the research group and the control group the analysis showed that the RG students made greater gains than the CG students.

**But**, the external evaluators add some precautionary notes to this:

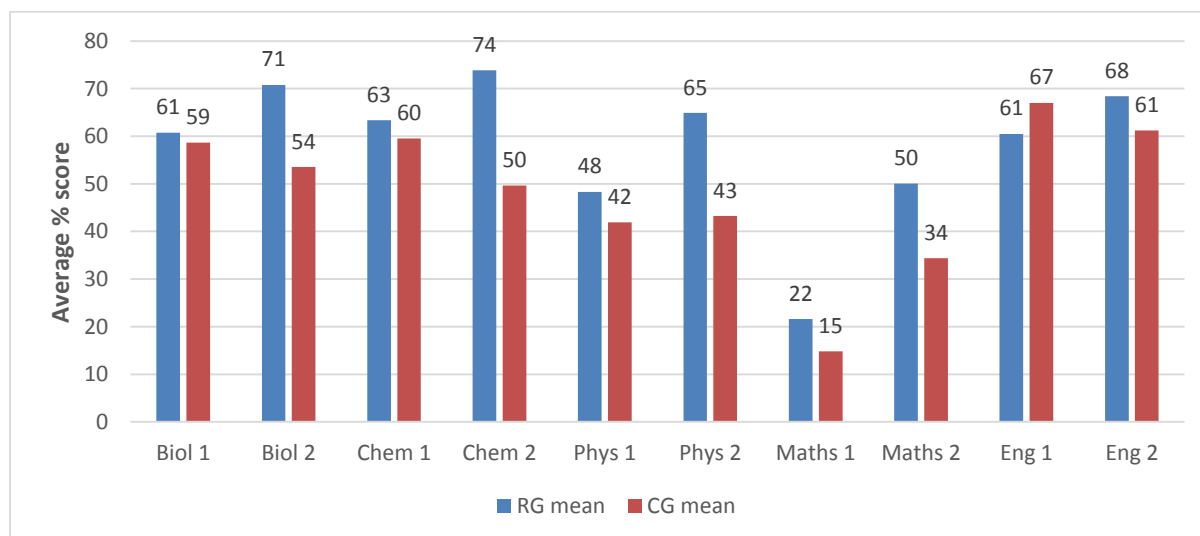
- the range of pre-intervention scores was high and this indicates high variability
- the research group was also larger than the control group and because the control group was particularly small this means that the impact of individual scores on the mean was high, e.g. from pre- to post-test, one CG student’s scores dropped by 19 marks in Biology, 26 marks in Chemistry, 15 marks in Physics and 20 marks in English. As such, there are limitations on the validity of the result
- the validity of the mean as an overall measure of the group is therefore limited when considering overall comparative test scores

- analysis found that the range of change in scores, pre- to post-intervention, was high, with some students improving a great deal more than others as well as some students' scores decreasing; this suggests that individual student factors may have had an impact and any findings should be considered with this in mind
- however, their detailed analysis also explored individual students' scores and this found that a higher proportion of RG students improved their scores compared to the CG students and this was true for all five subjects. Scores also fell from the pre- to the post-test, which was more often the case for CG students and this was true for all five subjects

When the external evaluators conducted a significance test on the mean change in score between the pre- and post-intervention tests for each group (RG and CG), this showed:

- with the exception of Maths, the change in mean scores was significantly higher in the research group than in the control group
- in both groups, exponential gains were made in Maths and Physics with the average mean scores having more than doubled – however, these gains were variable within the RG group including some students scoring lower or making no improvement in the post-intervention tests
- for the CG, their average mean scores were lower in the post-intervention tests for Biology, Chemistry and English
- for the CG, there was a very small improvement for Physics; as noted, the biggest increase was for Maths – however, given the small size of the control group, it should be noted that the dramatic change in scores from pre- to post-intervention seen for one individual in four subjects (Biology: dropped 19 marks; Chemistry: dropped 26 marks; Physics: dropped 15 marks; English: dropped 20 marks) will have had a large impact on the mean results for the whole group

The pre- and post-intervention subject assessment average mean test scores are collated in **Graph 4** below:



**Graph 4: Mean scores for pre- AND post-intervention subject assessment tests completed by research group (RG) and control group (CG)**

**A more detailed look at the data:**

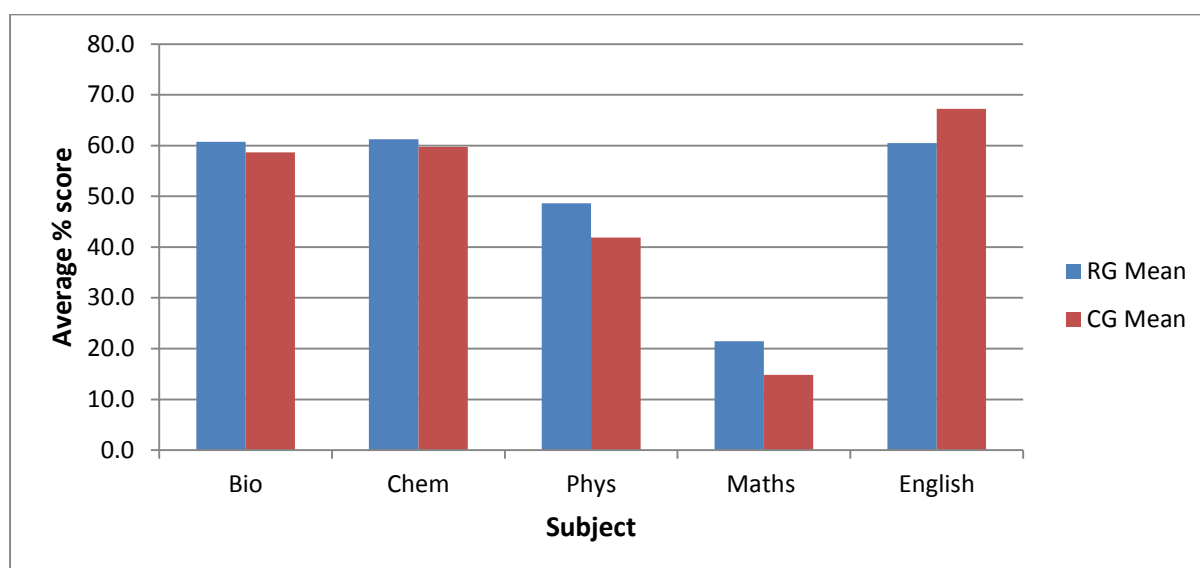
In case it is useful, the separate analyses of the pre- and post-intervention subject assessment data is presented below:

The project partner's quantitative analysis of the pre- intervention subject assessment data for the research group (RG) and control group (CG) students found the following:

- the mean scores for maths, for both the RG and the CG, were lower than for all other subjects
- on average, the biggest difference in mean scores between the RG and CG was for Maths; the smallest difference was for Biology, closely followed by Chemistry
- for all subjects except English, the mean scores for the RG were higher than for the CG
- in English, the mean score for the CG was higher than for the RG

*Note: these findings were all validated by our external evaluation team.*

These results are illustrated in **Graph 5** below:



**Graph 5: Mean scores for pre-intervention subject assessment tests completed by research group (RG) and control group (CG)**

Additional analysis by the external evaluators explored whether there was any initial difference between the RG and CG groups' scores overall. Mean scores for each group were calculated and a significance test was used to determine if there was any difference between the means of the two groups at the pre-intervention stage. The results found:

- the mean score for the RG was higher than the mean score for the CG – for Biology, Chemistry, Physics and Maths – but, the difference in each case was **not statistically significant**
- for English, the mean score was lower for the RG than for the CG – this too was **not statistically significant**

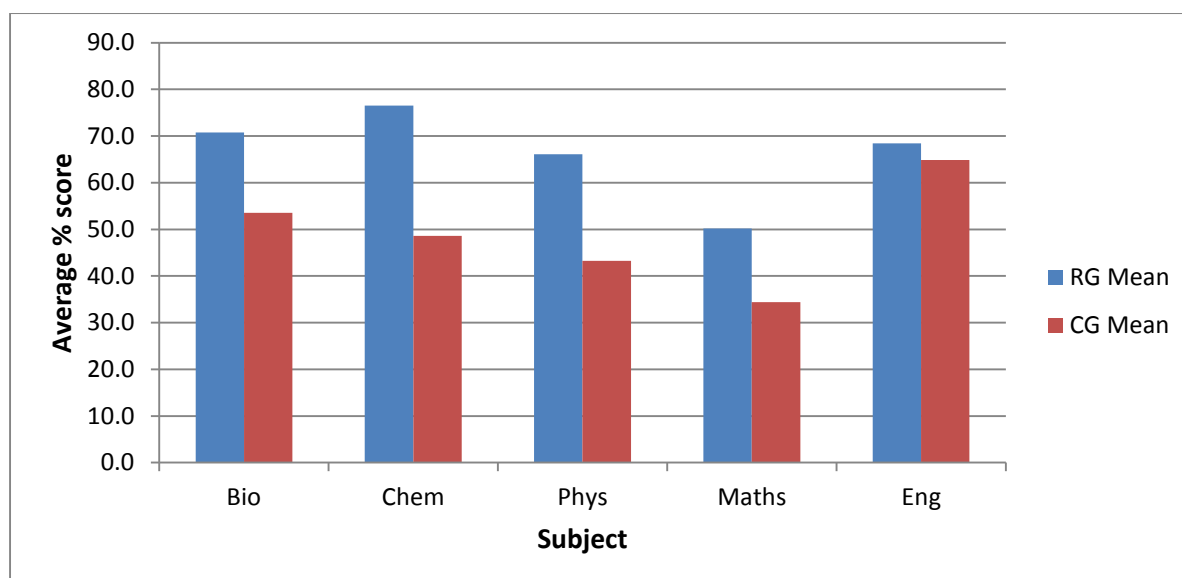
In addition, we have been advised that due to the large variability in the test scores and also the small sample size (especially for the CG: 8 students completed the tests for Biology, Maths and Physics; 7 completed tests for Chemistry and English) the validity of the mean as a representative measure is limited.

An analysis of the RG and CG students' post-intervention subject assessment test scores from June/July 2015 found the following:

- for all subjects the RG's mean score was higher than the mean score for the CG
- students in both groups continued to find the Maths assessment the most difficult of all five subject assessment tests – as confirmed by their mean scores being lowest for this subject
- the RG's highest mean score was for Chemistry
- the CG's highest mean score continued to be for English

These results are illustrated in **Graph 6** below:





Graph 6: Mean scores for **post-intervention** subject assessment tests completed by research group (RG) and control group (CG)

### **Summary of findings from the pre- and post-intervention student surveys**

It is relevant to refer back to the discussion already presented about the KS4 students' (RG and CG) levels of academic confidence pre- and post-intervention (see **PO1**) when considering the relative impact of these KS4 interventions. In addition, qualitative analysis was conducted on the students' qualitative responses to some of the open-ended questions to explore what else this might tell us about any changes in the RG students' outlook on their approaches to their studies, future achievement and aspirations.

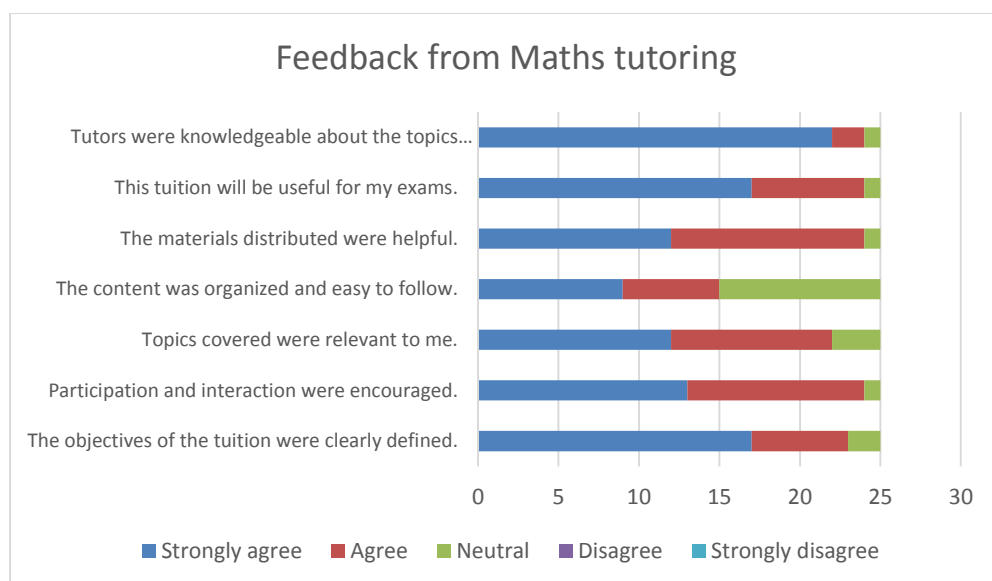
Analysis found that there was actually no distinction between the responses of these two groups to those questions and also there was little change from pre- to post-intervention completion (except that both groups offered more specific responses to some questions at the post-intervention stage). However, it is worth noting that at the time of the pre-intervention survey (i.e. near to the beginning of Year 10), students were already committed to further study after Year 11 and many also intended to continue on to higher education. At the end of Year 10, those students who had previously felt unsure about their future plans now possessed clear intentions to pursue professional or university training; the one exception was a RG student who planned to seek immediate employment. In addition, the increased popularity of Cambridge (9 of 14 students = 56%; 2 CG students and 7 RG students) as the most preferred higher education destination in the post-intervention surveys should be mentioned. This perhaps suggests that the residential activity was successful although it is also possible this was due to students' heightened awareness from their recent experience rather than increased aspirations (6 of 14 students (43%) noted a preference for Oxford University in the pre-intervention survey).

Thus, as stated, overall, what is able to be learnt from the student surveys in relation to the impact of the three interventions is limited and inconclusive.

### **Summary of the feedback received on the interventions**

#### **Maths tutoring**

49 of the original 50 RG students attended the Maths tutoring sessions; 25 feedback sheets were available for analysis. However, due to anonymity processes, it was not possible to identify how many of these sheets had been filled out by students in the final RG group. Nonetheless, the analysis by the project partner and the external evaluator proceeded by trying to gain a broad sense of how these sessions were received. The questionnaires presented 7 statements and students were asked to tick one of five options to indicate their response; the options were: 'strongly agree', 'agree', 'neutral', 'disagree' and 'strongly disagree'. Their responses are illustrated in **Graph 7** below:



Graph 7: Students' feedback on Maths tuition sessions (n=25)

As can be seen, of the 25 students who responded, their feedback was predominantly positive. If we aggregate the responses for 'strongly agree' and 'agree' for each statement, this shows an average of 89% chose these responses. Moreover, no-one indicated that they 'disagreed' or 'strongly disagreed' with any statement. However, despite large agreement that they had been taught by knowledgeable tutors, there seemed to be somewhat less firm agreement about the organisation of the content and how easy it was to follow.

### Chemistry masterclasses

36 of the original 50 RG students attended a Saturday masterclass series focused on Chemistry. Telephone feedback from 5 students was available for analysis. Again, it is unknown how many of these students were in the final RG group. In the main, the feedback received was positive and the students reported having enjoyed "lots of opportunities to do practicals"; they also liked the group work and the interactive nature of the sessions. They enjoyed learning about topics that have not been covered at school and spoke of different positive benefits for their grasp of chemistry, e.g.

- "my understanding of concepts in chemistry has improved"
- "I feel more confident in chemistry because of the opportunity to do experiments"
- "I have a better understanding of how the chemistry we do at school can be applied at a higher level"

Any negative feedback tended to relate to the distance students had to travel for these sessions and that practicals did not last long enough or there were too few of them!

### A residential experience at Cambridge University

40 of the original 50 RG students attended the university residential experience, held at Jesus College, Cambridge University. 29 feedback sheets were available for analysis. Students fed back on the different activities they had been involved in and were asked to comment on what they felt they had learnt. The main activities reported on included a talk about going to university, a lecture on epidemics and evolution and an English poetry session followed by a session on sentence structure.

The general feedback received is presented below:

#### Talk about going to university

- the talk was interesting and informative
- students learnt about university life including insights into college life
- advice was given regarding the need to choose A levels carefully and they were made aware of the variety of course options

- it was useful to receive information on finance, loans and bursaries which could enable/support students to attend university; e.g. *“I learned university isn’t just about debt”*; *“learnt how you can have bursaries and you don’t need to be rich to go to university”*

#### *Lecture on epidemics and evolution*

- students mentioned many learning points from this session and felt they had gained a lot of new knowledge, e.g. *“I learned a lot about bacteria and viruses that I did not know”*; *“I enjoyed learning about gene sequencing and the practical activity”*; *“expanding our knowledge of epidemics, viruses and bacteria and seeing what biologists do”*
- the practical activity was enjoyed and useful
- a very small number of students reported not enjoying the lecture format

#### *English poetry session followed by a session on sentence structure*

- as reported in the feedback for the lecture on epidemics, a very small number of students reported not enjoying the lecture format for the poetry session
- however, the majority felt they had benefitted from both English sessions, e.g. *“I got to analyse and look at poetry and language in different ways”*; *“I learnt how to interpret poetic language...how to analyse poetry...how to analyse individual words in a line (poetry session)”*; *“I learnt to complete a good paragraph...A mixture of complex, simple, compound, minor and rhetorical questions...”*; *“helped us to use different sentence structures for effect”*.

### **In summary and conclusion**

The analysis from the pre- and post-intervention tests show that the RG students improved their scores between tests for most subjects by significantly more than the CG students. But, the extent to which this finding can be attributed to the interventions is uncertain as the impact of intervening variables related to school and individual factors cannot be determined. As already stated, overall, what was able to be learnt from the student surveys was limited and inconclusive. In part, this was due to some of the methodological limitations relating to this work, e.g. the small overall sample size and the particularly small size of the control group limits the validity of findings from any comparisons of the RG and CG. The feedback from the three interventions was largely positive and these seemed to have been well-received and beneficial for learning. However, the sample size for feedback on the Chemistry masterclasses was small and therefore it is not possible to say how representative this was of the wider group who attended these sessions. The short timescale of this work also limits how much can be learnt; if students could be tracked for a longer period it may be possible to see whether any of the observed differences are sustained.

### **Key Stage 5 State School ‘Scholarship Graduate Programme’ Intervention**

In order to test some of the emerging findings from the Phase 1 data (teacher-researchers’ lesson observation sessions; staff and student surveys; wider school research visits), a new academic programme was devised and introduced in September 2014 in the three KS5 sixth form colleges. Indications from the data gathered from the independent schools suggested that, in addition to the teaching and learning experience, there are a number of factors that play an important part and make a significant difference in terms of students’ high aspirations and strong academic achievement such as *peer group identity* and *expectations*. The state school intervention programme was designed to replicate some of these conditions in order to test whether some of the features recognised in the independent sector could be successfully implemented in a state school setting with the most academically-able. And, if they could, would they have a positive impact on motivation, commitment, outcomes and student aspiration?

The programme was aimed at new AS students with a GCSE score of 7.0 and above and who had achieved A\* and A at GCSE. Potential students and their parents were invited to a special admissions morning where the academic aims of the programme were set out and expectations were made clear with regard to their commitment to the full programme. Students were required to sit a written examination and at the end of the morning they and their parents were asked to reflect on the implications of becoming part of the programme. Those who wished to be considered were then required to make a separate application. The programme would require students to:

❖ take at least two facilitating subjects	❖ apply for a prestigious university summer school
❖ attend an admissions morning	❖ engage in a super-curriculum programme in at least two subjects in the spring and autumn terms
❖ participate in 4.5 hours of A Level study and 1 hour taught seminar for each facilitating subject	❖ work with an academic mentor
❖ achieve a minimum target grade of A*, A or B	❖ become part of a discrete group with a dedicated study room
❖ study for the Cambridge Pre-U Global Perspectives course as an additional A Level	❖ contribute to, and take part in, a weekly working lunch
❖ follow a bespoke academic progression and careers programme	❖ apply for a prestigious university summer school

Table 4: Table showing key requirements of the KS5 Scholarship Graduate Programme, trialled as an intervention in the state Sixth Form colleges in academic year 2014-15

Although based in different geographical locations, the three KS5 state sixth form colleges are linked in that they are all part of one institution. However, students attend only the site where they are enrolled – the only exception to this is for intercollegiate sporting events. At the beginning of the 2014/15 academic year, 22 students began on the Scholarship Graduate programme: this comprised 14 students at KS5-ST-4, 6 students at KS5-ST-5 and 2 students at KS5-ST-6. In order to consider the impact and effectiveness of this intervention and the reasons why, an independent evaluator gathered data throughout. A key objective was to examine the extent to which the programme was impacting on raising student ambitions at Key Stage 5, raising their aspirations for applying to competitive higher education institutions and how far it was extending the student experience and their knowledge beyond the classroom. The evaluation focussed on student and staff perspectives (through group and one-to-one discussions, and sometimes through anecdotal feedback) and was conducted across three phases over the school year: at the start of the programme, mid-way through and at the end of the year. In addition, student progress was tracked and their university choices were monitored.

#### Findings from initial phase evaluation:

During the first term, the independent evaluator spoke with groups of students and the teachers involved at each of the colleges to gather some data on their early experiences and feelings around the new academic programme. These are discussed in turn below:

<b>STUDENTS</b>
<b>POSITIVE IMPACT:</b>
<ul style="list-style-type: none"> <li>▪ <b>Increased academic challenge</b> – through subject knowledge being explored in more depth</li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Stronger rapport with teachers</b> – due to additional teaching and contact time</li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Increased confidence and development of oral skills</b> – beneficial in the longer-term</li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Academic encouragement</b> provided from peer group support and friendly academic rivalry – the positive impact of being with like-minded peers</li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Positive impact on academic studies</b> – generally, felt to be the case - although there was no formal assessment data to assess this at the time</li> </ul>
<b>CHALLENGES:</b>
<ul style="list-style-type: none"> <li>▪ <b>Personal time management</b> – in terms of coping with increased workload and meeting short deadlines</li> </ul>
<ul style="list-style-type: none"> <li>▪ A small number of students remarked on the <b>extra time commitment</b> needed for the programme although, on the whole, students felt positive about this and were taking a longer term view of the benefits this would bring</li> </ul>

<ul style="list-style-type: none"> <li>▪ <i>Comment: It is possible that both of the points above are, in part, transition issues – with the students moving from KS4 to KS5, they were needing to adapt to a school and environment, new teachers and also to a different, higher level of academic study</i></li> </ul>
<b>GOING FORWARDS:</b>
<ul style="list-style-type: none"> <li>▪ <b>More specialist support and guidance</b> around higher education courses and future career paths</li> </ul>
<ul style="list-style-type: none"> <li>▪ Professionals speaking to give <b>insights into different careers</b>, e.g. a day-in-the-life of different types of practitioners</li> </ul>

<b>TEACHERS</b>
<b>POSITIVE IMPACT:</b>
<ul style="list-style-type: none"> <li>▪ <b>Stronger rapport with students</b> – teachers felt they were getting to know their students better and much quicker as a result of their additional teaching and contact time</li> <li>▪ <i>Comment: In the independent schools, teachers seem more able to focus on the academic needs of their students due to knowing them better</i></li> </ul>
<ul style="list-style-type: none"> <li>▪ Development of co-teacher/leadership skills, e.g. taking the lead, class organisation</li> </ul>
<ul style="list-style-type: none"> <li>▪ High levels of engagement, e.g. students volunteering ideas, asking questions, a keenness to contribute and be involved – teacher questions seldom met with silence as students are eager to engage (felt to be largely due to the presence of a group of SR students rather than just one)</li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>SR students</b> inadvertently acting as <b>positive academic role models</b> to students in mainstream classes, who are benefitting from seeing their peers' high level work and their engagement and commitment to their studies</li> </ul>
<b>CHALLENGES:</b>
<ul style="list-style-type: none"> <li>▪ <b>Greater consideration needed for pitching realistic expectations</b> <i>Comments:</i></li> <li>▪ <i>Although these are academically-able students, they have only just transitioned into A level study from GCSE and so, while it is reasonable to have high expectations of them, perhaps additional guidance is required in order to set these at an appropriate level.</i></li> <li>▪ <i>The direct teaching exchanges where state school teachers had the opportunity to teach large cohorts of highly able students in independent schools might assist teachers with this, going forwards.</i></li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Period of re-consideration and adjustment</b> after initial few weeks, leading to much clearer plans for Term 2 <i>Comments:</i></li> <li>▪ <i>This was perhaps to be expected given that this programme was being trialled for the first time.</i></li> <li>▪ <i>As with all new initiatives, such flexibility to adapt is essential.</i></li> </ul>
<ul style="list-style-type: none"> <li>▪ Deeper exploration of subject knowledge risks <b>prematurely encroaching on the A2 syllabus</b> <i>Comments:</i></li> <li>▪ <i>This may become a non-issue with the move to linear A levels</i></li> <li>▪ <i>Do independent schools not face this same concern as a result of viewing and approaching learning as a 'continuous arc'?</i></li> </ul>
<ul style="list-style-type: none"> <li>▪ The additional 1 hour taught seminar seems to be creating <b>extra homework for teachers but not so for students</b></li> </ul>

<ul style="list-style-type: none"> <li>▪ <i>Comment: Phase 1 qualitative data suggests that state school teachers should be demanding more from their highly able students, and this is perhaps a matter for further consideration</i></li> </ul>
<p><b>GOING FORWARDS:</b></p>
<ul style="list-style-type: none"> <li>▪ The additional <b>1 hour taught seminar seems to be used for varying purposes</b>, e.g. for extension work and exploring beyond the syllabus, to recap on lesson content, to respond to student queries</li> <li>▪ <i>Comment: Should there be an agreed, consistent use of this additional teaching time in order to try and best capitalise on the extra time investment?</i></li> </ul>

**Findings from mid-phase evaluation:**

The independent evaluator met again with students and staff during the second term to continue discussions about their experiences of the Scholarship Graduate programme. The key findings are discussed in turn below:

<p><b>STUDENTS</b></p>
<p><b>POSITIVE IMPACT:</b></p>
<ul style="list-style-type: none"> <li>▪ The additional 1 hour taught seminar has → <b>improved understanding</b> of subjects → <b>increased engagement</b> with subjects</li> </ul>
<ul style="list-style-type: none"> <li>▪ Perceived <b>positive impact on grades</b></li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Strong teacher-student rapport</b>, which has led to <b>increased confidence</b> to contribute in lessons and <b>more resilient and risk-taking behaviour</b>, e.g. having a go without being overly concerned that they could be wrong <i>Comment: These types of behaviours were commonly seen in the independent schools and appeared to have positive academic gains for students' learning</i></li> </ul>
<ul style="list-style-type: none"> <li>▪ <i>(for some, but not all, students)</i> <b>Continuation of collegial support and academic encouragement</b> from other SR peers, e.g. providing academic challenge, study support and friendship; all of this also extending into their mainstream lessons as well as outside of the classroom</li> </ul>
<p><b>CONCERNS:</b></p>
<ul style="list-style-type: none"> <li>▪ Benefits of improved understanding and increased engagement are confined <b>only</b> to those subjects for which they have the additional 1 hour taught seminar; a desire for this to be extended to include the other subjects they were studying</li> </ul>
<ul style="list-style-type: none"> <li>▪ Discomfort with teachers' and peers' expectations of them</li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Pre-requisite Cambridge Pre-U Global Perspectives course</b> felt to be onerously time-consuming with negative impact on other subjects being studied</li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Working lunches</b> – attendance and commitment to these was variable compared to Term 1; some concerns that attendance was preventing them from accessing additional academic support for their other subjects (for these, there is no additional 1 hour seminar time)</li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Workload and time management</b> – this remained a challenge for some students although motivation was still high and they were continuing to persevere. Some however, had started to struggle with the difficult balance between long-term gains and the short term additional commitment expected of them; in a small number of cases, individuals had become rather disillusioned</li> </ul>

**ADDITIONAL COMMENTS:**

- *At the mid-year stage, internal assessments conducted by the state colleges found that approximately a third of the students were on track and just over half of the subject review grades were in line with expectations.*
- *At the mid-way point, it was too early to determine with any certainty how much, if at all, the programme was impacting on raising students' levels of achievement and aspirations. However, these students' AS grades were compared with historical data on the performance of matched groups of students who entered these colleges with similar average GCSE scores (see below).*

**Findings from end-of-year evaluation:**

Compared to the other two terms, in the summer (final) term it was only possible to meet with a smaller group of students and staff due to other events taking place, e.g. university open days etc. These discussions centred around an end-of-year review of the Scholarship Graduate programme and so asked participants to reflect on the year as a whole. The key findings presented below reflect on the apparent impact of the programme and considers what has been learnt and how this may be taken forwards:

**WHAT HAS BEEN LEARNT:**

**Additional 1 hour taught seminars**

- Consistently, the students have spoken positively about these extra sessions
- However, some additional observations over the course of the year offer some issues for further consideration as the programme develops in the future (discussed below)

**Working lunches**

- In the mid-year review, some students were feeling a little frustrated that they could not attend subject workshops for their other subjects due to these working lunches
- At the end of the year, students, at one of the colleges in particular, spoke really positively about some great discussions and speakers at these sessions

**Cambridge Pre-U Global Perspectives course**

- Positive feedback was relayed in terms of the skills developed and knowledge gained from this course
- Despite previous concerns about its usefulness and relevance for other subjects being studied, the students were now feeling quite appreciative of the benefits gained

**The 'group effect'/ a critical mass of like-minded, similarly capable students**

- Students have valued being part of a group of like-minded peers, who share similar levels of academic ability and high motivation
- The allocated study room has been hugely beneficial, giving students a quiet place to study
- In the main, the strong group dynamic has provided students with a continued source of support, academic competitiveness and friendship. Indeed, the group have bonded so well that they feel reluctant to share the space with new Scholarship Graduate programme students joining the programme in 2015-16.

**ISSUES FOR FURTHER CONSIDERATION:**

**Additional 1 hour taught seminars**

- Sessions tend to offer greatest gain when run with groups as opposed to 1-on-1

<ul style="list-style-type: none"> <li>Retention can become a possible issue and thought should be given to the potential impact on the 'group effect'</li> </ul>
<ul style="list-style-type: none"> <li>Sharing an overview of the purpose at the outset is important</li> </ul>
<ul style="list-style-type: none"> <li>Teachers should be clear with students about their expectations – to assist them with their planning and time/workload management</li> </ul>
<ul style="list-style-type: none"> <li>The extra work expected from these sessions varies from teacher to teacher – further thought might be given to this and to whether more needs to be expected from students</li> </ul>
<ul style="list-style-type: none"> <li>Where material taught in these sessions is later covered in those students' mainstream lessons, possible issues of disengagement may arise and this therefore should be considered and pre-empted</li> </ul>

**In summary and conclusion:**

The Scholarship Graduate programme was designed to provide additional stretch and challenge to academically-able students' learning with the aims of impacting positively on their levels of **motivation, commitment, outcomes and aspirations**. These will now be reviewed and discussed in turn:

***Motivation & engagement***

Perhaps unsurprisingly, motivation levels did vary across the cohort across the academic year. On the whole however, students seemed to be taking a longer-term view of the programme and this appeared to help them balance out the challenges of increased workload and time commitments. Throughout the year, the students spoke positively about the additional 1 hour taught seminars. In addition to furthering their learning, these sessions had enabled them to quickly develop a strong rapport with their teachers (this would seem particularly important given that they had entered a new place of study and had no familiarity with any of their teachers). In turn, this helped to increase their self-confidence and willingness to contribute and take risks in their learning – all of which had been witnessed frequently in independent school lessons, to the clear benefit of students. Teachers too reported that these sessions had allowed them to know their students better and much quicker than usual and all of this again fed back to the advantage of those students in terms of being able to more readily identify and address their needs, approachability, support etc.

***Commitment & retention***

Across the three colleges, a total of 22 students made successful applications for the Scholarship Graduate programme in academic year 2014-15. 20 students remained with the programme for the year's duration, which equates to a 'completion rate' of 91%.

Over the course of the year, the students' attendance and completion of different programme components varied. Some elements were mandatory such as taking the Cambridge Pre-U Global Perspectives course as an additional A level. However, although others had been stated as expectations and requirements of the programme there wasn't actually any mechanism to enforce attendance. For example, attendance at the working lunches varied over the course of the year. However, this is perhaps unsurprising given that through the year some students had spoken about time and workload management concerns and were likely still transitioning from GCSE to A level expectations and study habits. Despite this, the extremely high overall completion rate would suggest that the students had remained invested in the programme for its overall longer-term gains.

***Student aspirations***

Informal feedback from three quarters of the group indicates that almost every student is intending to make a university application to one or more Russell Group universities including Oxford and Cambridge.

***Outcomes***

In terms of outcomes for teachers, not all outcomes were met in this 'trial' year but nonetheless the teachers involved continued to be supportive of the programme and its ethos.



In terms of outcomes for students, these may be measured in qualitative and quantitative terms. The commentary above has reviewed the qualitative impact on students, e.g. increased confidence levels, development of different types of soft skills etc. Here, consideration will be given to whether there seems to have an impact on increased achievement levels for these students. In order to assess this, the AS grades of the Scholarship Graduate programme students, achieved in summer 2015, have been compared with matched groups of students from previous years (matched in terms of similarly high average GCSE scores on entry to these state sixth form colleges). The results are presented in the tables below. Given the small numbers involved, it might be prudent to look upon this data as a broad guide.

At this stage, although a little disappointing, it is not unsurprising that the year-on-year comparison seems to show that the programme has had little impact on students' formal attainment. However, it would perhaps be sensible to keep in mind that this was only the first trial year of the programme and that a longer testing period may be needed before we can more confidently determine whether the elements and factors specifically provided to students in this group can and do actually make a difference in terms of increased achievement to A/A\* level.

2014-2015 AS grades for Scholarship Graduate programme students have been compared with matched groups of students for the previous four years at these colleges:

Table 5: **2014-2015** ACTUAL AS grades for KS5 state school students involved in Scholarship Graduate programme (focus is only on facilitating subjects studied: English, Maths, Biology, Chemistry or Physics)

STUDENT	2014-2015 AS GRADES (for English, Maths, Biology, Chemistry, Physics ONLY)							
	Subject	Grade	Subject	Grade	Subject	Grade	Subject	Grade
1	ENG LIT	B	BIOL	B	CHEM	A		
2	MATHS	D						
3	MATHS	B	BIOL	A	CHEM	A		
4	MATHS	A	F MATHS	B	PHYS	C		
5	ENG LIT	A						
6	ENG LIT	C						
7	MATHS	A	BIOL	A	CHEM	A		
8	MATHS	A	CHEM	A	PHYS	A		
9	CHEM	A	MATHS	B	BIOL	B		
10	MATHS	A	F MATHS	A	CHEM	B	PHYS	C
11	ENG LIT	B	MATHS	B	CHEM	A	PHYS	D
12	MATHS	A	F MATHS	D	PHYS	E		
13	ENG LIT	B	BIOL	C	CHEM	B		
14	MATHS	A	F MATHS	A	PHYS	A		
15	MATHS	C	BIOL	A	ENG LIT	A	CHEM	A
16	MATHS	D	PHYS	U	CHEM	D		
17	BIOL	D	ENG LIT	B				
18	BIOL	D	CHEM	E				
19	Withdr	--	--	--	--	--	--	--
20	Withdr	--	--	--	--	--	--	--
21	MATHS	A	BIOL	A	CHEM	A	PHYS	A
22	ENG LIT	C	BIOL	E	CHEM	E		

Table 6: **2013-2014** ACTUAL AS grades for matched group of high achieving KS5 state school students from two of three KS5 state schools (focus is only on facilitating subjects studied: English, Maths, Biology, Chemistry or Physics)

STUDENT	2013-2014 AS GRADES (for English, Maths, Biology, Chemistry, Physics ONLY)									
	1	F MATHS	B	MATHS	B	BIOL	B			
2	MATHS	B								
3	BIOL	B	CHEM	A	F MATHS	B	MATHS	A	PHYS	C
4	ENG LIT	A								
5	MATHS	C	BIOL	A	CHEM	B				
6	MATHS	D	BIOL	C	CHEM	C				
7	PHYS	B	CHEM	C	MATHS	B				
8	F MATHS	C	MATHS	A	PHYS	B	CHEM	B		
9	MATHS	B	PHYS	D	CHEM	B				
10	BIOL	B	MATHS	B						
11	F MATHS	A	MATHS	A	PHYS	C				
12	BIOL	B	CHEM	B	MATHS	C				
13	BIOL	C	MATHS	C	CHEM	B				
14	ENG LANG	A								
15	ENG LANG & LIT	A								
16	BIOL	B	ENG LIT	A						
17	BIOL	A	CHEM	B	F MATHS	C	MATHS	A		
18	ENG LANG & LIT	A	MATHS	C	BIOL	B				
19										
20										
21	*No data available	--	--	--	--	--	--	--	--	--
22	*No data available	--	--	--	--	--	--	--	--	--

\*No historical data available as this was formerly a different Sixth Form institution.

Table 7: **2012-2013** ACTUAL AS grades for matched group of high achieving KS5 state school students from two of three KS5 state schools (focus is only on facilitating subjects studied: English, Maths, Biology, Chemistry or Physics)

STUDENT	2012-2013 AS GRADES (for English, Maths, Biology, Chemistry, Physics ONLY)									
	1	MATHS	A	PHYS	B	BIOL	B			
2	ENG LANG	B	CHEM	C	BIOL	A				
3	CHEM	A	F MATHS	A	MATHS	A	BIOL		A	
4	MATHS	A	CHEM	D	MATHS	A				
5	ENG LANG	C								
6	ENG LIT	C								
7	MATHS	D								
8	BIOL	A	MATHS	E	CHEM	C				
9	ENG LIT	A	BIOL	B	MATHS	A				
10	CHEM	B	F MATHS	A	MATHS	A	PHYS		A	
11	CHEM	B	MATHS	A	BIOL	A				
12	BIOL	C	CHEM	C						
13	CHEM	A	PHYS	A	MATHS	A	F MATHS		A	
14	PHYS	A	F MATHS	A	MATHS	A				
15	CHEM	B	BIOL	A						
16	ENG LIT	A	F MATHS	A	MATHS	A				
17	MATHS	D								
18	BIOL	E								
19										
20										
21	*No data available	--	--	--	--	--	--	--	--	--
22	*No data available	--	--	--	--	--	--	--	--	--

\*No historical data available as this was formerly a different Sixth Form institution.

Tables 8-16: ACTUAL AS Grades COLLATED for high achieving KS5 state school students studying at least one AS Level in English, Maths, Biology, Chemistry or Physics – 2014-15 Scholarship Graduate programme students compared to previous two academic years

Table 8: AS English Language

ENG LANG	2010-11 /0	2011-12 /0	2012-13 /2	2013-14 /1	2014-15 /0
A	--	--	--	1	--
%A	0%	0%	0%	100%	0%
B	--	--	1	--	--
%B	0%	0%	50%	0%	0%
C	--	--	1	--	--
%C	0%	0%	50%	0%	0%
D	--	--	--	--	--
%D	0%	0%	0%	0%	0%
E	--	--	--	--	--
%E	0%	0%	0%	0%	0%
U	--	--	--	--	--
%U	0%	0%	0%	0%	0%

Table 9: AS English Literature

ENG LIT		2010-11 /1	2011-12 /10	2012-13 /3	2013-14 /2	2014-15 /7
A		--	2	2	2	2
%A		0%	20%	67%	100%	29%
B		--	5	--	--	4
%B		0%	50%	0%	0%	57%
C		--	3	1	--	1
%C		0%	30%	33%	0%	14%
D		--	--	--	--	--
%D		0%	0%	0%	0%	0%
E		1	--	--	--	--
%E		100%	0%	0%	0%	0%
U		--	--	--	--	--
%U		0%	0%	0%	0%	0%

Table 10: AS English Language & Literature

ENG LANG & LIT	2010-11 /4	2011-12 /0	2012-13 /0	2013-14 /2	2014-15 /0
A	1	--	--	2	--
%A	25%	0%	0%	100%	0%
B	1	--	--	--	--
%B	25%	0%	0%	0%	0%
C	1	--	--	--	--
%C	25%	0%	0%	0%	0%
D	1	--	--	--	--
%D	25%	0%	0%	0%	0%
E	--	--	--	--	--
%E	0%	0%	0%	0%	0%
U	--	--	--	--	--
%U	0%	0%	0%	0%	0%

Table 11: AS Maths

MATHS	2010-11 /12	2011-12 /14	2012-13 /13	2013-14 /14	2014-15 /12
A	6	7	10	4	6
%A	50%	50%	77%	29%	50%
B	3	4	--	5	3
%B	25%	29%	0%	36%	25%
C	2	2	--	4	1
%C	17%	14%	0%	29%	8%
D	--	1	2	1	2
%D	0%	7%	15%	7%	17%
E	--	--	1	--	--
%E	0%	0%	8%	0%	0%
U	1	--	--	--	--
%U	8%	0%	0%	0%	0%

Table 12: AS Further Maths

<b>F MATHS</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>	<b>2014-15</b>
	<i>/3</i>	<i>/4</i>	<i>/5</i>	<i>/5</i>	<i>/4</i>
<b>A</b>	1	2	5	1	2
<b>%A</b>	33%	50%	100%	20%	50%
<b>B</b>	2	1	--	2	1
<b>%B</b>	67%	25%	0%	40%	25%
<b>C</b>	--	--	--	2	--
<b>%C</b>	0%	0%	0%	40%	0%
<b>D</b>	--	1	--	--	1
<b>%D</b>	0%	25%	0%	0%	25%
<b>E</b>	--	--	--	--	--
<b>%E</b>	0%	0%	0%	0%	0%
<b>U</b>	--	--	--	--	--
<b>%U</b>	0%	0%	0%	0%	0%

Table 13: AS Biology

<b>BIOL</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>	<b>2014-15</b>
	<i>/11</i>	<i>/8</i>	<i>/9</i>	<i>/10</i>	<i>/8</i>
<b>A</b>	3	4	5	2	3
<b>%A</b>	27%	50%	56%	20%	38%
<b>B</b>	7	2	2	6	2
<b>%B</b>	64%	25%	22%	60%	25%
<b>C</b>	--	2	1	2	1
<b>%C</b>	0%	25%	11%	20%	13%
<b>D</b>	1	--	--	--	2
<b>%D</b>	9%	0%	0%	0%	25%
<b>E</b>	--	--	1	--	--
<b>%E</b>	0%	0%	11%	0%	0%
<b>U</b>	--	--	--	--	--
<b>%U</b>	0%	0%	0%	0%	0%

Table 14: AS Chemistry

<b>CHEM</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>	<b>2014-15</b>
	<i>/9</i>	<i>/8</i>	<i>/9</i>	<i>/9</i>	<i>/11</i>
<b>A</b>	3	2	2	1	7
<b>%A</b>	33%	25%	22%	11%	64%
<b>B</b>	2	4	3	6	2
<b>%B</b>	22%	50%	33%	67%	18%
<b>C</b>	--	2	3	2	--
<b>%C</b>	0%	25%	33%	22%	0%
<b>D</b>	3	--	1	--	1
<b>%D</b>	33%	0%	11%	0%	9%
<b>E</b>	1	--	--	--	1
<b>%E</b>	11%	0%	0%	0%	9%
<b>U</b>	--	--	--	--	--
<b>%U</b>	0%	0%	0%	0%	0%

Table 15: AS Physics

<b>PHYS</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>	<b>2014-15</b>
	<i>/3</i>	<i>/5</i>	<i>/4</i>	<i>/5</i>	<i>/7</i>
<b>A</b>	--	--	3	--	2
<b>%A</b>	0%	0%	75%	0%	29%
<b>B</b>	2	1	1	2	0
<b>%B</b>	67%	20%	25%	40%	0%
<b>C</b>	1	4	--	2	2
<b>%C</b>	33%	80%	0%	40%	29%
<b>D</b>	--	--	--	1	1
<b>%D</b>	0%	0%	0%	20%	14%
<b>E</b>	--	--	--	--	1
<b>%E</b>	0%	0%	0%	0%	14%
<b>U</b>	--	--	--	--	1
<b>%U</b>	0%	0%	0%	0%	14%

Table 16: Of the total number of subjects studied (facilitating subjects ONLY) by the cohort of 20 highly able from each year (2011-2015), these are the % of 'A', 'B' and combined 'A&B' grades:

	2010-11 <i>/43</i>	2011-12 <i>/49</i>	2012-13 <i>/45</i>	2013-14 <i>/48</i>	2014-15 <i>/49</i>
<b>A</b>	14	17	27	13	22
	<b>33%</b>	<b>35%</b>	<b>60%</b>	<b>27%</b>	<b>45%</b>
<b>B</b>	17	17	7	21	12
	<b>40%</b>	<b>35%</b>	<b>16%</b>	<b>44%</b>	<b>24%</b>
<b>A+B</b>	31	34	34	34	34
	<b>72%</b>	<b>69%</b>	<b>76%</b>	<b>71%</b>	<b>69%</b>

Table 12 - Pupil Outcomes for pupil comparison groups *[if available]*

Target Outcome	Research method/ data collection	Sample characteristics	Metric used	1 <sup>st</sup> Return and date of collection	2 <sup>nd</sup> Return and date of collection
<i>e.g. Increased educational attainment and progress in Writing</i>	<i>e.g. Pupil assessment data</i>	<i>e.g. Characteristics and assessment data collected for 97 of 100. The profile of respondents matches that initially targeted in the Theory of Change.  Please find detailed analysis of the profile of respondents in Section 7.2</i>	<i>e.g. mean score or percentage at diff National Curriculum Levels or GCSE grades</i>	<i>e.g. Mean score- 3.7, collected September 2015</i>	<i>e.g. Mean score- 4.5, collected June 2015</i>

**8.2.1** Please provide information (for both the intervention group and comparison group where you have one) on:

- Sample size, sampling method, and whether the sample was representative or not  
Commentary on pupil impact (please also refer to table 6-8 re impact on different groups of pupils)
- Qualitative data to support quantitative evidence.
- Projects can also provide additional appendices where appropriate.

*(minimum 500 words)*

### 8.3 Wider System Outcomes

**Table 13 – Wider System Outcomes**

Target Outcome	Research method/ data collection	Sample characteristics	Metric	1 <sup>st</sup> Return and date of collection	2 <sup>nd</sup> Return and date of collection
e.g. Teachers/schools involved in intervention making greater use of networks, other schools and colleagues to improve subject knowledge and teaching practice	e.g. Paper survey	e.g. Surveys completed by all participating teachers	e.g. average number of events attended per teacher per year before the project and over the course of the project	e.g. Average number of events attended in the academic year 2012-2013: 3.2	e.g. Average number of events attended in the academic year 2013-2014: 4.3  Average number of events attended in the academic year 2014-2015: 4.5
<i>WSO1. State schools have developed an understanding of the strategic approaches taken in independent schools that bring about high academic achievement.</i>	Staff survey (survey 1=paper; survey 2=electronic Google form)  Wider institutional strategic data gathered from qualitative interviews  Lesson observation research data	<i>Baseline: 38 respondents from a total of 43 invites.  Re-survey: 33 respondents (the possible total sample size had decreased since baseline data collection due to some teachers leaving the project midway. New teachers joining partway were not included in the survey.</i>	<i>Mix of open-ended questions and ranking and scale-rated questions  1-5 ranking (1= most important)  1-6 Scale rating (6=fully; 5=to large extent; 4=to some extent; 3=limited extent; 2=not at all; 1=undecided)  Open-ended qualitative responses  Qualitative reflections</i>	Baseline data collected late Mar-late Apr 2014  Baseline data gathered Feb/Mar 2014	Re-surveyed post-Easter Apr 2015

<p><i>WSO2. State school teachers have developed an understanding of the knowledge-led, content-rich curriculum for their subject</i></p>	<p>Staff survey (survey 1=paper; survey 2=electronic Google form)</p> <p>Lesson observation research data</p>	<p>See above</p>	<p>See above</p> <p>Qualitative reflections</p>	<p>Baseline data collected late Mar-late Apr 2014</p>	<p>Re-surveyed post-Easter Apr 2015</p>
<p><i>WSO3. Increased expertise in delivering teaching and learning programmes that enthuse and engage all learners.</i></p>	<p>Staff survey (survey 1=paper; survey 2=elec)</p> <p>Lesson observation research data</p>	<p>See above</p>	<p>See above</p>	<p>Baseline data collected late Mar-late Apr 2014</p>	<p>Re-surveyed post-Easter Apr 2015</p>
<p><i>WSO4. Skill in delivering differentiated learning practices and programmes so that more able learners achieve top grades. It is anticipated that initially this will be a teacher outcome, subsequently becoming a school-wide outcome through peer teaching/in-house upskilling.</i></p>	<p>Staff survey (survey 1=paper; survey 2=elec)</p>	<p>See above</p>	<p>See above</p>	<p>Baseline data collected late Mar-late Apr 2014</p>	<p>Re-surveyed post-Easter Apr 2015</p>
<p><i>WSO5. Enhancement of teachers' ability to articulate their learning and share their practice with others.</i></p>	<p>Participation in and engagement with dissemination activities</p> <p>Use of and engagement with subject-specific online networks</p> <p>Lesson observation notes</p> <p>Attendance at, active participation in Reflection and Sharing Day sessions</p>		<p>Willingness and ability to share learning in public forum</p> <p>Active participation in online spaces</p> <p>Qualitative reflections</p> <p>Willingness and ability to share reflections and engage in discussion</p>	<p>Project meetings at City Hall – Apr &amp; June 2015</p> <p>Launched in June 2014</p> <p>June 2014</p>	
<p><i>WSO6. Establishment of a sustainable long-term collaboration/brokerage between state and independent schools.</i></p>	<p>Development of website</p>		<p>n/a</p>	<p>Launched June 2015</p>	

### 8.3.1 Please provide information on:

**WSO1.** State schools have developed an understanding of the strategic approaches taken in independent schools that bring about high academic achievement.

**WSO2.** State school teachers have developed an understanding of the knowledge-led, content-rich curriculum for their subject

**WSO3.** Increased expertise in delivering teaching and learning programmes that enthuse and engage all learners.

**WSO4.** Skill in delivering differentiated learning practices and programmes so that more able learners achieve top grades. It is anticipated that initially this will be a teacher outcome, subsequently becoming a school-wide outcome through peer teaching/in-house upskilling.

**WSO5.** Enhancement of teachers' ability to articulate their learning and share their practice with others.

**WSO6.** Establishment of a sustainable long-term collaboration/brokerage between state and independent schools.

#### Sample size, sampling method, and whether the sample was representative or not

Two of three KS5 state Sixth Form colleges, two of four KS4 state 11-16 secondary schools and all four independent schools were visited for this aspect of the research. Given the premise of the project, all four independent schools necessarily formed the focus of the sample. Where feasible, visits were also made to state schools to gather the same types of whole school data. A total of 12 visits were made to these schools.

#### Commentary on wider system impact qualitative data to support quantitative evidence.

**WSO1.** State schools have developed an understanding of the strategic approaches taken in independent schools that bring about high academic achievement

The data suggests that this outcome has been achieved.

#### **A closer look at the data:**

The achievement of this outcome has, in part, been discussed in relation to **TO2 & TO3** (*'increased subject knowledge and confidence to prepare students for achieving A/A\*' and 'increased knowledge of what works regarding AS/A2 teaching and more effective high challenge offered', respectively – see section 8.1*). Additional data relevant for outcome **WSO1** was gathered through the second staff survey, which was completed post Easter 2015, and which included questions asking the state and independent school teachers to reflect on all of the research activities and experiences they had been involved in and consider whether any of these had influenced their thinking and/or understanding of various aspects related to teaching and learning to A/A\* level. The state school teachers were more likely than their independent school peers to comment on shifts in perception and offered comments such as follows:

#### **KS4**

- *I witnessed the freedom to teach in any way, to teach traditionally without worrying someone will ask for your 'learning episodes, AfL, RAG, progress in 20 mins....I decided I want to teach traditionally, then bring in freer elements to the learning and encourage this in my dept - it's a struggle..... (KS4-3-MATHS)*
- *"It has been good to share ideas and thoughts with colleagues who predominately work with high level students. And to see what they have used in the classroom" (KS4-1-MATHS)*

#### **KS5**

- *The best lessons I saw at IND-2 all involved the lessons hanging off a concrete if sometimes obscure example. I have tried to do that more...Plus my pace has increased a lot in some areas. I feel with my A2 students I am more inclined to trust that they can keep up and do it. (KS5-1-BIOL)*
- *In my visit to my first school I saw some revision lessons. I tried out a couple of ideas I had from the day. One technique was not effective (papers around the room) but it made me try out some different revision activities. I have also placed more focus on the discussion with questioning rather than on waiting for students to take notes. I have set more note-taking as prep work and monitored this so that more time is available for trying to apply the key concepts and focusing on language and exam technique. (KS5-2-PHYS)*



- *teaching off syllabus I saw a lot of at IND-4. Raising the culture/standards of my students came directly out of my experience at both IND-1 and IND-4. The Olympiad questions were used as part of an exchange in the LSEF project (KS5-1-PHYS)*
- *Discussion with other colleagues at other schools (KS4-3-BIOL)*

In response to a different question, teachers also indicated whether they had done anything different or tried anything new to support their highly able students to achieve A/A\* grades and to help them prepare applications to Russell Group institutions. With just two exceptions (independent school teachers), all said they had tried something new or different and 25 of 33 responses indicated that this had been influenced by their involvement in this project. Examples from the KS4 state school teachers included: going beyond the syllabus (KS4-3-ENG & KS4-3-CHEM), providing greater challenge and extension (KS4-3-BIOL), “trying 'looser' problems, trying to go beyond the syllabus, trying to get pupils thinking 'outside' of their comfort zone” (KS4-3-MATHS) and developing subject knowledge through departmental CPD (KS4-1-ENG).

Examples from the KS5 teachers included:

- *I have done a lot more teaching around the subject with the A2 students (going off syllabus) I have tried to raise the culture/minimum standards of the lab/subject to raise students own expectations. I tried some physics Olympiad questions with the A2 students (KS5-1-PHYS) and added teaching off syllabus I saw a lot of at IND-4 raising the culture/standards of my students came directly out of my experience at both IND-1 and IND-4. The Olympiad questions were used as part of an exchange in the LSEF project*
- *Have used Google Drive effectively to set and share and create holiday work for AS and A2. Have started to build a Biology website for student reference. Have used Prepwork regularly and as the major driving force in the lessons more. Have created more "models" of work and shared on Moodle to emphasise the quality I am after. Tried using more concrete Biological examples to hang theory off of. (KS5-1-BIOL)*
- *Pace in my lesson has been much better/faster with the right resources. (KS5-3-PHYS)*
- *I do not 'dumb down' questions and I expect students to come to my level more than I used to. This is difficult when you have extremely weak students in a class with A/A\* students as the weak students have become lost. In the independent schools I saw how teacher/students could spend a whole lesson analysing one question. The students stayed with it as they could see the benefit. Before I felt as if I was apologetic if a topic was a bit boring or if we were going through it slowly because we were going in depth. I also care less about 'entertaining' the students and am unapologetic if a lesson is a slow, deep insight into one topic. (KS5-1-CHEM)*
- *more able students allowed to prepare and mini teach students go through Chemistry Olympiad questions students create high order questions for other students to prepare mark schemes spotlight check activity - more able students put themselves forward to answer questions from rest of teaching group students are constantly being motivated to write first hand answers from mark schemes not allowed sections (KS5-3-CHEM)*

And although WSO1 wider school outcome was focused on teachers from the state sector, it seems that this also became an unintended positive outcome for several independent school teachers who felt excited to have learnt about some of the strategies and approaches used in the state sector which they felt could be beneficial for their own classrooms. One teacher, also the head of department in her school, decided to bring in large whiteboards into every classroom in her department after observing their effective use in the lessons she had observed during her visits to the state schools in Phase 1 of the project. A different teacher spoke about including more interactivity in her lessons; another had tried to use some of the Google tools trialled as part of the project. Teachers were also particularly interested in the variety of activities seen, which seemed not to be common in their own practice, and as a result had decided to try something new/different in the way they taught, e.g.

- *I have started using more preparatory homework e.g. reading an article or a text book chapter, so that students arrive to lessons with the ability to ask more insightful questions and have the chance to iron out any issues that they have already met. I have also made this part of my list of appraisal targets. (IND-3-BIOL)*
- *Tried more AfL e.g. 'invisible marking' to force students to address mark schemes. Tried to rewrite some prep exercises to include more open-ended questions as well as routine*

practice. Talked to students more about how to study and how to learn. Started looking at memory systems and neuroscience. (IND-2-PHYS) and added *LSEF provided the impetus for me to think more about my teaching*

- *Increasing use of AFL. Some experimentation with using collaborative documents, online activities with students. We have changed from A-level to Pre-U which has resulted in us teaching a broader range of literature in year 12, with more freedom (as there is no y12 exam) and scope to range beyond the traditional syllabuses. It has probably also given us the time and scope to get students taking a more active role in their own learning.” (IND-2-ENG) and added *Some of the discussions we have had have fed into my thinking/ approach. The work on google docs was also influential.**
- *Teaching lessons on skills such as essay-planning rather than just improving essay-planning through assessment and feedback. (IND-3-ENG) and added *I recognised the value of this through observations in other schools and through team-teaching with KS5-1-ENG.**
- *I had forgotten how good white boards are - visiting schools involved in in the LSEF helped to remind me showed me how useful they are in lessons. (IND-3-CHEM)*

**WSO2.** State school teachers have developed an understanding of the knowledge-led, content-rich curriculum for their subject

The data suggests that this outcome has been achieved.

**A closer look at the data:**

Almost every teacher (state and independent) indicated in their survey responses a belief that a broad and deep foundation of knowledge was fundamental to future academic achievement. As might be expected, schools’ and teachers’ work around further developing practitioners’ subject knowledge is ongoing and we believe that our project can support teachers with this through what has been learnt from their action research activities and through our testing of the effectiveness of online cross-sector subject-specialist networks.

On an individual level, compared to their baseline survey responses several state school teachers were now indicating having become more involved and engaged in knowledge-focused activities including joining professional subject organisations such as the Royal Society of Chemistry (RSC), attending Science Museum Lates’ sessions, subscribing to journals, reading articles and undertaking knowledge-based research (e.g. using books, articles, the internet) for their lessons. Some of the English teachers have been particularly inspired to shift to a knowledge-led approach as suggested by these comments:

- *Seeing the way that pupils in the public schools talk so freely and in individual ways about texts rather than waiting to be told what to think by the teacher, made me want to help some of my more able students access texts that provide them with other viewpoints. (KS4-3-ENG)*
- *...ideas emerged directly from the [subject] development day at IND-4 and subsequent discussion with IND-4-ENG and KS4-3-ENG about the primacy of knowledge and in particular knowledge about range canonical texts both for teachers and students (KS4-1-ENG)*

And, after seeing the strong focus on subject knowledge in English lessons in the independent schools and through discussions with cross-sector colleagues, one of these teachers (also a HoD) told us he felt inspired to reimagine the use of his departmental meeting time to include a CPD focus on the development of his own and his colleagues’ subject knowledge. He recognised that within his department there already existed a breadth of knowledge about different texts and authors, which when shared, could very quickly and easily broaden individuals’ knowledge repertoire. Although still at a pilot stage, it does appear to be achieving this purpose as well as helping to increase teachers’ confidence and maintain their passion for their subject (which was seen so strongly in many independent school lessons).

**WSO3.** Increased expertise in delivering teaching and learning programmes that enthuse and engage all learners

The data suggests that this outcome has been achieved.

**A closer look at the data:**

As reported in [section 8.1](#) 'Teacher Outcomes', as a result of being involved in this project, several of the state school teachers feel they have developed a better understanding of the skills and competencies commonly seen in an A/A\* grade student and have already begun to trial some new teaching and learning strategies and approaches. Possessing a clearer sense of what is required from both a teaching and learning perspective and having had opportunities to observe the strategies and approaches used in different independent school classrooms certainly appears to have increased the teachers' confidence to provide more engaging and challenging programmes for their students. Their responses to the scale-rated question about the extent to which they felt they fostered the skills, behaviours and competencies required for teaching to the highest level indicated that although their confidence levels still trailed those of their independent school colleagues, perhaps more importantly these had increased from the time of the baseline survey to the re-survey approximately one year later. Specifically, teachers felt more confident in their ability to:

- predict A/A\* grades accurately
- accelerate the learning of their most able students and provide sufficient stretch and challenge for students
- have access to sufficiently high challenge problem solving/enquiry-based resources
- utilise any subject specific networks to support their most able students
- provide specialised support for students to understand the requirement of Russell Group/Oxbridge entry/ interviews
- provide access to out-of-class enrichment opportunities to support student to achieve RG/Oxbridge entry
- offer their most able students 'beyond the syllabus' activities/ resources/ opportunities
- offer their most able students anything else not mentioned to enhance their capacity to achieve at the highest level.
- (note: as detailed in [section 8.1](#) and illustrated by [Graph 2](#))

In addition, the discussion for [WSO1](#) reported on the new and/or different approaches and strategies tried by almost every state and independent school teacher involved in the project and that this had been influenced by their participation in this study. We feel that this is a strong indicator of the achievement of this outcome because although some approaches and activities have been tried and found not to be immediately successful the fact that teachers feel sufficiently confident and inspired to adapt or alter their practices in light of their reflections seems particularly encouraging.

**WSO4.** Skill in delivering differentiated learning practices and programmes so that more able learners achieve top grades. It is anticipated that initially this will be a teacher outcome, subsequently becoming a school-wide outcome through peer teaching/in-house upskilling. The data suggests that this outcome has been achieved.

**A closer look at the data:**

As detailed in [section 8.2](#) 'Pupil Outcomes', during academic year 2014-15 the three state Sixth Form colleges have trialled a KS5 intervention called the Scholarship Graduate programme and this has involved providing an additional programme of learning alongside highly able students' A level studies. The programme has been specially designed to include particular elements and factors identified in the independent schools as seeming to make the difference for high level learning and high level achievement. It is very much in its infancy, having only run for one school year. As such, it is only now that the colleges have been able to complete their evaluation of this first year of the programme and therefore consider any possible impact in terms of students' motivations, commitment, aspirations and achievement. Using this learning, the colleges will be better placed to decide how the programme should be refined going forwards and what may need to be changed and/or adapted at both teacher and institutional level in order to better support their most able students to achieve the top A/A\* grades.

In addition to this, teachers from both sectors indicated in their second staff survey responses that during the year they have adapted their practices to include some of the approaches and strategies seen in each other's classrooms. For the independent school teachers, it could be argued that these sorts of changes are unnecessary given that they are already so successful in achieving high grades and in such large numbers. However, as one independent school Chemistry teacher so passionately argued at our project dissemination conference in June 2015,

- *The overwhelming thing for me when I went to KS5-1 was variety. In independent schools, we become really complacent. We have relatively low maintenance, really compliant, nice students who will sit there and allow you to talk to them and teach them however you want them to be taught and that starts to get rid of the variety you see in state schools. We've heard about this activity and that activity [as seen when observing each other's lessons as part of this project] and that was brilliant and it started getting me thinking about the need for variety. Just because our students don't demand it doesn't mean that they wouldn't really appreciate it. (IND-4-CHEM)*

These cross-sector research experiences had also proved powerful for re-evaluating teachers' existing practices, as explained by another teacher from a different independent school:

- *For me going in and teaching at KS4-1 and KS5-3 just made me start a whole lesson planning from scratch and that made me go back to what I was doing with my own students and ask 'well I think I know what I'm doing with them, but am I?, am I really sure? do I know what they want from a lesson?' and so just had that whole 'reset' moment for me and that was incredibly valuable. (IND-2-PHYS)*

For the state school teachers, following the very first visits to each other's schools there was qualitative evidence to show that many teachers were keen to test some of the ideas they had seen in the independent sector. The skill of delivering more differentiated learning practices and testing the effectiveness of different approaches in their own settings clearly takes time and will need to be an ongoing process beyond the lifetime of this project. However, the fact that teachers were sufficiently energised and professionally curious to learn from their independent school colleagues does suggest that we have gone some way towards meeting this particular outcome and that over time this may become a school-wide outcome through peer teaching and in-house upskilling.

#### **WSO5. Enhancement of teachers' ability to articulate their learning and share their practice with others**

The data suggests that this outcome has been achieved.

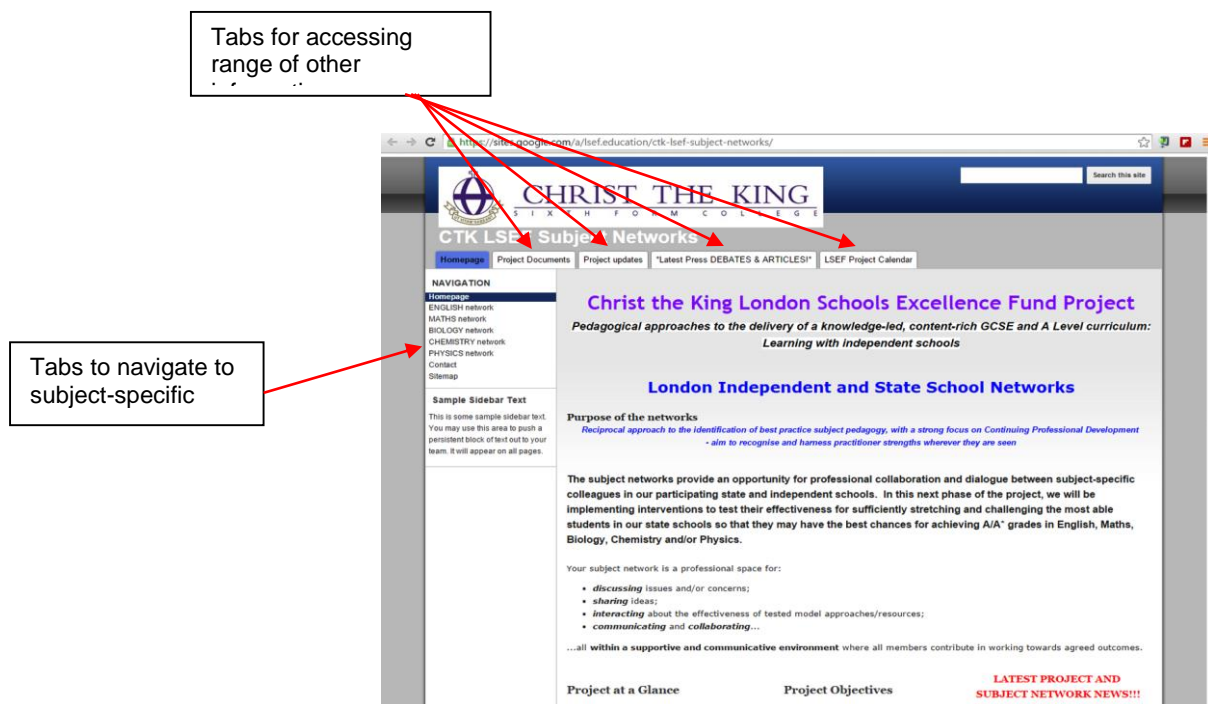
##### ***A closer look at the data:***

Following the Phase 1 visits to each other's schools and colleges, it was evident from many teachers' notes that they were reflecting on their own and their peers' practices and considering what they had seen in light of what might be useful but also feasible to bring back to their own classrooms. They recorded these insights in the research documents used to gather their data on the lessons they observed and examples of their reflections have been included in [section 8.1](#) (for the discussion on [TO3](#) and [TO4](#)).

Soon after, we invited all of the state and independent teachers to a project Reflection and Sharing day held at a central London venue. Despite the difficulties of finding a suitable date for a relatively large group of people, and also accounting for the timing of our event (GCSE and A level exam period approaching), approximately two thirds of the teacher-researchers attended. At this event we presented the emerging findings and emerging key themes from all of the data they had gathered from their visits (this totalled approximately 300 sets of qualitative research notes) and invited teachers to comment based on their own visits to the different schools and colleges. Many teachers from both sectors willingly engaged in discussions and reflected on their experiences and shared these with the group. Again, this indicated to us their ability to reflect on their learning and to synthesise this in the broader context of the project.

In Phase 2 of the study, the research activities took a much more subject-specific focus. This included teachers' attendance at a subject Development Day where the state and independent school teachers met together to discuss key issues and concerns for their subject in light of the emerging findings for their subject and based on their own professional experiences and what they had learnt so far from the project. Without exception, every group engaged well in the face-to-face environment and enjoyed rich and stimulating discussions. During this phase of our work, we also asked the teachers to engage with and contribute to a subject-specific, cross-sector online network. We were testing five cross-sector online networks: one for each subject. These networks were set up specifically for the project, and were being tested (on two IT platforms – Google and Microsoft 365) to

explore their potential utility for sharing and developing teachers' subject knowledge and pedagogy expertise. The screenshots below illustrate what these communities looked like:

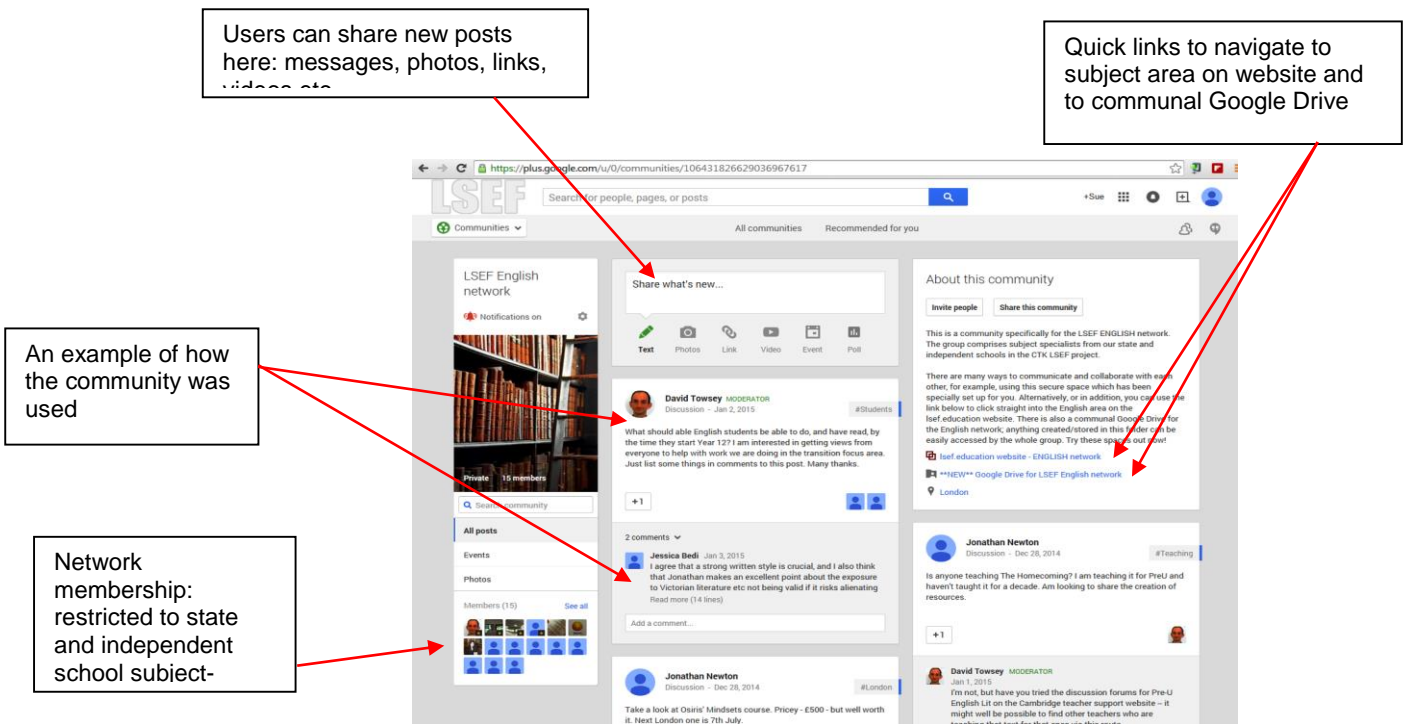


Tabs for accessing range of other

Tabs to navigate to subject-specific

Project news and update feed

Diagram 1: Google networks' project landing page



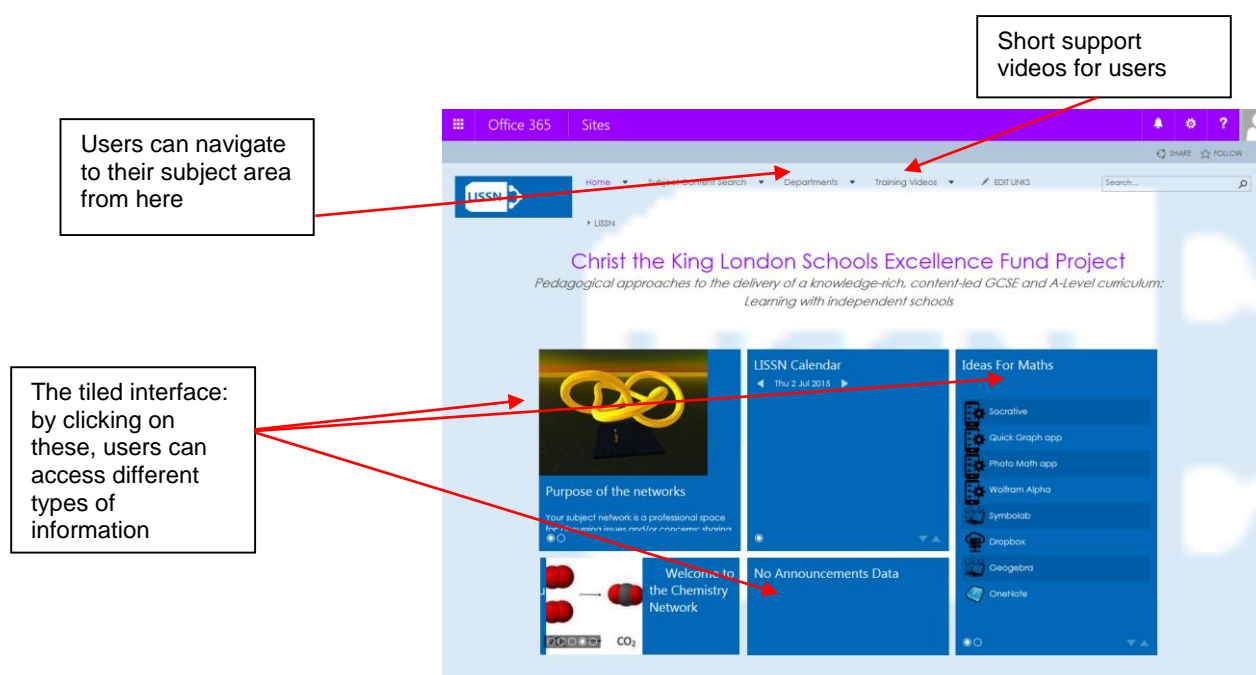
Users can share new posts here: messages, photos, links, videos etc

Quick links to navigate to subject area on website and to communal Google Drive

An example of how the community was used

Network membership: restricted to state and independent school subject-

Diagram 2: Example of a subject network's Google+ (G+) page



**Diagram 3: Microsoft 365 (Sharepoint) networks' project landing page**

The intention was for these to be networks for teachers, run by teachers, in an effort for these to best serve their professional needs. In order to gauge their utility, we monitored each online network over time to ascertain how much teachers engaged with them, and for what purposes. As might be expected, these were used to varying degrees and for a range of purposes and this differed for each subject group, e.g. the Chemistry network chose to focus their energies on the sharing of high challenge resources; the English network used their online community to discuss, to debate, to share resources and news about upcoming CPD events, to collaborate and develop resources. In all cases, the activity that did take place was very much in a professional collegial spirit where teachers were willing to share knowledge, understanding and thinking.

Towards the end of Phase 2, the Deputy Mayor of Education requested a meeting with some of our teachers to hear about their experiences of being involved in this project and what they felt they had learned from these opportunities to collaborate cross-sector. We invited 10 teachers to come; we explained the purpose of the meeting and that their involvement was on an entirely voluntary basis. Every teacher eagerly accepted the opportunity. The teachers spoke about different research activities they had been involved with and how they felt they had benefitted and what the impact and challenges of this had been for their own practices and thinking about their subject.

Phase 3 of our project focused on longer term sharing and dissemination of our learning; to begin, we held a public project dissemination conference at City Hall and the majority of the state and independent school teacher-researchers attended. Again, due to some timetable commitments and the exam period, a small number of teachers were not able to come. We approached a small group of teachers to ask them if they would be prepared to speak for a few minutes about their work in this project and what had been some of the benefits and challenges involved. Every one of the 11 teachers accepted the invitation although on the day one teacher was unable to attend due to illness; however, at the very last minute another teacher agreed to fill the gap and without any time for preparation she stood confidently before an audience of approximately 120 people and spoke about how this project had impacted on her in a professional capacity; a snippet of what she said has been transcribed and included here: *"I think I was probably expecting to observe a lot more lecturing of students just sitting writing notes in silence and I must say both of my misconceptions were indeed misconceptions...it was actually nothing like I expected...over my 20 years [teaching*

*experience] I'd say there was only one year where I've taught with another Physics teacher so I really think this has really been the most valuable thing for me out of this project is being able to work with other Physics teachers. I've found it very inspiring. I've actually found myself reading up on things at home and looking things up on Google a lot more and really for me it's been an inspiration on remembering why I started teaching Physics in the first place" (KS5-2-PHYS). We recognise that these teachers' willingness to share their learning may, in part, have been due to the particular individuals we approached and that perhaps not every teacher would have been as receptive to the idea. However, what felt apparent to us was the collegial, supportive spirit amongst the wider group and that those teachers who did present publicly felt they were doing so as a type of spokesperson for their subject group.*

**WSO6.** Establishment of a sustainable long-term collaboration/brokerage between state and independent schools

The data suggests that this outcome has been achieved.

***A closer look at the data:***

An online portal called The London Brokerage was publicly launched at our project dissemination conference held at City Hall on Monday 8<sup>th</sup> June 2015. The link for this website is as follows: <http://www.thelondonbrokerage.co.uk/>

The purpose of this new online resource is to showcase and facilitate state-independent school partnerships in London – something that has never happened before. An interactive map sits at the heart of the site, which users can click to find which schools/partnerships are working in their locale or further afield. The site is searchable by subject as well as partnership type, e.g. STEM, sport, Oxbridge workshops, career fairs, enrichment, raising aspiration etc. At the time of its launch, 125 state and independent schools featured on this portal. Since then, the site has received almost 1000 hits and 8 new state/independent partnerships (involving 8 independent schools working with a total of 47 state schools) have requested to be part of The London Brokerage. In addition, a number of schools have made enquiries to seek assistance with establishing a new partnership. As its name suggests, this resource aims to broker links between state and independent schools. In addition, schools can use this resource to try and form read about existing partnerships and/or to perhaps seek guidance on how to start a new partnership.

## 8.4 Impact Timelines

- At what point during/after teacher CPD activity did you expect to see impact on teachers? Did this happen as expected?

We expected to start seeing impact following the completion of the Phase 1 lesson observation visits – and upon completion of the analysis of this data. We had not fully anticipated the level of professional excitement these initial visits would arouse and how much of an immediate catalytic effect they would have on individuals' practice.

Some low level impact began to happen almost immediately following the first research visits to each other's schools, after opportunities to observe the teaching and learning of their specialist subject. This was evident in the teachers' reflections, as noted on their data collection documentation about what they might do differently, any envisaged constraints. This is described as low level in the sense that teachers were clearly starting to reflect on their professional peers' practice and considering their own approaches and thinking in light of this – thinking about how the teaching and learning happened, what might be useful for their own practice and how they might be able to bring this back into what they do.

- At what point during/after teacher CPD activity did you expect to see impact on pupils? Did this happen as expected?

The research design for the KS4 interventions was handled by one of our project partners. From the outset, they explained to us the types of assessments they intended to use pre- and post-intervention to measure any changes in students' subject knowledge and their levels of

academic confidence (subject assessments and a student survey to consider levels of academic confidence, attitudes towards learning and potential future education/career plans), and outlined when these would be conducted. Given that the interventions were happening between the late Autumn term of academic year 2014-15 through to the Easter period of 2015, realistically we knew that we could not expect to assess any impact on pupils until after the students had re-sat the assessments in June/July 2015 and this indeed was the case.

For our KS5 intervention around the Scholarship Graduate programme, impact was considered in relation to increased motivation, commitment, achievement and aspirations. We felt that impact on motivation and commitment might be evident within the first term of the programme's implementation, and that these elements should be monitored throughout the year (through the data gathered by the independent evaluator). Indeed, on the whole motivation levels were high in the students' first term of the programme. Although some individuals felt slight concerns about the increased workload and time investment required for the additional activities and experiences they were expected to participate in, nonetheless they were trying to take a longer-term view of the benefits to be gained. In terms of impact on students' achievement, our expectation was to see this in the students' grades achieved in their AS examination taken in summer 2015 (the students' results have been discussed above in [section 8.2](#) for 'Pupil Outcomes'. The students also took internal assessments known as FSAs (formal subject assessments) in the Autumn term but we did not consider it realistic to see any impact at such an early stage. Impact on students' aspirations would be evident through their intended university choices but, as AS students during the time of the project, they were not yet needing to make these final decisions. However, informal feedback from three quarters of the group indicates that almost every student is intending to make a university application to one or more Russell Group universities including Oxford and Cambridge.

- **At what point did you expect to see wider school outcomes? Did this happen as expected?**

Expected at various points:

- following the teacher-researchers' attendance at and contributions to the project Reflection and Sharing Day in June 2014, where emerging findings were presented and discussed
  - following the teachers' attendance at and contributions to their subject Development Day meeting held in late November 2014
  - following the teachers' involvement in the Exchange Day research activities conducted between January–March 2015
  - The teachers' reflections shared at, and following each of these sessions, confirmed our expectations.
- **Reflect on any continuing impact anticipated.**

We envisage that the impact of the project will continue through to this new academic year and beyond. The level of energy and enthusiasm demonstrated by many of the teachers from both sectors certainly suggests that this will be the case; this is further supported by their reflections, written and verbal, especially those shared during the latter stages of the study. For many of the teachers involved in the project, state and independent, we expect that their learning and reflections on the experiences gained from this work will continue to feed into their own thinking and practice, and perhaps that this will also be shared with their colleagues. Following their involvement in this project, it could be argued that some of these teachers have gone on to become informal subject ambassadors within their own schools, e.g. some teachers are Heads of Department and as such it could be said they possess the level of autonomy often required to implement or, at least, influence changes.

In addition, the Scholarship Graduate programme that was implemented as an intervention in the KS5 state Sixth Form colleges is being continued into this new academic year. Across two of the three colleges, a total of 19 students have now been successfully enrolled into the programme. It has been modified slightly based on what was learnt from the intervention, with perhaps the biggest change being that last year's cohort of students (now A2 students) will now mentor those new students beginning the programme in this new academic year. As



the programme is refined, the expectation is that this will start to show significant gains for the highly able students in these institutions in terms of achieving the highest A/A\* grades required to compete for a place at highly competitive universities – just as their independent school peers do in such large numbers.

In terms of institutional, school-level impact, perhaps realistically it is from this time onwards that we can start to see some of these changes being translated into actual practice, e.g. increased expectations being knitted into the school's cultural ethos in a range of ways and these being upheld more strictly than previously. In addition, the level of learning that has happened for the practitioners in this project has reinforced the importance and relevance of research-led approaches to CPD. Prior to the project, the colleges had begun to explore this idea but, certainly as a result of the successes of this work at teacher-level, this thinking will continue to impact on how the KS5 Sixth Form colleges approach the development of CPD opportunities from now on.

## 9. Reflection on overall project impact

### The overall impact of your project

Based on our findings from the data gathered, we believe it is reasonable to claim that the intended outcomes for teachers and for the wider system (at institutional level) have been met. Many of the state school teachers reported feeling more confident and knowledgeable about what is needed to better support their most highly able learners. While subject-specific CPD needs to be ongoing in order to support them, nonetheless, gains have been made in terms of their increased, detailed, research-informed understanding of what students need and also what they need to be able to fulfil this commitment. The project has also been successful in identifying key priorities for subject knowledge CPD and ways to effectively achieve these including: building professional peer-to-peer relationships between the state and independent sector; providing teachers with face-to-face and online research-informed CPD activities and experiences; using IT platforms to facilitate collaboration, sharing, opportunities to discuss and debate their subject and for all of this to support the development and sharing of subject knowledge expertise. And, while it is perhaps too soon to really know the impact of the project on state school student's achievement and aspirations, nonetheless a great deal has been learnt about the strategies, approaches and types/level of resources that seem to be most effective for making the difference in these areas.

### The extent to which your theory of change proved accurate

#### Activity 1:

- CPD programme of training to support the development of rich resources for specialist subject teachers in Maths, Science and English to A/A\* at KS4/5
- **Comment:** In Phase 2, pairs and groups of subject specialists in the state and independent schools worked together to create subject-specific high challenge resources that could be used with students, cross-sector. These were valuable practitioner-based CPD opportunities for learning more about and reflecting on what works and what is needed at A/A\*, and experiencing this first-hand.

#### Assumption:

- Schools learn from partners and each other to deliver the project activities and generate rich resources for dissemination
- **Comment:** The assumption proved partly accurate in that teachers learnt from each other through the opportunity to work together. But, partners did not become involved in this work. The rich and powerful learning for teachers came through them working together, discussing and collaborating, bringing their individual- and sector-specific expertise to the task. Finally, this perhaps proved far more valuable than being told what to do and how to do it by external consultants because teachers could learn from each other and, in particular, draw on the independent school teachers' greater wealth of experience of working with large groups of high ability students and trying to contextualise this for use and application in state settings.

#### Outcome:

- Improved teacher confidence and competence in relevant subjects at KS4/5 to become more effective teachers at A/A\*
- **Comment:** When teachers were re-surveyed, their responses strongly suggested their professional confidence and ability to teach and support their high ability students to A/A\* had

grown and that partly this was due to their involvement in this study. Compared to the baseline survey, more state school teachers were now commenting. We acknowledge that this increased addition of comments could be an effect of how the second survey was administered (as discussed earlier). However, the length and quality of their responses strongly suggested that teachers were commenting because they genuinely felt they now knew more and could work more effectively at this higher level.

**Goal:**

- **Improved pupil ambition and attainment at KS4/5 to qualify for entry to Russell Group entry**
- **Comment:** Due to the short timescale of the project, unfortunately it is too early to know with any confidence whether this goal has been achieved.

**Activity 2:**

- **Partners help support the development of high quality high challenge ethos CPD on differentiation**
- **Comment:** Again, partners did not become involved in this activity but instead it was achieved through practitioner-based CPD opportunities in Phase 1 and Phase 2. The teachers undertook the role of a teacher-researcher in this action research study and in Phase 1 all teachers engaged in two one-day visits to each other's schools to observe their specialist subject being taught in order to learn as much as possible about the nature of teaching and learning in KS4 and KS5 English, Maths, Biology, Chemistry and Physics in each of these institutions so as to establish an empirically-informed basis from which to work. In Phase 2, the teacher-researchers built on this learning through additional CPD when they engaged in a series of teacher exchanges (state and independent school teachers teaching in each other's schools) and when they researched the development of high challenge resources for use cross-sector (either through adaptation of existing resources or the creation of new materials).
- **Comment:** Some state school teachers reported that their experiences of working with their cross-sector colleagues had reinvigorated their passion for their subject as well as inspiring them to really consider how to develop stronger subject knowledge in order to strengthen teaching and learning in their subject. For instance, one KS4 English teacher, also the Head of Department in his school, decided to approach this issue by specifically blocking out some departmental meeting time to focus on the development of each other's subject knowledge. Given the pressures of time and budget for being released to attend such kinds of CPD, this teacher tried to circumnavigate these issues by working with his existing resources: mandatory meeting sessions and his school's English-specialist colleagues. The teachers took turns to use this time to share knowledge of difficult literary texts, which could then be used to teach extracts to students. While this project was only at the pilot stage, with more refinements necessary, already the teacher felt he had observed a difference in terms of broadening his own and others' subject knowledge.
- Some reflections from this teacher: *"The focus on the primacy of knowledge as opposed to skills and activity (pedagogy) is a completely refreshing new way to think about teaching and about professional development... This seems to give us the ability now to focus on developing our own subject expertise and communicating this confidently to classes as seen in the best examples of teaching in the independent sector."*

**Assumption:**

- **Teachers adapt their practice to incorporate high challenge differentiation strategies**
- **Comment:** Realistically, the adaptation of teachers' practices is the longer-term vision and desired outcome from this activity given that it takes time to test, reflect and refine practices in individual settings before these become embedded.
- **Comment:** However, following each of the visits to each other's schools in Phase 1, reflections from many of the teachers did indicate a keen desire and intention to try some of the approaches and strategies they had seen in each other's classrooms. At this stage, a strong interest, enthusiasm and willingness to do so would possibly have been a more appropriate assumption to make.

**Outcome:**

- **Improved differentiated teaching of core subjects at KS4/5 and increased subject knowledge for KS4/5 teachers**
- **Comment:** As reported above, teachers' comments (state and independent teachers, but more so state teachers) in their second staff surveys indicated they now possessed a

stronger and/or clearer understanding of what is needed for teaching at A/A\* and that this had been brought about, either wholly or partly, by their involvement in this project. State school teachers had developed an enhanced understanding of the pedagogical strategies, approaches and types of support needed for working with students at this level. Independent school teachers had been exposed to a broader range of teaching strategies and activities than they were used to in their own schools and many reported this had been incredibly beneficial in terms of helping them to develop their own practice in terms of trying 'new' and different ways to teach their students.

- **Comment:** There is certainly qualitative evidence telling us that teachers have been (re)engaging in different types of activities in order to develop their subject knowledge - such as the example of the KS4 English teacher reported on above. Other examples have been reported in [section 8.1](#).
- **Improved pupil ambition and attainment at KS4/5 to qualify for entry to Russell Group entry**
- **Comment:** Due to the short timescale of the project, unfortunately it is too early to know with any confidence whether this goal has been achieved.

### Activity 3:

- **CPD training on subject knowledge for all teachers to improve the development of subject specific A\* and Russell Group skills and behaviours**
- **Comment:** As a result of the project's CPD activities and experiences, rather than being due to external CPD training on subject knowledge, teachers have developed their knowledge and understanding in this area. Teachers' understanding about what works and what is needed has come through opportunities to observe their specialist subject being taught in each other's sector and in different schools, as well as through working together – discussing, debating, sharing and collaborating, face-to-face as well as in an online community.

### Assumption:

- **Teachers attend effectively delivered training based on observed excellent practice**
- **Comment:** As outlined above, the 'training attended' to achieve this aim came through project-driven research activities and experiences for the teachers. On the whole, these proved effective for developing teachers' understanding through first-hand observations and interactions with their cross-sector peers which enabled a sharing of subject knowledge and pedagogy expertise.

### Outcome:

- **Increased knowledge of what works regarding AS/A2 teaching and more effective high challenge offered**
- **Comment:** The findings from the comparison of the teachers' baseline and re-survey responses indicate that state school teachers do now possess an increased understanding of what is required at A/A\* level and, as a result, have begun to adapt their practices and expectations of their highly able students. However, this has not been achieved via the originally-envisaged activity.

### Goal:

- **Improved pupil ambition and attainment at KS4/5 to qualify for entry to Russell Group entry**
- **Comment:** Due to the short timescale of the project, unfortunately it is too early to know with any confidence whether this goal has been achieved.
- **Wider school system learning through dissemination of tested and transferable resources and training**
- **Comment:** Due to the short timescale of the project, the wider school learning can only really start being addressed from this point onwards.

### Activity 4:

- **Training and mentoring of teachers to conduct effective collaborative action research**
- **Comment:** At the outset, action research training was provided to all the state and independent school teachers. The aim was to endow participants with an understanding of the purposes of action research and its relevance for this project. At every stage, teachers were supported by the project manager and the Steering Group and this happened in a range of ways including being provided with research documents and guidance notes to assist them with each activity. The project manager maintained regular contact with participants and could be approached at any point if any individual had concerns or questions. The purpose of

each activity and each meeting was always explained so that teachers could be clear about how these fitted into the broader project picture. Openness and inclusiveness were key.

**Assumption:**

- **Teachers complete action research project objectively focused on optimal conditions for Russell Group entry**
- **Comment:** 43 teachers started the project; 37 of these teachers remained in the study throughout, which equals **86%** of the original cohort. The other **14%** relates to 6 state school teachers: 3 left their school/college to take up new posts elsewhere, 2 took on new and additional staff responsibilities and 1 left for health reasons.
- **Comment:** Overall, 44 teachers completed the project due to 3 new teachers joining to replace staff who left and a further 4 teachers joining at the beginning of Phase 2.
- **Comment:** The original cohort comprised 27 KS4 and KS5 state school teachers & 16 staff from the independent sector: **78%** of these state school teachers and **100%** of these teachers from the independent schools completed the project. Given that so many teachers, from both sectors, continued to be involved in the project throughout, and knowing the reasons for the small degree of attrition experienced, we believe it is reasonable to interpret these figures as excellent indicators of their high levels of investment and commitment to our project and its aims.

**Outcome:**

- **Increased confidence of teachers as reflective practitioners and collaborators**
- **Comment:** The teachers' reflections on each research activity and experience strongly indicates that the majority now possess an enhanced level of confidence as a reflective practitioner. This was further confirmed for a group of state and independent school colleagues when invited to share and discuss their learning with the Deputy Mayor for Education towards the end of Phase 2 and for some additional teachers who agreed to speak publicly about their experiences at our project dissemination conference in June 2015.

**Goal:**

- **Sustainable long term collaboration/brokerage established between schools**
- **Comment:** We believe we have been incredibly successful in establishing and maintaining professional cross-sector peer-to-peer relationships – at both a teacher and senior leadership level. This has been demonstrated by the strong, continued commitment of all the schools and colleges involved and by the high participant retention rate outlined above. While the longevity of these relationships remains to be seen, at this stage anecdotal evidence from individuals (from both sectors) indicates a keen interest and willingness to continue working together and this seems to be based on a genuine desire and a professional curiosity to continue learning from one another.
- **Comment:** In addition, as per one of the original aims of this project, an online portal has been set up to celebrate and codify the state-independent school partnerships that already exist in London and also to help bring schools together who wish to set up a new partnership. This resource is 'The London Brokerage' and can be found at: [www.thelondonbrokerage.co.uk](http://www.thelondonbrokerage.co.uk)

## How your project has contributed to the overall aims of LSEF

*The London Schools Excellence Fund (LSEF) is based on the hypothesis that investing in teaching, subject knowledge and subject-specific teaching methods and pedagogy will lead to improved outcomes for pupils in terms of attainment, subject participation and aspiration.*

*The aims of the Fund:*

- I. Cultivate teaching excellence through investment in teaching and teachers so that attention is re-focused on knowledge-led teaching and curriculum.*
- II. Support self-sustaining school-to-school and peer-led activity, plus the creation of new resources and support for teachers, to raise achievement in priority subjects in primary and secondary schools (English, mathematics, biology, chemistry, computer science, physics, history, geography, languages).*
- III. Support the development of activity which has already been tested and has some evaluation (either internal or external), where further support is needed to develop the activity, take it to scale and undertake additional evaluation.*
- IV. In the longer term, create cultural change and raise expectations in the London school system, so that London is acknowledged as a centre of teaching excellence and its state schools are among the best in the world.*

**Aim I:** Through this project, we have witnessed the importance of strong subject knowledge and its impact on the teaching and learning experience when working with highly able students. This appears to have also been brought (back) into the foreground for many of the teachers involved. Opportunities to continually update subject knowledge are critical for maintaining practitioners' enthusiasm for their subject and for developing and instilling this passion in their students; the impact of this on motivation and achievement should not be underestimated.

**Aim II:** Using two IT platforms (Google and Microsoft 365) we have set up and tested five online state-independent subject-specialist communities (English, Maths, Biology, Chemistry and Physics). These were established as networks for teachers, run by teachers. Our analysis of this test period has enabled us to learn a great deal about what works, as well as what is needed to effectively create networks that have genuine value and purpose for practitioners, cross-sector.

**Aim III:** Our project explored new territory in developing professional cross-sector partnerships; these have now been evaluated and the findings strongly suggest there is reciprocal merit in the continuation and development of these rich and powerful CPD experiences.

**Aim IV:** Cultural change is certainly happening in the KS5 state Sixth Form colleges as a result of what has been learnt from this project. In addition, we are currently exploring options for sustaining the online networks we have created and scaling these up so that this beneficial source of CPD provision can be made available to other London state and independent schools. In addition, the colleges are now placing a stronger focus on a research- and practitioner-led approach to CPD for its staff.

### Whether your findings support the hypothesis of the LSEF

At this stage in our project, it is too early to say with confidence whether the LSEF's investments have led to improved pupil outcomes in terms of GCSE and A level attainment, and aspiration.

### What your findings say about the meta-evaluation [theme](#) that is most relevant to you

Please refer to the discussion in [section 8](#) relating to achievement of the project outcomes, all of which were focused on the theme of secondary stretch.

## 10. Value for Money

A value for money assessment considers whether the project has brought about benefits at a reasonable cost. Section 5 brings together the information on cost of delivery which will be used in this section.

### 10.1 Apportionment of the costs across the activity

Broad type of activity	Estimated % project activity	£ Estimated cost, including in kind
Producing/Disseminating Materials/Resources		35212.69
Teacher CPD (face to face/online etc)	70%*	168581.53
Events/Networks for Teachers		
Teacher 1:1 support		
Events/Networks for Pupils		82700
Others as Required – Please detail in full Project infrastructure Consultant support External evaluation		186493.78
<b>TOTAL</b>	<b>100%</b>	<b>£ 472988</b>

\*The remaining 30% of project activity was spread across the other types of activities shown: producing/disseminating materials/resources; events/networks for pupils; project infrastructure; consultant support and external evaluation. The percentage of time per activity has not been apportioned as this was somewhat difficult to calculate given that several activities overlapped.

The highest percentage of project activity has been spent on teacher CPD. From the outset, the intention was always for this work to include a strong CPD focus due to its fundamental role in informing and impacting on teacher's professional practices and their students' learning experiences. Therefore, we believe that the proportion of time spent has been appropriate and also justified in terms of the project's achievements around the development of state school teachers' understanding and confidence to better support their most academically able students to achieve A/A\*. Of course, the extent to which this has actually been successful in terms of increased achievement and aspirations is unlikely to be seen immediately given that more time and further reflections will be needed as teachers continue to test and implement new/adapted strategies and approaches for teaching and learning. The short timescale of this project means that it is not possible or realistic to have assessed this pupil outcome with any confidence at this point. Inadvertently, the data also shows that many independent school teachers can be included in the achievement of this outcome. Despite the fact their schools and colleges are already highly successful in achieving large numbers of A/A\*, many of the teachers were deeply reflecting on their own practices in light of what they had observed and experienced and felt they were learning from their state school colleagues also.

Possibly, it would have been better to test the online subject networks over a longer period of time, which was actually the intention. But, due to the truncated period of the project and being initially let down by the appointed external IT consultant, therefore we were left with a shorter testing period for this activity. Nonetheless, we feel that the testing of the online networks was successful in the sense that much was able to learnt about what makes for an effective cross-sector practitioner community. Although some of the subject networks were more active than others, nonetheless we were able to learn from the experiences of each group.

Timing is crucial for any type of school-based work and this was certainly felt in our project. For example, due to the project beginning in the second term of the school year, rather than the first as planned, therefore we had to reduce the number of visits and also the focus of at least one visit was felt to be somewhat limited. The second visit took place near to the end of the second term when many classes had shifted their attention to revision and exam preparation. Although still useful, some teachers felt that what could be learnt from those sessions was more restricted than if their visit had been scheduled for earlier in the school year.

## 10.2 Commentary of value for money

The LSEF guidance on ‘Value for money: cost-effectiveness’ advises that “whilst it is possible to use a number of activities, outputs and outcome measures, it would be ideal to select the singly most relevant measure for the activity, output and outcomes for this analysis”. As such, for the cost-effectiveness analysis for our project, I am reviewing the two Phase 1 lesson research visits which involved every state and independent school teacher participating in the project. These were one-day visits that teachers made to each other’s schools and these happened twice between February and May 2014. The purpose of these visits was for state school teachers to observe their specialist subject being taught in independent schools and vice versa. This activity has been chosen as it is considered to be one of the most relevant and high impact CPD experiences provided to the teacher-researchers in this project in terms of outcome “increased knowledge of what works regarding AS/A2 teaching and more effective high challenge offered” (TO3):

Measure	Number of units: Actual
<b>Activity</b>	
Phase 1 lesson research visits (1 day per teacher x2 visits) <i>KS4 &amp; KS5 State → Independent</i> <i>Independent → KS4 &amp; KS5 State</i>	2 visits per teacher
<b>Output</b>	
No. of teachers	43
<b>(Gross) Outcomes</b>	
Increased knowledge of what works regarding AS/A2 teaching and more effective high challenge offered	25/33*

\*Gross outcomes are calculated using the final number of teachers who completed the second staff survey, which provided data on the achievement of this outcome. Due to changes in the composition of the teacher cohort (some staff departures, replacements and a new school joining the study), the second staff survey was completed only by those individuals who had also completed the baseline survey – hence the reduction in sample size from 43 to 33.

Cost-effectiveness of the Phase 1 lesson research visits has been broadly calculated taking the following into account:

- The staff cover costs for the 33\* state and independent school teachers for 2 one-day visits (independent school costs have been estimated – see note below).
- Travel and subsistence costs for staff taking part per visit (an average cost has been calculated based on the total number of CPD events for the project divided by the total number of staff involved).

Unit cost per...	Calculation	Estimate (£ spent)	+ in-kind (£)**	Estimate inclu. in-kind cost (£)
...visit	£7600/ 2	£3800	£11850/2	£5925
...teacher	£7600/33	£230.30	£11850/33	£359.09
...gross outcome	£7600/25	£304	£11850/25	£474
...net outcome***				

\*\*The in-kind costs relate to staff cover for the independent school teachers. These estimates are very broad and should be taken as indicative only as the cost per teacher has been based on the cover cost for the state school practitioners (it is expected that the independent school cover costs are actually higher).

\*\*\*Net outcome not applicable due to no control or comparison group

We feel it is not possible to compare the costs of these particular CPD experiences to externally provided CPD opportunities given the unique nature of these activities. The professional cross-sector collaboration between the state and independent school has been an underpinning feature of our project and we believe is unlike any commercially offered training events. For us, the powerful learning that has ensued as a result strongly suggests that these types of cross-sector CPD activities have proved to be excellent value for money – in terms of what has been learnt during the project and also in the sense of the longer-term impact on teachers’ understanding, passion and motivation for

taking their own and their students' learning forwards. In addition, the success of these partnerships – in being established and maintained – have indicated that there is great merit in this type of collaboration and that these benefits extend both ways – for the independent sector as well as the state sector.

### **10.3 Value for money calculations**

Note: This section is only required for projects with control or comparison groups

In order to demonstrate the cost effectiveness of the project we would like those projects who had control or comparison groups to provide some value for money calculations. Further guidance will be issued to support projects with this.



## 11. Reflection on project delivery

### 11.1 Key Enablers and Barriers to Achievement

- *Were there internal and/or external factors which appear to have had an effect on project success, and how were these responded to (if applicable)?*
  - + Development of effective cross-sector relationships, at institutional and teacher level: this has involved careful management, courtesy and respect, keeping all parties informed at carefully considered points of the project
  - + Support at institutional level
  - + A 'Project Link' at each institution has helped enormously in terms of brokering arrangements, having direct contact for communication
  - + Online networks – a nurtured approach with individuals (to increase/enable engagement) and individual networks – input of subject-specific content
  - + Willingness of teachers to be open-minded; to engage with the project and the action research approach
  - +/- Pre-agreed 'quantity' of activities over lifetime of the project: an enabler but perhaps also restrictive. For planning purposes and managing expectations, it was useful for schools to have a clear understanding from the outset about what participation would involve, e.g. how much time teachers would be out of school. But this upfront 'agreement' has meant it has rarely been possible to re-approach schools with additional research activities we might have liked to include, e.g. running pupil focus groups
  - +/- Funding for staff cover costs – significant for the state schools. This poses a potential barrier going forwards with regards continuation of such CPD opportunities when such funding will no longer exist
  - +/- Extent to which external consultants are used and for what purpose – remit needs to be clear and closely managed – it may be more efficient and cost-effective to manage and conduct some activities internally, e.g. data analysis (in best effort to ensure your own confidence in what the data is telling you)
  - + above point also applies to use of Google/IT consultants: it is better to train someone internally but have access to a consultant who can be responsive in a timely way
  - +/- Sufficient lead-in times, e.g. launch of online networks: an opportunity arose to test two IT platforms; however, there was not the same lead-in time for creating the MS 365 infrastructure (landing page with project identity and accounts tested and ready to use) as there was for Google; 'launching' the MS 365 platform before these features were ready inevitably caused delays and issues with use.
  - +/- Sufficient time for data analysis at each stage – essential given our iterative research design – however, the pace was unavoidable due to the project starting late and visits needing to happen prior to the examination period and end of term/school year – mitigated to some degree by greater (unplanned) involvement by some members of the Steering Group
- *What factors need to be in place in order to improve teacher subject knowledge?*
  - Subject-specific CPD opportunities need to exist for them to be accessed (either externally or created internally)
  - Willingness and commitment to improving subject knowledge – and finding ways to make this happen (e.g. a HoD at one state school is now using departmental meeting time differently to ensure that development of subject knowledge is on the agenda) – so, not necessarily relying just on access to external opportunities – ability and willingness to think innovatively/creatively about subject knowledge CPD opportunities
  - Time
  - Money
  - Opportunities to communicate and collaborate with others – especially key for those not part of a departmental team (e.g. because one doesn't exist) – important for renewing subject passion and refocusing attentions and energy on this rather than on mandatory but perhaps somewhat superfluous administrative tasks
  - Relevance and awareness: knowing what opportunities exist BUT ALSO which are worth attending – some sort of practitioner-informed kite-marking. The collaboration between state and independent partners has been so enriching with state partners being made aware of/invented to events organised by the independent schools which they would not have known about otherwise.

- Institutional level support (Heads/SLT) – as ‘gatekeepers’ of budget/timetable release etc.
- Recognition and understanding (institutional level and teacher level) about why this is important
- Links to HEIs and other professional bodies, e.g. examination awarding bodies, The Prince’s Teaching Institute, Villiers Park Educational Trust – as resources for developing subject knowledge and keeping up-to-date with latest developments for different subjects

## 11.2 Management and Delivery Processes

- *How effective were the management and delivery processes used?*
- Project delivery has been challenging due to the truncated timescale; this has meant all research activities have needed to take place at a much faster pace than originally envisaged. There were additional knock-on effects, e.g. less time available for data analysis and preparation of the next phase. However, we have worked hard to keep to our deadlines and this has involved effective and pragmatic management processes. From the outset, we recognised that partner relationships were a key feature of this project and so have been mindful of this when planning, communicating and liaising. For example, we have tried to be sensitive to teachers’ and schools’ priorities; we have aimed to keep all participants informed at carefully timed points in the project. The feedback we have received has indicated appreciation of this and we believe this has helped significantly in terms of maintaining positive relationships and engagement between all parties.
- *Were there any innovative delivery mechanisms and what was the effect of those?*
- Having a Project Manager to manage the day-to-day responsibilities and be the point of contact for all internal/external stakeholders (but combined with working closely with Steering Group members to ensure that delivery aligns with overall vision)
- A nurtured approach for managing the online networks – needed to be closely monitored and handled sensitively – vision was for the networks to be for teachers, run by teachers (subject facilitators appointed for each network) – and hence management needed to be carefully balanced for this to be the case – testing of different approaches to try to increase/develop engagement, e.g. personal 1-1 visits to demonstrate
- Appointment of subject facilitators – two per network (one state and one independent teacher as per the nature of the overall project) – subject to appropriate facilitators being in place (which required careful consideration) this was effective for gently steering the networks. Where ‘ineffective’ facilitators were chosen, this was found to impact detrimentally on the network
- A Project Link in each school – beneficial for arranging access, making arrangements, seeking permission etc.
- Continued reference to the evaluation framework and project aims to ensure all were being addressed appropriately, and timely
- Producing bespoke research documents with supporting guidance
- Use of Google apps for gathering survey data – efficient mechanism for automatically collating the data (time-saving) – not used in beginning, which led to additional work – but training required (and not a ‘perfect’ system as some features not yet sufficiently developed to be able to achieve certain tasks)
- External validation of data by HEI
- *Did the management or delivery mechanisms change during the lifetime of the project and what were the before or after effects?*
- The intention was to recruit a research assistant to help deliver the project. However, once the project was underway we felt a greater level of expertise was needed than could be provided by an RA and therefore the college principal and assistant principal became more involved in that particular capacity. This proved to be effective for helping to ensure project fidelity in terms of delivery and approaches taken.

## 11.3 Future Sustainability and Forward Planning

- *Do you have any plans for the future sustainability of your projects?*
- Yes, but this is very much subject to securing additional funding. Unfortunately, it is not feasible to cover this from school budgets.

- The aim is to scale-up the online subject networks so that other schools in London may benefit as we have learned these can be effective for developing teachers' thinking and practice around their subject. We believe we are now strongly placed to build and extend the networks and have produced a framework proposal for this.
  
- *What factors or elements are essential for the sustainability of your project?*
  - Funding to continue the online networks and to scale these up
  - The networks need to be managed and nurtured, and this requires personnel, experience and informed insight into how to do this effectively
  - An understanding of and sensitivity to the e-tools to be used - the benefits and relative drawbacks of each
  - Periodic face-to-face engagement for network members to maintain and/or develop engagement and motivation – this research has found that face-to-face sessions are important for establishing and building relationships and trust: elements that are key for engagement and commitment in the online environment
  - Areas for development should be agreed by network members to ensure they are meaningful, relevant and thus help to increase levels of engagement and contributions
  - 'buy-in' from end users – i.e. the teachers, and an established professional rapport with individuals
  
- *How have you/will you share your project knowledge and resources?*
  - Reflection and Sharing Day (June 2014) – emerging findings were presented to teacher-researchers, with opportunity to discuss and debate these in light of their Phase 1 research experiences and reflections
  - Internal sharing with state and independent school and college partners – a pre-dissemination meeting was held with all Project Links in May 2015 to share and test our findings, for these to be discussed and to gather their reflections and any other feedback
  - Project conference held at City Hall on Monday 8<sup>th</sup> June 2015
  - Through 'The London Brokerage', a digital platform we launched at our project dissemination conference: [www.thelondonbrokerage.co.uk](http://www.thelondonbrokerage.co.uk)
  - Final report for external stakeholders
  - Through continuation of the online networks; our aim is to develop and extend these to scale up and include more schools
  - Internal sharing – teacher-researchers involved in project acting as subject ambassadors to departmental colleagues
  - Continuation of the KS5 Scholarship Graduate programme in the state Sixth Form colleges
  - CPD Forums – including more schools to grow the networks, but this will be carefully managed to ensure that the purpose and fit remains valid for those involved
  - Following our dissemination conference, press articles on the project appeared in the TES; The London Evening Standard; Schools Week Online and most recently in The Spectator

## 12. Final Report Conclusion

### **Key findings for assessment of project impact**

- *What outcomes does the evaluation suggest were achieved?*

The evaluation suggests that the following teacher (TO), pupil (PO) and wider school outcomes (WSO) were achieved by this project:

  - **TO1:** Increased confidence and competence to improve the quality of learning at Key Stage 4 and Key Stage 5, to attain A/A\*
  - **TO2:** Increased subject knowledge and confidence to prepare students for achieving A/A\*
  - **TO3:** Increased knowledge of what works regarding AS/A2 teaching and more effective high challenge offered
  - **TO4:** Increased confidence as reflective practitioners
  - **PO4:** Pupils will have access to a range of activities that enhance their learning in English, Maths and Science
  - **WSO1:** State schools have developed an understanding of the strategic approaches taken in independent schools that bring about high academic achievement
  - **WSO2:** State school teachers have developed an understanding of the knowledge-led, content-rich curriculum for their subject
  - **WSO3:** Increased expertise in delivering teaching and learning programmes that enthuse and engage all learners
  - **WSO4:** Skill in delivering differentiated learning practices and programmes so that more able learners achieve top grades. It is anticipated that initially this will be a teacher outcome, subsequently becoming a school-wide outcome through peer teaching/in-house upskilling
  - **WSO5:** Enhancement of teachers' ability to articulate their learning and share their practice with others
  - **WSO6:** Establishment of a sustainable long-term collaboration/brokerage between state and independent schools
- *What outcomes, if any, does the evaluation suggest were not achieved or partly achieved?*
  - **PO1:** Increased academic confidence to achieve A/A\* at KS4 and KS5
    - The data for the KS4 state school students was limited and inconclusive.
    - The data for the KS5 state school students' showed the girls' confidence had increased whilst there was a slight drop for the independent school boys (note, this was purely an assessment of change over time; these students were not involved in any intervention).
  - **PO3:** Increased number of applications to Russell Group universities (this relates to pupils' raised aspirations and confidence to achieve sufficient UCAS points/grades to qualify as a Russell Group applicant)
    - Despite students from both sectors sharing similar levels of confidence, far fewer KS5 state students went on to apply to Russell Group universities compared to their independent school peers; the reasons behind this decision-making would merit further investigation.
- *What outcomes, if any, is there too little evidence to state whether they were achieved or not?*
- **PO2:** Increased percentage of pupils achieving A and A\* both at A Level and GCSE in the state schools and colleges in 2015
  - There is insufficient evidence at this time as students will only take their GCSEs and A levels next summer (2016).

### **Key lessons learnt for assessment of project delivery**

- *What activities/approaches worked well?*
  - Action research approach – research-led approach to CPD, which has the capacity to be professionally empowering for teachers – being the researcher as opposed to being 'the researched' by non-practitioners.
  - Having a Project Link person in each school/college as a key point of contact and liaison for communications and setting up different research activities.

- Iterative research design – to allow for flexibility to shape the research according to what is learnt from each stage, thus aiming to capitalise on every possible learning opportunity.
- *What activities/approaches worked less well?*
  - Timing of launch of networks – but this fell beyond our control due to being let down by one of the appointed IT consultants (see below).
  - Extent to which consultants were used for particular project activities.
- *What difficulties were encountered in delivery and how could they be mitigated in the future?*
  - Although a great deal was learnt from the research visits, possibly even more could have been gained through ‘better’ timing of these and some of the other research activities. Understandably, schools and teachers need to prioritise and where they choose to spend time away from school this needs to be deemed sufficiently beneficial and worth the sacrifice being made. However, the timing issue was due to issues beyond our control and so we have simply needed to be pragmatic and methodologically responsive to make the best of the circumstances faced.
  - The time available for analysis of the Phase 1 data was limited due to the delayed start of the project and needing to try to keep to the project timeline. It is essential to allow good time for interrogating the information gathered where the project involves an iterative research design; otherwise, this can lead to valuable opportunities being missed in the next set of research activities.
  - Initial difficulties were experienced through (unavoidable) reliance on the appointed Google IT consultant and the impact of this was felt on the launch and early running of the online subject networks. The impact was significant because at that stage we had yet to acquire the skills and understanding for how to manage these networks ourselves; going forwards we believe we would not face the same issues. For others considering undertaking such a venture, we would recommend ensuring that all parties share a clear understanding about the requirements and the vision and purpose of this activity and to allow sufficient lead-in time in a best effort to mitigate for similar scenarios.
- *Were there any additional or unintended benefits (e.g. increases in student attendance as a result of an intervention aimed at teachers)?*
  - Although the focus of the study was about increasing state school teachers’ knowledge and understanding of the practices and approaches used by independent schools to achieve such large numbers of A/A\* at KS4 and KS5, many of the independent school teachers reported having gained too from observing and working with their state school partners. Some practitioners spoke of ‘reset’ moments where they had been stirred into re-evaluating the ways they were teaching their students and whether they were actually meeting their students’ needs and doing so effectively.
  - The data highlighted the importance of developing character traits such as resilience and determination and a willingness to participate without a fear of being wrong, and this has subsequently heightened the KS5 state Sixth Form colleges’ focus on character education. Following a visit to some US schools focusing on the knowledge-rich curriculum, a professional collaboration has been established with Dominic Randolph, the Head of Riverdale School in New York, who is a leader in the character education movement. This work now looks set to continue, and began in earnest with Dominic contributing to the colleges’ ‘Character’ conference held at the start of this academic year.

### **Informing future delivery**

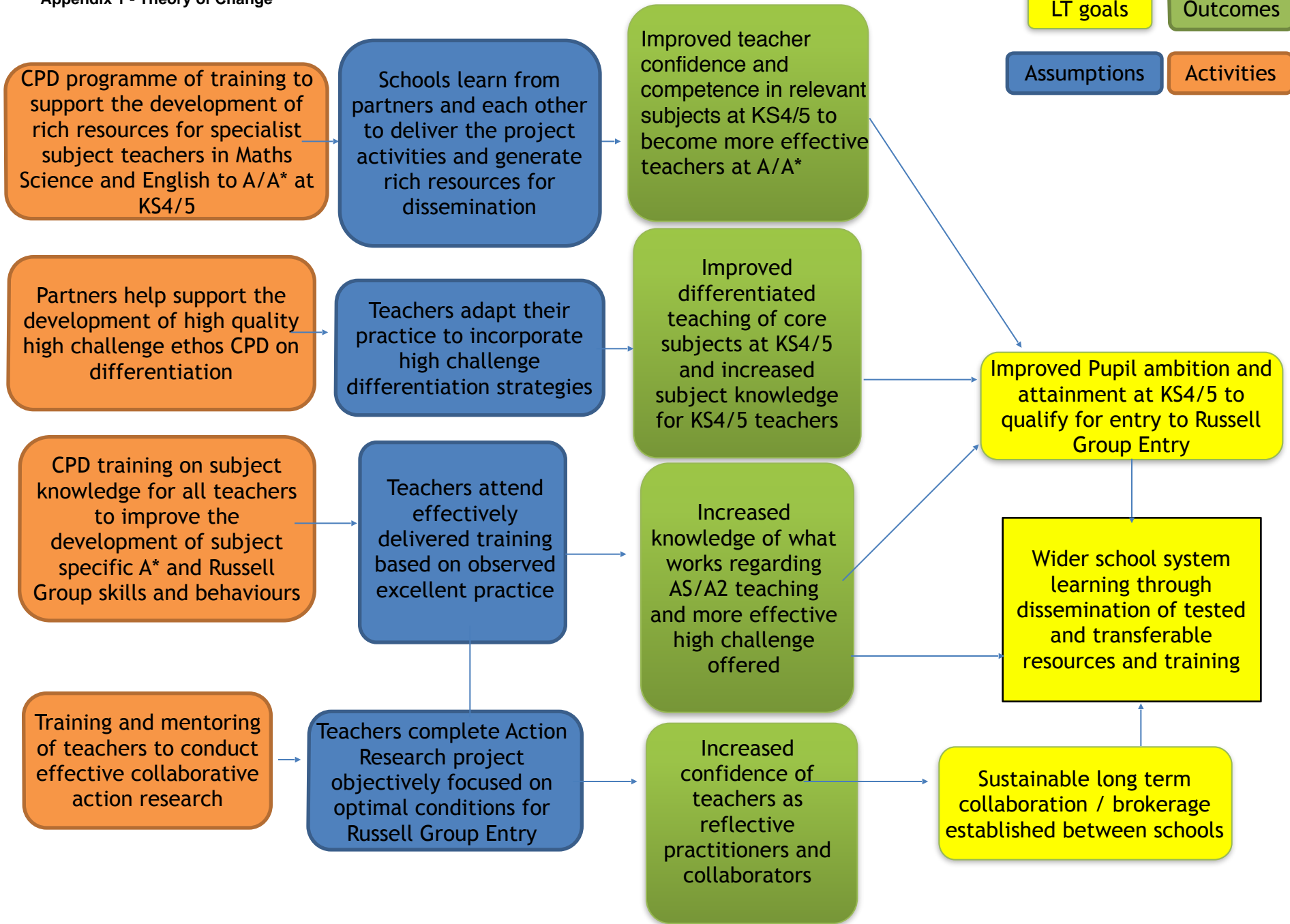
- *What should the project have done more of?*
  - Had there been more time, we would have increased the number of state-independent school teacher exchanges as these proved to be extremely valuable for empowering state school teachers and increasing their professional confidence and levels of expertise around high level challenge for academically-able students. In addition, the independent school teachers reported having learnt a lot from these CPD experiences in terms of learning about teaching to a broader range of abilities than they are accustomed to in their own schools.

- A longer testing and tracking period would have been beneficial for better assessing the impact of the KS4 and KS5 interventions – the short timescale of the whole project means it has proven difficult to know how far any changes were due to these interventions and/or a result of other intervening factors, e.g. school/individual pupil factors.
- *What should the project have done less of?*
  - Some costs could have been minimised by holding meetings and events at less expensive venues. However, those used were chosen based on being able to meet our requirements: in the main, our key considerations were room(s) being able to accommodate large group sizes; reliable IT facilities; central London location, which could be easily reached by all both independent and state school participants. Thus, although some of our own school settings were suitable in terms of room size and IT, location might have been problematic for some individuals (e.g. time required to travel to a state school in South-East London or to an independent school in Berkshire) and in turn this may have impacted on their willingness/ability to attend and be involved.
- *What recommendations would you have for other projects regarding scaling up and/or replicating your project?*
  - The establishment and maintenance of relationships is key – without these, the conduct of this project would have been extremely difficult and its relative achievements been significantly limited.
  - Careful consideration given to the number/types of demands made of participants.
  - Communication and openness – keeping participants informed about progress, developments, next steps – at teacher and school level – but, a balance needs to be struck between too much/not enough information and timeliness.
  - Being flexible and also pragmatic, being prepared to adapt and try different approaches – even different approaches to the same ‘end’ task.
  - As far as is possible, consider the timing of your activities (within the school calendar)/ also the timing for the launch of online networks/ when and where meetings and other events are held – all of these can and will impact on attendance and participation as teachers and schools need to prioritise (time away from school and students needs to be considered proportionately beneficial).
  - Being clear with schools about what a partnership commitment will broadly involve in terms of time/staffing implications, types of activities (some, even if not all) as all of this can assist with planning and expectations (although there is also a risk that this may limit what is/is not possible, e.g. there is less scope to be organic).
  - Having a Project Link person in each school – and maintaining good relationships with them – this type of institutional buy-in has proven to assist with liaison, organisation, permission for staff release, access to students etc. In addition, it means that you are less likely to need to re-negotiate access each time.
  - Schools being sufficiently briefed and committed to the purpose of the project.
  - Participants being sufficiently briefed and committed to the purpose of the project.
  - Providing participants with adequate training and support throughout.
  - Ensuring institutional and teacher-level buy-in – from heads, principals, senior staff.

Appendix 1 - Theory of Change

LT goals    Outcomes

Assumptions    Activities



## EVALUATION FRAMEWORK

Teacher Outcomes	Indicators of Outcomes	Baseline data collection (collected at the beginning of the intervention)	Impact data collection (collected after the intervention)
<p>Increased confidence and competence to improve the quality of learning at Key Stage 4 and Key Stage 5, to attain A/A*</p>	<p>Higher scores and increased positive responses in teacher confidence and competence survey. This survey explores teachers' ability to identify A/A* competencies for their subject; their levels of confidence and competence to build on these in their current context in order for pupils to qualify as Russell Group applicants; their perceptions of the key enablers and challenges to achieving these goals. The confidence and competence survey was designed by project partner, London Gifted and Talented, in consultation with the rest of the Steering Group and the Project Manager. The same survey will be administered to the same teachers during the post-intervention phase (post-Easter 2015).</p> <p>More effective teaching behaviours in observed lessons and the uptake</p>	<p>All teachers have been surveyed between late-March - mid-May 2014. This was administered at the earliest practicable opportunity closest to the beginning of the study.</p> <p>Notes from lesson research observations gathered in Phase 1 (Feb-Aug 2014). Lesson research data will be gathered by the teacher-researchers using an action research approach. The Project Manager will analyse the observation data at each stage and evaluate progress towards A/A*.</p>	<p>Teachers' survey results after conducting research and post-intervention phase.</p> <p>Same survey used for gathering the baseline data will be administered to same teachers post-Easter 2015.</p> <p>Evaluation of outcomes from the testing of interventions that are put in place in state schools as a result of the action research activities. This will be done by considering responses in the staff and student survey and by looking at the lesson research data gathered by teacher-researchers in the post-intervention phase.</p> <p>Impact data will be collected from lesson observations conducted by the teacher-researchers, using an action research approach. The observation process will be externally validated by the Steering</p>



	<p>of new resources. Over the lifetime of the study, each teacher-researcher will conduct four school-based research visits to gather lesson research data through observations of the teaching of their specialist subject. State school teachers will visit different independent schools, and, where practicable, the same arrangement will be organised for the independent school teachers when visiting state schools. All teacher-researchers have been asked to record notes on each lesson observed and to do so as objectively as possible. These observations will consider the pedagogy, resources, mechanisms and structures used to engage and stretch and challenge learners. To assist the researchers with this task, and to help focus their attentions, for each visit they are provided with project-specific research documents, designed by the Project Manager and members of the Steering Group. In addition, in February 2014, all participants (teacher and Project Links) were invited to a project launch event, which included a training session for the teachers to learn about the action research approaches being</p>		<p>Group, Project links and an HEI throughout in the intervention stage and as a summary towards the end of the project. This will inform the ongoing development of networks and the dissemination of outcomes.</p> <p>The Project Manager will analyse the observation data at each stage and evaluate progress towards A/A*.</p>
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	adopted for this study.		
Increased subject knowledge and confidence to prepare students for achieving A/A*	<p>Development of more effective subject specific approaches and resources as evidenced by higher scores and increased positive responses in teacher confidence and competence survey.</p> <p>Effective changes to teachers' practice for engaging and stretching and challenging their most able learners.</p> <p>As detailed above, data will be collected from lesson observations that consider the pedagogy, resources, mechanisms and structures used to engage and stretch and challenge learners.</p> <p>To assist the researchers with this task, and to help focus their attentions, for each visit they are provided with project-specific research documents, designed by the Project Manager and members of the Steering Group.</p> <p>The data gathered through this research activity will be used to assess the outcomes of the interventions being tested in state</p>		

	schools as a result of the action research activities.		
Increased knowledge of what works regarding AS/A2 teaching and more effective high challenge offered.		As above	As above
Increased confidence as reflective practitioners			
<b>Pupil Outcomes</b>	<b>Indicators of Outcomes</b>	<b>Baseline data collection</b>	<b>Impact data collection</b>
Increased academic confidence to achieve A/A* at KS4 and KS5	Increased scores in pupil confidence survey. Attitudinal survey has been completed by approx. 50 pupils in each KS5 institution (state and independent) in order to establish levels of academic confidence, contributing factors to the development of this confidence as well as how, or if, this relates to their current and future learning goals. The survey was developed by the Project Manager, in consultation with members of the Steering Group, and with reference to GL assessment's PASS survey, and to surveys developed by London Gifted and Talented and to a survey designed for an Edge Foundation research study.	Baseline data has been collected (May-June 2014) using a bespoke attitudinal survey.	Bespoke attitudinal survey used to collect baseline data will be repeated with same students in the post-intervention stage, post-Easter 2015.  Current data for the surveyed cohort in each state and independent school will be compared with historical data for 'matched' pupils (with regard to FSM, ethnicity, gender and GCSE scores on entry for A level) from the previous 5 years.
Increased percentage of pupils	Higher proportion of pupils	A Level and GCSE results in state	A Level and GCSE results in state

achieving A and A* both at A Level and GCSE in the state schools and colleges in 2015.	achieving A and A* at A Level and GCSE in the intervention state schools and colleges in 2015 relative to 2014 and 2013 and previous historical data in the intervention state schools and colleges.	schools and colleges from 2013, 2014 and previous historical data.	schools and colleges from 2015.  Comparison will be made with similar groups (with regard to FSM, ethnicity, gender and GCSE scores on entry for A Level) from previous cohorts.
Increased number of applications to Russell Group universities (this relates to pupils' raised aspirations and confidence to achieve sufficient UCAS points/grades to qualify as a Russell Group applicant)	Increased number of students applying to Russell Group universities in 2015 relative to 2014, 2013 and previous historical data.	A Level and GCSE results in state schools and colleges from 2013, 2014 and previous historical data.	A Level and GCSE results in state schools and colleges from 2015. Comparison will be made with similar groups (with regard to FSM, ethnicity, gender and GCSE scores on entry for A Level) with similar groups from previous cohorts.
Pupils will have access to a range of activities that enhance their learning in English, Maths and Science.	<p>Increased educational school and college activities.</p> <p>The first round of visits for collecting wider institutional strategic data gathered information on wider learning opportunities; teaching and learning; broader pedagogical strategies.</p> <p>In the subsequent round of visits, data has been collected on staff structures, management and leadership (workload/expected commitments; staff CPD/professional learning; performance management;</p>	During Phase 1 of the research (between Feb-June 2014), the majority of Project links across the participating schools and colleges have been involved in wider school research and gathering institution profile data (state visiting independent, and vice versa). Outstanding visits to be made early in Autumn term 2014.	Wider institutional strategic data will be collected at all stages: observation stage, planning stage, intervention stage and evaluation stage. This data will inform the development of research instruments/interventions for each subsequent stage.

	meetings, calendar and programme; posts of responsibility/management; ISI process; teaching and learning; developing independent learning; the development of literacy) and on pastoral structures and approaches (tutorial time and programme; transition and progression processes).		
<b>School System/'Culture Change' Outcomes</b>	<b>Indicators of Outcomes</b>	<b>Baseline data collection</b>	<b>Impact data collection</b>
State schools have developed an understanding of the strategic approaches taken in independent schools that bring about high academic achievement.	<p>Change in 'values' amongst those teachers engaging in action research as evidenced by higher scores and increased positive responses in teacher survey.</p> <p>Changes made to institutional strategic provision of support, activities and opportunities to bring about high academic achievement.</p> <p>The first round of visits for collecting wider institutional strategic data gathered information on administrative aspects; wider learning opportunities; student focus; teaching and learning; broader pedagogical strategies; quality assurance processes and</p>	<p>The teacher confidence and competence survey outlined above has been used to obtain baseline data for evaluating this outcome.</p> <p>During Phase 1 of the research (between Feb-June 2014), the majority of Project links across the participating schools and colleges have been involved in wider school research visits and gathering institution profile data (state visiting independent, and vice versa). Outstanding visits to be made early in Autumn term 2014.</p>	<p>Teacher survey used to collect baseline data will be repeated with same teachers in the post-intervention stage, post-Easter 2015.</p> <p>Wider institutional strategic data will be collected at all stages: observation stage, planning stage, intervention stage and evaluation stage. This data will inform the development of research instruments/interventions for each subsequent stage.</p>

	<p>staffing.</p> <p>In the subsequent round of visits, data has been collected on staff structures, management and leadership (workload/expected commitments; staff CPD/professional learning; performance management; posts of responsibility/management; teaching and learning; developing independent learning; the development of literacy) and on pastoral structures and approaches (tutorial time and programme; transition and progression processes).</p> <p>Self-learning becoming embedded in teachers' self-learning: observe, reflect, plan and act (and this becoming part of school policy – as evident in any amendments to approaches with regards CPD) as evidenced by increased positive reflection comments and thoughts made in lesson observation notes. To assist the teacher-researchers with this task, and to help focus their attentions, for each visit they are provided with project-specific research documents, designed by the Project Manager and members</p>	<ul style="list-style-type: none"> <li>▪ As detailed above, over the lifetime of the study, each teacher-researcher will</li> </ul>	<p>As detailed above, wider institutional strategic data is being collected at all stages. In the post-intervention phase, data will continue to be gathered to consider the extent to which self-learning has become an integral feature of school CPD approaches.</p>
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	<p>of the Steering Group. Each of these documents includes a section that invites them to note any reflections and/or additional thoughts on the lesson just observed (prompts provided are: thoughts on any practice observed in this lesson, which would be useful for my own teaching; thoughts on any practice observed in this lesson, which would be beneficial for further 'stretching' my most able students; thoughts on what stood out in this lesson and why; similarities between pedagogy observed today and my own pedagogical approach; any other thoughts, ideas, comments...)</p>	<p>conduct four school-based research visits to gather lesson research data through observations of the teaching of their specialist subject. Reflections and additional comments made in Phase 1 of the research (Feb-Aug 2014) will serve as baseline data for assessing this outcome.</p> <ul style="list-style-type: none"> <li>▪ Baseline data has been gathered during Phase 1 of the research (between Feb-June 2014), where the majority of Project links across the participating schools and colleges have been involved in wider school research visits and gathering institution profile data (state visiting independent, and vice versa). Outstanding visits to be made early in Autumn term 2014.</li> </ul>	
<p>State school teachers have developed an understanding of the knowledge-led, content-rich curriculum for their subject</p>	<p>Adaptation in teachers' thinking and practices as seen in lesson observations (detailed above)</p> <p>Increased engagement with CPD programmes and activities as evidenced by positive quantitative differences between baseline data and subsequent data gathered from state schools and colleges regarding staff CPD/professional learning in the staff competence and confidence survey</p>		

	<p>Increased number of teachers who are trained to act as 'lead' subject teachers/partners through cascading training/support.</p>		<ul style="list-style-type: none"> <li>▪ Reflection and additional comments' data will be collected from lesson observations notes made by the teacher-researchers, using an action research approach.</li> <li>▪ Data will be collected at all stages: observation stage, planning stage, intervention stage and evaluation stage.</li> <li>▪ Wider institutional strategic data will be collected at all stages: observation stage, planning stage, intervention stage and evaluation stage. This will enable comparisons to be made between baseline data and subsequent data gathered.</li> </ul>
Increased expertise in delivering	Increased number of teachers	The teacher confidence and	Teacher survey used to collect



<p>teaching and learning programmes that enthuse and engage all learners.</p>	<p>(within and outside of the project) who are able to develop more effective and engaging learning approaches and strategies, which include all learners as evidenced by positive differences in the qualitative and quantitative data returned in baseline staff surveys and data returned when repeated in the post-intervention phase (post-Easter 2015).</p> <p>Changes in teachers' practice as noted in lesson observations.</p>	<p>competence survey outlined above has been used to obtain baseline data for evaluating this outcome.</p> <p>As detailed above, over the lifetime of the study, each teacher-researcher will conduct four school-based research visits to gather lesson research data through observations of the teaching of their specialist subject.</p>	<p>baseline data will be repeated with same teachers in the post-intervention stage, post-Easter 2015.</p> <p>Data will be collected from lesson observations conducted by the teacher-researchers, using an action research approach. These will take place at all stages: observation stage, planning stage, intervention stage and evaluation stage. Data recorded at the observation stage will be compared with subsequent data to consider the success of this intended outcome.</p>
<p>Skill in delivering differentiated learning practices and programmes so that more able learners achieve top grades. It is anticipated that initially this will be a teacher outcome, subsequently becoming a school-wide outcome through peer teaching/in-house upskilling.</p>	<p>Increased number of teachers (within the project) able to improve their approach to devising differentiated learning programmes for the most academically-able students in their class as evidenced by positive differences in the qualitative and quantitative data returned in baseline staff surveys with regard to confidence to teach to A* and A in mixed ability classes and data returned when repeated in the post-intervention phase (post-Easter 2015).</p>	<p>The teacher confidence and competence survey outlined above has been used to obtain baseline data for evaluating this outcome.</p>	<p>Teacher survey used to collect baseline data will be repeated with same teachers in the post-intervention stage, post-Easter 2015.</p>
<p>Enhancement of teachers' ability to articulate their learning and share</p>	<p>Increased participation in dissemination activities.</p>	<p>Ongoing survey of use of subject-specific networks. These were</p>	<p>Impact data will be collected on an ongoing basis, throughout school</p>

<p>their practice with others.</p>	<p>Teachers' involvement in, and their use of, subject-specific networks.</p> <p>Positive reflection comments and thoughts made in lesson observation notes.</p> <p>Attendance at, active participation in, and engagement with, organised project Reflection and Sharing Days.</p>	<p>launched with teachers at the Reflection and Sharing Day event held in early June 2014.</p> <p>As detailed above, over the lifetime of the study, each teacher-researcher will conduct four school-based research visits to gather lesson research data through observations of the teaching of their specialist subject. Reflections and additional comments made in Phase 1 of the research (Feb-Aug 2014) will serve as baseline data for assessing this outcome.</p> <p>Action research methods and teachers' confidence as reflective practitioners to be reviewed at first Reflection and Sharing Day in early June 2014.</p>	<p>year 2014/2015.</p> <p>Attendance and participation in Reflection and Sharing Days.</p> <p>Reflection and additional comments' data will be collected from lesson observations notes made by the teacher-researchers, using an action research approach.</p> <p>The effectiveness of the training and mentoring will be assessed by analysing data gathered from each research visit. This training and mentoring is being provided on an ongoing basis throughout the project. This is happening in a range of ways including face-to-face sessions with the Project Manager and members of the Steering Group; the creation and provision of supporting documentation for teachers to use as a guide for each research visit, as well as constant and open communication with the Project Manager with regards any questions, concerns or other feedback. In addition, during the project Reflection and Sharing day held in June 2014, all teacher-researchers were trained by Google</p>
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			<p>consultants to use a range of chosen apps in preparation for the testing of the subject networks in 2014/2015.</p> <p>In addition, this will be reviewed again at the second Reflection and Sharing Day to be held post-Easter 2015.</p>
<p>Establishment of a sustainable long-term collaboration/brokerage between state and independent schools.</p>	<p>Development of an online platform, which will enable sharing of interesting practice, resources, videos of different subject lessons being taught – a resource which will remain beyond the life of the project, which can be made available on a larger-scale basis (across London; potentially nationally also). The content and shape of this platform for supporting highly able students to achieve the top grades necessary for Russell Group entry in the 5 subject areas will be informed by information provided in initial teacher confidence and competence surveys and data gathered from the wider school research visits conducted in Phase 1 (late Feb-June 2014).</p>		<p>Impact in terms of usage and feedback on the resources will be assessed by the project following the implementation of interventions in Phase 2, and by the brokerage in the longer-term. The number of hits, downloads and usage of the online platform will be measured in order to inform this review of impact.</p>

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