

RCUK PUBLIC ENGAGEMENT WITH RESEARCH:
SCHOOL-UNIVERSITY PARTNERSHIPS INITIATIVE (SUPI)

YEAR 4 ANNUAL REPORT

(COVERING THE PERIOD 1 JAN 2016 TO 31 DEC 2016)

ENGAGING OPPORTUNITIES:

**A PARTNERSHIP BETWEEN THE OPEN
UNIVERSITY AND THE DENBIGH TEACHING
SCHOOL ALLIANCE**

Names of contributors to this report:

Richard Holliman¹; Gareth Davies¹; Anthony Steed²; Victoria Pearson¹; Diane Ford¹; Janet Sumner¹, Kris Stutchbury¹; Clare Lee¹; Helen Brown²; Trevor Collins¹; Joe Kendall³; Penny Green⁴; Andy Squires²; Nick Braithwaite¹

1. The Open University; 2. Denbigh School; 3. Oakgrove School; 4. Lord Grey School



[Communicating the Engaging Opportunities SUPI Partnership.](#)
Photo: Mark Russell

1: PROGRESS AGAINST YOUR SUPI OBJECTIVES

a) Please provide a summary of progress against your SUPI project objectives this year

The core objectives for the extension of funding for our SUPI partnership between the Open University (OU) and the Denbigh Teaching School Alliance (DTSA) remained the same as for the first three years of the project: we wanted to sustain and extend a culture of reflective practice around school-university engagement with research in Milton Keynes; and to embed school-university engagement with research within the OU's and DTSA's strategic planning on a sustainable basis.



SUPI Media Training, December 2016: l-r, Pippa Jennings (Teacher), Year 12 Students from Denbigh School, Gerard Giorgi-Coll (Editor), Dr Janet Sumner (Executive Producer) and Kerry Reid (Assistant Producer and Postgraduate Research Student).

In relation to these core objectives, we continued to use our flexible and adaptable framework of four types of activity. In Year 4 (Jan-Dec 2016), we have worked with 11 schools to directly engage at least 1789 people, almost exclusively (more than 94%) involving school students and teachers, but also OU researchers, parents and other interested publics. Added to our Years 1-3 figure (4788), we have directly engaged 6577 people from Milton Keynes with OU research and researchers over the four years of the project.

Further, in Year 4 we agreed to place a greater emphasis on consolidating and sharing the learning gained from collaborative working across the OU, SUPI network and wider HE sector. Examples of our work in this area are listed below.

Strategic interventions within the Open University

- We have developed a draft Memorandum of Understanding between the Open University and the Denbigh Teaching School Alliance (see below for further discussion).

- We have developed a draft Strategy of Engaged Research in the Faculty of Science, Technology, Engineering and Mathematics, incorporating school-university engagement with research. This draft strategy has been shared with other academic units at the OU.
- Members of the SUPI team have contributed to discussions of a draft Strategy for Public Engagement for the School of Physical Sciences, incorporating school-university engagement with research.

Strategic interventions outside the Open University

- Professor Holliman is a member of the External Advisory Board for a new journal—*Research for All: Universities and Society* (<http://www.ingentaconnect.com/content/ioep/rfa>). School-university engagement with research is within the scope of this journal. Dr Collins is an Associate Editor for the same journal.
- Professor Holliman contributed to an STFC Working Group for a project exploring the attitudes, culture and ethos of physical science researchers in relation to public engagement, incorporating school-university engagement with research. For further details, and a link to the full report, see: [Give PEACE a chance](#).
- Professor Holliman has been co-opted as a member of STFC’s Advisory Panel on Public Engagement.
- Professor Holliman acted as a judge for the 2016 National Engage Competition (assessing applications in school-university engagement with research category), and for Cambridge University’s Public Engagement with Research Award Scheme.
- Professor Holliman made a research visit to the University of Otago, New Zealand where he discussed their embedded and strategic approach to school-university engagement with research through their [Advance School Sciences Academy](#).

Consolidating and sharing our learning

In Year 4, we have collaboratively produced a range of outputs from our SUPI, including:

- Holliman, R., Davies, G., Pearson, V., Collins, T., Sheridan, S., Brown, H., Hallam, J. and Russell, M. (2017, in press). “Planning for engaged research: a collaborative Labcast”, in Kucirkova, N. and Oliver Quinlan, O. (eds.) *The Digitally Agile Researcher*. Open University Press, Maidenhead.
Available as an ‘in press’ draft from: <http://www.open.ac.uk/blogs/per/?p=7348>
- Holliman, R. and Warren, C.J. (2017). “Supporting future scholars of engaged research”. *Research for All: Universities and Society*, 1(1), pp. 168-184. Available from: <https://doi.org/10.18546/RFA.01.1.14>
- Collins, T., Pearson, V., Davies, G., Sheridan, S., Holliman, R., Brown, H., Russell, M., Hallam, J. and Steed, A. (2016). “Using Live Video Conferencing to Enable Authentic School-University Engagement”. Presentation at Science in Public, 2016; University of Kent, Canterbury, 13-16 July.
For details, see: <https://scienceinpublicnetwork.files.wordpress.com/2016/07/abstracts-to-print.pdf>
- Collins, T., Bryan, S., Cripps, E., Davies, G., Houghton, A., Russell, M., Spurrell, J. & Taylor, J. (2016). “The Dragon’s Den of School Partnership Sustainability”. NCCPE Engage: Inspiring Innovation, Bristol, 29-30 November. For details, see: <https://www.publicengagement.ac.uk/work-with-us/engage-conference/engage-2016>
- Collins, T., Pearson, V., Davies, G., Sheridan, S., Holliman, R., Brown, H., Russell, M. and Hallam, J. (2016). “Labcasts: Bringing cutting edge science into the classroom”. Poster presented in the 14th International Public Communication of Science and Technology Conference: ‘Science communication in a digital age’; Istanbul, Turkey, 26-28 April.
- We have continued to commission posts about our SUPI for the Engaging Research blog. In 2016 six posts were published on the Engaging Research blog (For details, see: <http://www.open.ac.uk/blogs/per/?cat=48>). A further SUPI-related post was published on the Digitally Agile Research blog: <http://www.digitallyagile.com/?p=130>.
- We worked with students and teachers from Denbigh, Oakgrove and Lord Grey Schools, respectively, to produce two films about the Extended Project Qualification: ‘Is the Extended Project Qualification for you?’ <https://youtu.be/H5IQLUuyCks>; and ‘Is it a bug’s life on Mars?’ <https://youtu.be/jv3lnFGzJ1w>. These videos are hosted online under Creative Commons licenses, and are therefore freely available (subject to the conditions that licence) for re-use by RCUK, the NCCPE and other SUPIs. For further details, see our ‘publishable case studies’.

New activities for 2017

Among a number of our previous activities, we have continued our work with the Enigma Maths Hub (see one of our 'publishable case studies'). In addition, we have worked in Year 4 to deliver the following projects in 2017 & beyond.

- Engaging Environmental Researchers: Developing Productive Partnerships with End-Users. Funded by a Natural Environment Research Council Innovation Award; NE/L002493/1. OU awarded £50,000. Holliman is co-Investigator on these training workshops, which will be delivered to 30 postgraduate researchers.
- Managing My Money: Youth. Through this project, funded by a philanthropic donation, the Open University Business School's Centre for the Public Understanding of Finance is working with students and teachers at Denbigh School to develop accessible, relevant and free personal finance education to 16-18 year olds within and outside the school environment.
- Open Justice Project: The OU's Law School is currently developing a new pro bono initiative called Open Justice. It aims to provide OU law students and DTSA pupils with the opportunity to engage in pro bono activities, comprising an online legal advice clinic and the delivery of public legal education projects.
- Professors Holliman and Scanlon (with Professor Jane Seale) have taken on a postgraduate research student whose project explores engagement in the context of young people who have special needs.

Examples of submitted proposals

- Dr Trevor Collins has led the development of a proposal to the [Royal Academy of Engineering Ingenious Programme](#). If funded the Open University (including Dr Gareth Davies and Professor Holliman) and the Association for Science Education (ASE) will provide training and support for professional engineers to work in partnership with pupils and teachers at Silverstone University Technical College. Together, we will co-produce a collection of online video-based resource packs for schools depicting six engineering career types.
- Professor Holliman is a Work Package Lead on a proposal submitted to the [EU's Horizon 2020 Programme](#). The project seeks to co-create an adaptable, transferable and scalable process by which nanotechnology policy is shaped by collaborative partners in society as well as industry and academia. Holliman's role is to develop mechanisms for inclusivity and diversity in how publics are summoned to participate in processes of anticipatory governance. Key to this is understanding when young people become citizens and should have a voice in these processes. He will explore these issues through school-university engagement with research.

Further to these examples we have worked with a number of OU researchers in developing Pathways to Impact plans that incorporate aspects of school-university engagement with research.

b) Please provide a brief strategic perspective on what this progress indicates about how your SUPI project this year has achieved the ambitions that were set at the start.

In our Year 4 Business Case we acknowledged the need for a greater emphasis on processes of embedding, sustainability, and training in our Business Case for Year 4 funding. Two work streams have focussed on these goals:

- The development of a structured and sustainable mechanism for continuing the work of our SUPI beyond December 2016. For examples of this work, see the 'Strategic interventions within the OU' (Section 1a);
- Support for the Extended Project Qualification (EPQ) in six schools across Milton Keynes, incorporating training provision for postgraduate and early career researchers to include the EPQ. This is discussed in more detail in one of our 'publishable case studies'; see also the Engaging Environmental Researchers training listed above. Further, one of our aims for our EPQ work was also to develop digital infrastructure and a methodology, supported by relevant resources, to embed this activity in a sustainable way within the OU and across the DTSA. It became apparent through negotiations with teachers that digital infrastructure was not considered to be a priority. In short, EPQ teachers felt that they had sufficient content and resources, not least once OU researchers had demonstrated some of the existing open access digital infrastructure provided by the Open University. What teachers wanted was resources to help familiarise potential EPQ students with the processes of research. To this end, we made the EPQ the focus of our final, week-long media training workshop; see the two videos listed above. Further, teachers continue to require direct engagement between researchers and EPQ students in the

classroom, for example: to support aspects of research design; structured and strategic approaches to accessing relevant and credible information; critical analysis of sources; and communicating findings from research. These issues are addressed in more detail in one of our ‘publishable case studies’.

2: KEY HIGHLIGHTS AND LEARNING POINTS

a) Over the past year, what have been key highlights for your SUPI?

Our key highlights have involved activities (see below), and the strategic activities listed in Section 1a. We have also shared learning from the Engaging Opportunities project, for example, through two collaboratively-authored papers, presentations and posters at conferences, and a workshop at the NCCPE’s Engage Conference (see Section 1a for details of these outputs).

Extended Project Qualification: Collaborative working involving teachers and researchers has allowed us to identify complementary needs. We found, for example, that Heads of Sixth Form were looking for additional support for Key Stage 5 pupils undertaking research through the Extended Project Qualification (EPQ).

We have addressed these complementary needs by working together to provide supplementary support for the EPQ to students from six schools in Milton Keynes in Year 4. In so doing, we have worked closely with a number of teachers, notably Joe Kendall (Oakgrove School), Penny Green (Lord Grey School) and Damien Sharp (St. Paul’s Catholic School), whilst supporting hundreds of students as they explore the research cycle, developing, investigating and reporting the findings from their studies. For more details, see [Empowering lifelong citizenship](#) and one of our ‘publishable case studies’.



Denbigh School Media Students interviewing EPQ students from Lord Grey School.
Credit: Richard Holliman

Water Rocket Competition: In July 2016 seven teams of Year 9 students from five local schools across Milton Keynes battled it out in an attempt to win the fourth annual Water Rocket Competition. Inspired by the OU/BBC co-production *Rough Science*, each team of six students was provided with the same kit.

The students adapted their designs incrementally based on data collected from each test launch. From this they were asked to design and build two water rockets, one to fly the furthest horizontal distance, the other to hit a target.



Dr Vic Pearson (The Open University) and Dr Leanne Gunn (Science Made Simple) assist the students with the launchers. Credit: Gareth Davies.

The teams were guided by local teachers and Open University researchers, including two postgraduate researchers from the School of Physical Sciences: Alice Dunford and Matthew Lewis. For more details, see: [Milton Keynes students are out of this world](#).

STEM Matters Lectures: In December we organised a series of four Open University school lectures delivered by researchers working in the newly-minted Faculty of Science, Technology, Engineering and Mathematics.

We followed our previous formula putting together a programme of lectures that illustrated different aspects of science, technology, engineering and mathematics.



The 2016 lecturing team: l-r Professor Uwe Grimm, Eleni Wood, Dr Karen Olsson-Francis, Dr Trevor Collins and Professor Richard Holliman. Photo: Kate Bradshaw.

In selecting the lecturers we wanted to illustrate diversity in disciplinary backgrounds and the ways that STEM researchers conduct their work. Hence, we invited talks from experts in geometry, microbiology, geology and educational technology. Similarly, we wanted to demonstrate different types of career where scientific training plays a central role, involving research, teaching, communication and engagement. And finally, we wanted to illustrate the different stages in a scientific career (from postgraduate research through to Professorial grade), and that these choices were equally open to women and men. Details of the talks and links to the lectures are here: [2016 STEM Matters School-University Lectures](#).

Planning for a principled approach to school-university engagement with research: Effective planning for school-university engagement with research is essential to the success of any subsequent activity.

Through work on the OU's RCUK-funded Public Engagement with Research Catalyst we identified six dimensions—preparedness; politics; people; purposes; processes; and performance—that those involved in the planning for engaged research should take account of when planning activities.

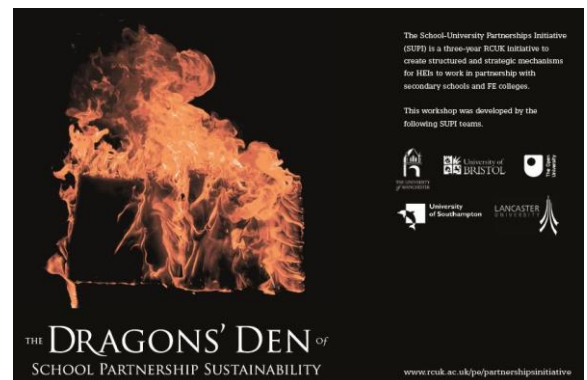


The six dimensions involved in planning for school-university engagement with research (Holliman *et al.*, in press).

In a jointly-authored contribution to a forthcoming edited collection called *The Digitally Agile Researcher* we draw on an example from the Engaging Opportunities SUPI where we applied the six dimension to develop, deliver and evaluate a 'Labcast' for sixth-form students at Denbigh School in Milton Keynes. For more details, see: [Planning for a principled approach to engaged research](#).

Engage 2016: Trevor Collins (OU) led a collaboratively-delivered workshop at the NCCPE Engage Conference. Involving five of the 12 SUPIs, and graphic design expertise at the Open University (Peter Devine), the workshop explored issues of sustainability in relation to school-university partnership working.

The workshop invited delegates to judge four pitches for sustainability from SUPI representatives based on the popular BBC's *Dragons' Den* format. Delegates worked in small groups to discuss the benefits of each initiative, identifying three things they really liked, making four suggestions for improvements, and selecting the pitch they thought had the best chance of sustaining beyond the current funding. The winning pitch was deemed to have a clear focus based on an existing need with a low overhead and cost of delivery. For further details and reflections, see: <http://www.open.ac.uk/blogs/per/?p=7364>



The Dragons' Den of School-University Partnership Sustainability. Credit: Peter Devine and Dr Trevor Collins.

Enigma Maths Hub—promoting resilience: During the academic year 2015-16, Dr Clare Lee, an expert from the Open University in Mathematics resilience, worked with a group of 22 teachers from 12 different schools (primary and secondary) across the [Enigma Maths Hub](#).

The purpose of the programme was to support teachers in applying some of the ideas from research about Maths resilience to their practice and therefore to improve the classroom experiences of children learning Maths.



b) What have been the most important learning points?

A key focus of our work in Year 4 has been to identify strategic arguments for sustaining our SUPI work beyond 2016. To this end, the joint discussions around sustainability that were coordinated by the NCCPE at the SUPI-wide meeting in July 2016 were helpful and enlightening. It would appear that the challenges we face at the Open University are not dissimilar to those faced by other universities within the SUPI network.

The biggest challenge we face that is distinctive to the OU is our core demographic for Widening Participation (WP). Unlike other SUPI universities the OU does not recruit many school leavers. It follows that linking school-university engagement with research to the OU's teaching strategy through WP as an argument for sustaining our SUPI carries much less weight than it might do in other UK universities.

We note, however, one key exception, which is the School of Physical Sciences (SPS). The SPS draft Strategy for Public Engagement is largely justified through arguments about widening participation. In contributing to this strategy, to the STFC PEACE Working Group (see Section 1a), and through the expertise of SUPI co-investigator Dr Vic Pearson (who also chairs the Chair of the Equality and Diversity team in SPS, successfully leading the [Athena Swan submission for a Silver Award and Juno Champion](#) status in 2016), we argue that this emphasis on WP in SPS may be due to long-standing concerns about: 1.) the uptake of qualifications in the physical sciences; and 2.) specific issues about girls and women studying the physical sciences at tertiary level. The result, however, is that [school-university "outreach"](#) (i.e., not direct engagement with research) is embedded in SPS, e.g. through *teaching and learning* initiatives with the [Ogden Trust](#) and membership of [SEPnet](#).

Given some of the challenges we have faced in making strategic arguments for sustainability, we are pleased to note that we have made some progress in developing a draft strategy in the Faculty of STEM, and an associated draft Memorandum of Understanding (see Section 1a). Our current focus is on connecting the strategic case and operational requirements of continuing our SUPI work with the OU's new Academic Strategy. This work will continue in 2017 as we make connections with new senior appointments in the OU's Research and Academic Strategy Unit.

3: CHALLENGES AND RISKS

Over the past year, what have been the biggest challenges for your SUPI?

Notwithstanding positive progress made in Year 4, our biggest challenge continues to involve securing sustainability for our SUPI work in a structured and strategic manner. In Year 4 we have worked to embed the aims of SUPI at a strategic level, a challenge being undertaken in particularly difficult circumstances within the university as we continue to undergo unprecedented change in how we operate our core business of distance learning for undergraduates. In Year 4 these changes focused on the restructuring on academic units. In 2017 the OU will undergo a wide ranging review and redesign of all areas of activity. The current context provides challenges, but also offers opportunities. As a result of this wider context, and recent changes, we are working to establish working relationships with members of senior staff with responsibility for research, several of whom are new to the Open University. We will continue this work in 2017, in particular working to connect our SUPI with the new Academic Strategy at the OU and its commitment to 'external engagement', and with preparations for REF 2021.

4: FORWARD PLANS AND LEGACY

a) What are the final plans for sustainability/legacy for your SUPI, post-project completion?

Our main vehicle for addressing issues of sustainability continues to involve a Memorandum of Understanding (MoU). The development of this draft document followed discussions at the Denbigh Teaching School Alliance Strategy Board and with the Acting Executive Dean in the Faculty of STEM at the Open University. The MoU, which is in draft form (relevant extracts are available from the following location; <http://www.open.ac.uk/blogs/per/?p=7358>), outlines baseline activity for a sustainable school-university partnership with schools in Milton Keynes. Further to this, we have already made plans to introduce several new SUPI-inspired activities in 2017 (see Section 1a for details), several of which have been externally funded, and we have other proposals under review.

We will continue to commission and publicise posts about school-university engagement with research on the Engaging Research blog, and we have made plans for our final SUPI report to be professionally designed.

We have made plans for the 2017 Denbigh STEM Lecture Programme and St. Paul's Catholic School Public Understanding of Science Programme, respectively (up to July 2017), and we have secured all the materials to run the Annual Water Rocket activity for a further three years. Work is also ongoing in six local schools across Milton Keynes

in support of EPQ students and teachers, through the Enigma Maths Hub, and we have introduced a number of new activities (see Section 1a).

b) What are the biggest risks for sustainability/legacy for your SUPI post-project completion?

As noted earlier in our report the Open University is undergoing significant changes in response to the effects of recent government policies for Higher Education. These changes are ongoing, and the effects of them are not completely predictable at this stage. The following key risk can be identified, however. Our efforts to sustain the work of our SUPI have focused on the benefits this work brings to OU researchers and research. The biggest risk for sustainability/legacy for our SUPI is that the Open University ceases to be a research-intensive university. Reduction in funding for research would be likely to result in a refocussing on resources in other areas of core activity, e.g. teaching. Given the argument proposed in Section 2b, i.e. that linking sustainability for our SUPI to the OU's teaching strategy through WP carries much less weight than in other UK universities, we would need to identify other strategic objectives for prioritising this work.

5: PROJECT SPEND

Please provide details of any significant deviation of spend profile in year 4, if relevant, and how you propose to address this as part of project completion.

We included funds for a developer in our Year 4 Business Case. As noted above, teachers argued that online resources and infrastructure was not considered to be as important as face-to-face interventions (supported by existing digital infrastructure). These funds were therefore re-allocated to Dr Trevor Collins, extending his role on the project until 31 December 2017.

Our Year 4 Business Case included funds to employ our evaluation research, Dr Gareth Davies, full-time for six months (Jan-Jun). Dr Davies secured another contract of employment during this period at the OU. We were able to negotiate a job share with that other project. As a result, Dr Davies worked part-time of the SUPI in Year 4, up to 31 December 2016.

6: COMMENTS TO RCUK AND NCCPE AND ANY HELP REQUIRED

We are grateful to the RCUK and NCCPE teams, respectively, for their support in Year 4 of the project. Of particular note, we would like to thank them for the letter sent to the Open University's Vice-Chancellor. The letter was well received by key stakeholders in the partnership, notably senior staff at Denbigh School and Open University research leaders. It also resulted in an invitation to discuss the OU/DTSA SUPI with senior research leaders at the OU. This meeting provided us with an opportunity to discuss how our SUPI could connect with the OU's new Academic Strategy through discussions with senior staff with responsibility for research.

We welcome any additional advice and suggestions in relation to arguments that could be made to ensure that ongoing SUPI work matches the strategic objectives of the Open University and local schools in Milton Keynes.

We would also welcome further advice and guidance on how RCUK and the NCCPE plan to share learning across the HE sector from the SUPI network of projects. For example, are there any plans to coordinate publicity across the SUPIs when the final reports are published?

One of the ongoing challenges we have faced when discussing the planning for Pathways to Impact with OU researchers is the degree to which school-university engagement with research is regarded by Research Councils as a valid activity with the same level of priority as other potential pathways. With the changes in the governance of the Research Councils can you advise the SUPIs on whether and how school-university engagement with research could be prioritised in a consistent manner within advice and guidance to researchers applying to UKRI for public funding?

7: OTHER THOUGHTS OR COMMENTS

Not applicable.

Case Study 1: Supporting students on the Extended Project Qualification

Richard Holliman¹; Joe Kendall²; Penny Green³; Damien Sharp⁴; Gareth Davies¹; Trevor Collins¹; Victoria Pearson¹; Karen Olsson-Francis¹; Warren Chinwadzimba³; Janet Sumner¹; Gerard Giorgi-Coll; Kerry Reid¹; Anthony Steed⁵; and Pippa Jennings⁵.

1. The Open University; 2. Oakgrove School; 3. Lord Grey School; 4. St. Paul's Catholic School; 5. Denbigh School.

Working collaboratively in Year 3 of our SUPI allowed the OU and DTSA to identify complementary needs.

Heads of Sixth Form, for example, were looking for additional support for KS5 pupils undertaking

research through the Extended Project Qualification (EPQ), an optional AS Level where students can either: 1.) produce a literature review; 2.) conduct empirical research; or 3.) produce an artefact with a supporting statement. In our experience, most EPQ students in Milton Keynes produce a literature review of a topic of their choice.

A different but complementary need was identified through work involving the OU and an educational charity called The Brilliant Club, i.e. that OU postgraduate researchers actively seek opportunities for training in teaching and learning.

We addressed these needs in Year 3 by organising initial interventions with EPQ teachers, involving six schools, OU researchers, and member of the OU Library Team. In Year 4 we sought to consolidate this early work through consultations with teachers and Open University researchers.¹ We offered workshops where teachers from two schools in Milton Keynes worked with OU researchers to deliver training to other OU researchers, and to collect ideas and suggestions for how the EPQ could best be supported in the future. We also discussed support for the EPQ with teachers at after school 'TeachMeet' sessions organised by Denbigh School. What has become clear from these discussions is that schools have different strategies for organising the EPQ: students are selected to study for the EPQ using a range of criteria; strategies vary in how and when lessons are scheduled. Nevertheless, generic ideas were identified and have been used to shape Year 4 support for the EPQ.

As an example, teachers asked us not to provide additional resources and infrastructure to support EPQ students. In short, they argued that what they required was:

- Resources describing the EPQ process to prospective EPQ students. Two films were produced by students from Denbigh School, featuring EPQ students from Oakgrove and Lord Grey Schools, respectively: 1) [Is the EPQ for you?](#); and 2.) [Is it a bug's life on Mars?](#)
- Provide support for Open University open access sites where research is hosted, e.g. [CORE](#), [ORO](#) and [OpenLearn](#).
- Offer direct engagement in the classroom, providing generic support and bespoke advice. In Year 4 Open University researchers supported teachers and KS5 students in six schools as they studied for the EPQ. Pupils gained skills from directed support as they framed their research design, planned data collection and operationalised their projects, collecting and analysing data, and interpreting and reporting their findings.



Denbigh School student Mudathir Hassan interviewing Lord Grey School teacher Penny Green about the Extended Project Qualification. Credit: Richard Holliman



Denbigh School students interviewing Dr Karen Olsson-Francis about the Extended Project Qualification at The Open University. Credit: Richard Holliman

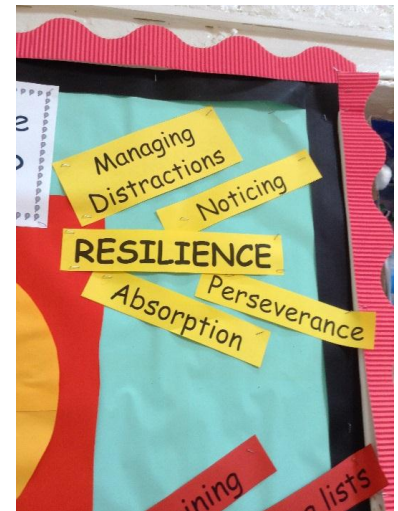
¹ Financial cut-backs meant OU Library Staff had to withdraw during Year 4, but they provided worksheets for OU researchers to use with students in class.

Case Study 2: Math Hub Case Study

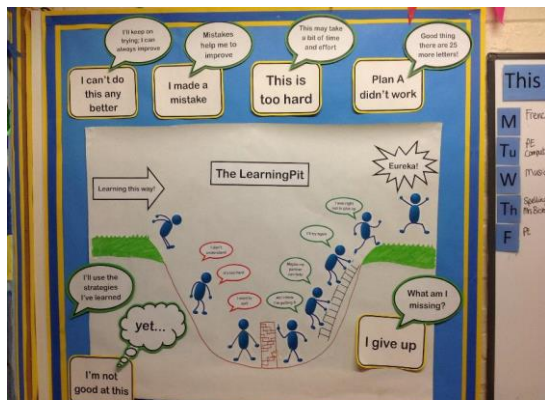
During the academic year 2015-16, Dr Clare Lee, an expert from the Open University in Mathematics resilience, worked with a group of 22 teachers from 12 different schools (primary and secondary) across the [Enigma Maths Hub](#).

The purpose of the programme was to support teachers in applying some of the ideas from research about Maths resilience to their practice and therefore to improve the classroom experiences of children learning Maths. As Clare puts it:

“...teachers took part in a year-long action research project to introduce mathematical resilience into their classrooms. The teachers worked in pairs in their schools supporting and challenging each other to work differently and to make a difference”.



The learning pit



The group met four times (November, January, March, June)

during the course of the academic year, in the Open University Library for between two and two-and-a-half hours.

In the first meeting, Clare shared some of the findings from research in this area and introduced tools for thinking about resilience. This was followed by a discussion and work in pairs to plan some activities that they would try in their classrooms.

Subsequent meetings concentrated on sharing experiences, discussing issues and, where necessary drawing on Clare's expertise. In the final meeting, the group discussed the format for reporting

their work, and worked on their final reports. These were submitted two weeks later and a summary of all the projects was prepared.

The sorts of problems that were being addressed included:

- Students being reluctant to ask questions;
- Girls lacking confidence in maths;
- Students not persevering but saying, "I can't do it".

Other projects focused on progressing problem solving skills, developing self-esteem and raising awareness of students as themselves as learners, paying particular attention to the fact that learning is difficult and it helps to share. "I don't get it YET" became a mantra in many of the projects.

The success of the programme is down to a number of factors including:

- The focus on classroom practice and applying research to practice;
- Teachers spending relatively little time away from school (two days in total over the whole year) so their classroom teaching was not disrupted;
- The intermediate meetings which ensured that momentum was maintained and the teachers had access to expertise.

From the perspective of the Open University, the work undertaken by the teachers contributed to Clare's understandings of Maths resilience, and is currently being written up for an academic journal. So it was a positive collaboration, in which academics, teachers, and children learning Maths, gained a great deal.

