

## Evaluation of Learning Away

### Hypothesis 2: Knowledge, understanding and skills in a range of curriculum areas

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## **Hypothesis 2: Knowledge, understanding and skills in a range of curriculum areas**

*High quality residential learning programmes can significantly improve student knowledge, understanding and skills in a wide range of curriculum areas at both primary and secondary phases.*

### **Background**

The usual dictionary definition of 'knowledge' is a 'familiarity with something or someone', which can include information, facts, descriptions or skills. It can refer to the theoretical or practical understanding of a subject; it can be implicit (as with a practical skill or expertise) or explicit (as with the theoretical understanding of a subject); and it can be formal or informal and systematic or unsystematic.

Knowledge is more commonly viewed as 'awareness of bits of information', while understanding is commonly viewed as the 'awareness of the connection between the individual pieces of this information'. As it is understanding which allows knowledge to be put to use, 'understanding' represents a deeper level than 'knowledge'.

Some researchers<sup>1</sup> argue that understanding something means being able to figure out a simple set of rules that explains it. For example, we understand why day and night exist because we have a simple model (the rotation of the earth) that explains a tremendous amount of data (changes in brightness, temperature, and atmospheric composition of the earth).

Children need to employ a broad range of skills across the curriculum. They include: academic skills (reading, writing and mathematics), motor skills, interpersonal/communication skills (requiring both oral and listening skills), problem-solving skills, creative thinking skills, teamwork skills (when working in groups) and independent learning skills.

### **Programme wide outcomes related to knowledge, understanding and skills in a range of curriculum areas**

*Secondary students' better knowledge, understanding and skills*

#### *a) In the curriculum areas which were the residential foci*

Clusters working exclusively with secondary students (BEMAT, Canterbury and Calderglen) or involving them (e.g. Bulwell, Newall Green) all reported progress in their performance in one or more areas of the curriculum. For example, at Calderglen, staff noticed, through the analysis of the school assessment data, that most of the students who had been on the Sports residential had increased attainment levels in PE.

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<sup>1</sup> E.g. Chaitin, G. (2006) *The Limits of Reason* (2006):  
[www.cs.auckland.ac.nz/CDMTCS/chaitin/sciamer3.html](http://www.cs.auckland.ac.nz/CDMTCS/chaitin/sciamer3.html)

During their Sports residential, students at Calderglen learned both new skills and consolidated existing skills in badminton, basketball, hockey and volleyball (all part of their standard grade PE course):

*'I learned different ways to play which I thought was great'*

*'After the trip my skills were much better and I can now shoot.'*

*'I feel my shooting has improved loads'.*

*'I feel that my skill level for all of the sports has increased and now hopefully I will go up a grade'.*

Examples of the other curriculum areas in which secondary aged students improved their knowledge, understanding and skills during the residentials focused on these areas included modern foreign languages (BEMAT), PE (Calderglen), business studies (Thomas Tallis) and vocational subjects (Canterbury),

*b) As a result of reflecting on and reporting the residential outcomes*

In the case of at least one cluster, better knowledge, understanding and skills were prompted by students' efforts to communicate their experiences as a consequence of going on a residential. For example, reporting on her residential experiences afterwards, helped one student from Newall Green to improve her ICT skills. Thomas Tallis similarly noted that 'students writing skills were enhanced back at school as the students wrote about something that they felt passionate about: the residential'.

*c) Through young people's involvement in planning and preparation of residentials*

For some students, their knowledge, understanding and skills increased before they even went on the residential as a result of planning for the residential themselves. For example, Samuel Whitbread College noted how their students developed:

- their numeracy skills through budget planning and costings (venue, food transport etc);
- their communication skills, including the art of compromise, through negotiating with venue organisers and others; and
- an ability to solve problems e.g. budgeting for food.

*d) Manifested in the new qualifications*

For secondary students, evidence that they had developed their knowledge, understanding and skills during residentials sometimes took the form of follow-up leading to qualifications. Examples included:

- several Canterbury students using residentials as an opportunity to develop their cooking skills whilst preparing meals for other students and to assemble portfolios of evidence for their BTEC qualification; and
- two young leaders from Bulwell who were involved in supporting various cluster residentials with younger students, using their experience to complete their level 2 Sports Leaders courses.

*e) Captured through self-assessment*

Evidence for some secondary students came from self-assessment reviews. When students involved in the Thomas Tallis cluster self-assessed their skills in business studies (through completing a questionnaire which required them to report their perceived levels of skills before and after the residential) the teachers noted increases in all areas, including business

management, goal setting, record keeping, financial management, marketing and sales, team building, communication, organisation, decision making, planning and research and creative thinking.

#### *Primary children's better knowledge, understanding and skills*

For primary children, improvements were noted most commonly in science, geography and history, but also modern foreign languages. The outcomes for primary students related to knowledge, understanding and skills in these different curriculum areas included children:

- applying their subject knowledge and skills;
- deepening their subject knowledge ;
- enhancing their understanding of the world; and
- developing transferable skills, such as independent learning and interpersonal skills.

#### *a) Pupils applying their subject knowledge and skills*

During a residential in France organised by South Hetton cluster, the Year 4 children (aged 9-10 years) were shy at first, but became more willing to speaking in French, as this example shows:

*'I needed to get past a lady and didn't think she would understand if I said excuse me, so I said excusez-moi ... and she moved!'*

#### *b) Pupils deepening their subject knowledge*

Before their residential, staff at one of the schools in the Burley cluster noted that their pupils lacked clarity and depth in their understanding of nature. After the residential, pupils could confidently distinguish between carnivores and herbivores, name some new plants and insects they had seen and found out about, and explain why some habitats become endangered:

*'I learned how different animals survive in winter'.*

*'I learned how to identify trees without any leaves and how to do coppicing'.*

*'We learned about some of the problems facing animals in the forest like people driving too fast and killing animals on the road and people having picnics in the summer and leaving rubbish. We learned to respect the New Forest'.*

#### *c) Pupils developing their understanding of the world*

South Hetton's Eden camp residential, which focused on different aspects of World War 2, helped to clarify the children's view of the past, as this comment from a nine-year old girl shows:

*'I knew some British people were captured and were prisoners in other countries, but I didn't know we held some people prisoner too!'*

Similarly, children from rural Cornwall and multicultural suburb of Birmingham learnt a lot about different cultures and ways of living when visiting each other's community. For example, the majority of the Cornish pupils were surprised that there was 'countryside' near Birmingham or that the people in the Sikh temple they visited 'looked normal'. The pupils from both schools found the number of similarities between the two communities both surprising and encouraging. They had some very positive and often thrilling experiences in the place which they had previously perceived either too 'boring and far away' (Cornwall) or

too 'busy' (Birmingham), which helped them be more respectful and accepting of the differences they had noticed.

*d) Developing transferable skills*

South Hetton and Burley clusters in particular noted how the children had become more independent learners both during the residential and afterwards back in the classroom. The children started to take on more responsibility for their learning; they began to ask more searching questions and initiated their own research to find answers rather than simply expect the teachers to answer their questions:

*'I thought of a question to investigate – Which wood absorbs the most water?'*  
(Burley student)

In year 2 of the programme, most clusters noted the students' improved group working skills – the extent to which all students were involved in group discussions and the extent to which students listened and responded to other's suggestions.

**Examples of residential interventions linked to improved knowledge, understanding and skills**

Canterbury High School's *Making the Learning Real* residential, aimed at disengaged and disaffected young people as part of the school's alternative curriculum provision provided an obvious and natural learning environment for particular courses or specific elements within them. For example, the learning objectives for Unit 6 of the Public Services BTEC course, *Adventurous Activities* directly mapped onto many of the mountain and water-based activities students took part in while in Snowdonia. The demands of working in an adventurous environment required specialist instructions and opportunities to work with such new specialists enabled the students to develop the skills and knowledge, specified by Unit 2 of the BTEC Public Services qualification. It also helped them develop a particular understanding of various methods of instruction and an ability to use a range of interpersonal communication skills.

The Thomas Tallis business residential took place at the London School of Economics. It involved Year 12 students in a number of 'Apprentice' activities (based on the TV programme). The tasks included budgeting, designing and market research activities. The students, split into groups, worked together to decide how they would approach the task. They were expected to carry out their plans and take responsibility for modifying them as they went along. After each task, debriefing sessions were held to reflect on how the group had approached the tasks. Groups worked to make and enact decisions and then all the groups came together to reflect on how things had gone.

The areas of learning developed during Christ Church primary school's Year 2 two-day residential in support of their class topic 'Nature Detectives' included:

- science (e.g. habitats, similarities and differences between creatures, collecting creatures with sensitivity using pooters, using a key to identify pond and woodland

- creatures), and
- art (e.g. natural art in the wood inspired by Andy Goldsworthy).

Before the residential, the teachers enabled the children to explore habitats around the school, familiarised the children with the pond dipping equipment and looked at the work of Andy Goldsworthy.

After the visit, the teachers continued the science work and created some natural artworks in the school grounds. As the visit fell quite near to the KS1 SATs, they used the 'nature detectives' work to support the short writing task. The longer writing task focused on finding a pebble in the woods, which was also supported by the residential visit.

### **Common features in the clusters' approaches to facilitating the development of knowledge, understanding and skills**

Key circumstances which seem to be connected to improved knowledge, understanding and skills in various areas of the curriculum included the way residential activities:

- focused on learning in context related to specific subject areas;
- made strong links with the school curriculum;
- tailored learning to the students; and
- provided opportunities for practical problem-solving, enquiry and reflection.

#### *A focus on learning in context, related to specific subject areas*

The Calderglen students felt having more time to focus specifically on sport as well as having the support of expert coaches (which included some ex-national team players) were critical factors in enabling them to improve their sport skills:

*'In school we practise our shooting, but then we run out of time as the lessons are only 50 minutes long. At the sports centre, I had more time to practise and I was shown different ways of shooting.'*

*'It was brilliant to learn different techniques from the different coaches. Our teachers in school teach us well but I learnt different ways to play which I thought was great. It was nice to have some different people teaching us who were also very enthusiastic about their own sports.'*

For the South Hetton children, going to Eden camp made World War Two (previously quite a dry topic) more interesting for them. One child commented: 'Learning about World War 2 on the trip was more exciting because you could move around [the huts] and ask people things'. Teachers commented on how the children showed improved empathy skills as the trip made them feel like they 'were really there'.

Though often having a particular subject focus, the contextualised nature of residential learning for the primary pupils typically also spanned several curriculum areas. Burley, East EAZ, Christ Church and South Hetton were particularly skilful at planning a balance of activities that covered several areas of the curriculum. For example, students from East EAZ learned about modern foreign languages and other cultures through activities such as singing, music making, dancing (e.g. South American, Cossack and African), cooking and

trying different foods, learning greetings in French, Spanish, German, Russian and simple Chinese.

For the Year 2 children from Christ Church cluster, learning in context whilst on a residential visit involved the children in taking on the role of a company of environmentalists who looked after animals in danger. They were told that there was a newly discovered creature at the residential centre which was very important to scientists, but the local residents (parents in role) were having problems with the creature and some were even killing it. Along with solving the many moral dilemmas the scenario presented, the students were tasked with many science-based activities based around researching the creature such as:

- researching nocturnal animals;
- investigating mini beasts (after establishing that it was the creature's food);
- looking at animal signs and tracks;
- observing real and pictured birds of prey;
- dissecting owl pellets; and
- analysing food webs and consequences of changes.

Other areas of the curriculum covered by the LA experience included art (e.g. drawing imaginary creatures from collected evidence; observational drawings of real nocturnal animals from photographs), geography (e.g. researching the location using Google earth), literacy (e.g. writing a letter to local residents persuading them that the animal is not a pest and expressing their own views) and PE (e.g. students took part in a 'confidence' course designed to test their skills and bravery).

But facilitating cross curricular learning made assessing the progress pupils made in the different subjects challenging for primary schools. As the secondary schools tended to relate their learning away programmes to specific areas of the curriculum (such as MFL and PE) they were able to use learner performance data in that area of learning as evidence of impact.

#### *Strong links with the school curriculum*

Over the first two years increasingly high numbers of clusters, particularly those involving primary schools, developed residential learning opportunities which were integrated into the school curriculum or selected modules (partly due to the strong urge and support from the Foundation and its LA advisors). In year 2 of the programme, Burley, Christ Church, East EAZ and South Hetton clusters were amongst those who had made particularly strong links with the school curriculum.

South Hetton primary school's Year 6 five-day geography-based residential to Middleton-in-Teesdale, including Killhope Lead Mine, set the scene for subsequent literacy work that also incorporated a great deal of ICT. For example, the students:

- wrote a letter (using a computer) to the Centre Director (recount);
- researched Middleton-in-Teesdale to find out about the surrounding area and attractions (internet usage, including safe use);
- created a poster and a leaflet using publisher, advertising Middleton-in-Teesdale

- (persuasive text, “wow” words and phrases to grab attention);
- made a PowerPoint presentation about their residential experiences to parents and students during assembly (speaking and listening/oral presentation); and
- wrote captions for photographs they had taken during the residential.

In addition, a study of rivers, bridges, and the water cycle emanating from the residential experience incorporated geography, design technology and science.

During the week, the children visited various sites around Middleton to learn about the way of life for people who lived there in the past. When they arrived back at school, they used their knowledge and understanding of the visit to compare and contrast the local environment they lived in with the environment they had visited. They linked their coal mining history to that of the history of lead mining in Middleton.

For some clusters, such as Christ Church and South Hetton, Learning Away had been set up as a core element within ongoing curriculum development. For these clusters, ‘Curriculum for Life’ (South Hetton) and establishing a creative curriculum where ‘learning is real’ (Christ Church) all required residential learning as a ‘fundamental element’ and an ‘essential and integral part’.

Several of the clusters who focused on specific subject areas such as sport, music and modern foreign languages in year 1 which were only loosely linked to the respective curriculum areas in school, explored the possibility of bridging school and residential learning more in year 2, including building in assessment opportunities, once they had witnessed the increased student engagement and interest in the subject the residential created.

#### *Learning tailored to students’ needs and interests*

Sometimes, teachers involved the children in planning the residential so that it focused on what they wanted to learn. Where LA planners were not the pupils’ regular class teachers, those leading the residentials often set about finding out from the children’s regular teachers what the children were studying at the time and approaches that worked for them.

South Hetton cluster teachers wanted to take their children on a trip when learning about World War II. At the beginning of the term, they asked the children to think about what they already knew, then what would they like to learn about in that topic. They found that some children wanted to know what type of transport was around in the war, other children wanted to camp and others wanted to visit a museum. So, putting all three ideas together the class came up with the ‘evacuation’ trip where they would be able to visit a steam railway, stay over night and go to the open air museum, Eden camp.

The family support workers involved in the Newall Green cluster residentials made a particular effort to find out what the young people were studying at the time they went on the residentials, so that they could support each student to apply and develop their knowledge and skills in English and mathematics whilst away. They contacted each of the

students' teachers to ensure continuity of their learning experiences and the right focus of the practical activities. The exchange of information about the students, their needs and the approaches that worked for them went in both directions. First the teachers communicated their knowledge of the students and the school curriculum to the family support workers. After the residential, some of the teachers, impressed with the students' successes, decided to introduce more practical and context-based learning opportunities similar to those the students experienced on the residentials (e.g. comparing prices on food and ingredients in different supermarkets in mathematics).

*Providing opportunities for practical problem-solving, enquiry and reflection*

Most of the clusters enabled the pupils to take part in problem-solving activities, usually undertaken in groups. The students at Samuel Whitbread College were encouraged and supported to plan and organise as a team, their own sports residential experience. They were responsible for deciding on the venue, costs, transport, learning opportunities during the residentials, and the expertise needed for the learning opportunities. The content of the programme was also decided by the students. In a similar vein, Newall Green cluster students had to plan and prepare a three course meal in the style of the 'Come dine with me' TV programme.

One of Christ Church primary school's problem solving activities involved the Year 2 pupils digging for dinosaur bones (a selection of different sized dog chews) and then using them to create a skeleton. One child reported how her group found it "tricky getting the ribs right". Pupils from Birmingham in the Twickenham cluster worked on building the fastest boat in a maritime museum in Cornwall with local children who were able to share their better knowledge and understanding of boats.

Several of the clusters involved the pupils in making a shelter from different materials as a group problem solving task. The pupils decided on how they would design the shelter and were responsible for carrying this out, which included making decisions about how to modify their designs when things didn't work out as they had expected. For instance, in one group a pupil came up with a different idea about how the roof should be constructed. This was accepted by the group and used to make their shelter. Staff emphasised that they took a facilitative role rather than directive and encouraged students to take responsibility for their learning.

The children reported how building reflection into the activities they undertook also helped them to learn and enhance their understanding in different subject areas:

*'It was exciting to see which wood burned the best'.*

*'We buried each other under leaves to find out what it is like to be a moth in its cocoon'.*

*'When we walked for 5 hours we felt hot and bothered. We thought about how it might feel to carry 20 litres of water for 5 miles and learned how it felt to not have enough water to drink!'*

When the South Hetton cluster children were asked while travelling on a steam train, about how they thought evacuees might have felt when going on a similar journey during World War 2 one nine-year old girl commented:

*'We're all really excited about it because we know we're going home tomorrow. It would be scary if you weren't going to see your family for a long time though'.*

#### *Unexpected learning outcomes*

It is interesting to note that although many clusters highlighted improvements in students' problem-solving and enquiry skills as learning outcomes in year 1, few had noted them as expected outcomes, suggesting that many of the clusters had underestimated the potential of linking curriculum content and classroom pedagogy with the residential experiences. Teachers from at least one cluster reflected at the end of year 1 that they could provide more opportunities for the pupils to take part in problem-solving tasks, while Burley's leaders reflected on the importance of developing their pupils' ability to collaborate. In year 2, there was much evidence of staff paying careful attention to the way they grouped pupils during residential and organising activities and tasks in such a way as to promote the development of social, interpersonal and group work skills.

#### **Possible explanations for the outcomes**

As reported above, the key circumstances which have connected with improved knowledge, understanding and skills in various areas of the curriculum included residential which:

- focused on learning in context;
- made strong links with the school curriculum;
- tailored learning to the students; and
- provided opportunities for practical problem-solving, and experiential learning.

There is a great deal of research in support of each.

#### *A focus on learning in context*

A review of reviews on curriculum<sup>2</sup> showed the importance of 'context-based learning' for enhancing subject knowledge and improving achievement. According to this review, context-based learning also helps:

- students to develop a more positive attitude towards subjects;
- increase students' ability to engage in productive argument; and
- widen access to challenging curriculum content.

Providing authentic, meaningful tasks is key to context-based learning. Bruner<sup>3</sup> once commented:

*'The schoolboy learning physics is a physicist and it is easier for him to learn physics behaving like a physicist than doing something else'.*

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<sup>2</sup> Bell, M., Cordingley, P., Gibbons, S., & Hawkins, M. (2008) Review of individual studies from systematic research reviews. Available from: [www.curee-paccts.com/our-projects/qcda-building-evidence-base](http://www.curee-paccts.com/our-projects/qcda-building-evidence-base)

<sup>3</sup> Bruner, J. S. (1960, revised edition 1977) *The Process of Education*, Harvard University Press.

In other words, solving real life problems through enquiry rather than using textbooks to acquire factual knowledge. In this way, students take on the role of history or nature detectives etc – asking questions, hypothesising, discovering clues and following lines of enquiry in order to solve who and what triggered events.

Similarly, when reflecting specifically on their residential learning, participants in another study<sup>4</sup> noted how ‘being in the learning’ made their learning vivid and helped them retain information. As one of the participants in the study summed up:

*‘I can focus on something stronger and stay with it longer, and I think you’ve got more opportunities to learn when you’re involved in it from different angles, different perspectives, different times of day, everything factored into it’.*

One study<sup>5</sup> found that when students took on the role of scientists, this led to gains in their thinking skills. Another study<sup>6</sup>, which engaged students in looking at the holocaust with curriculum experiences that enabled them to make links with current moral issues resulted in students improving their reasoning skills as well as increasing their historical knowledge.

#### *Making strong links with the school curriculum and across the curriculum*

Research and inspection evidence<sup>7</sup> suggests that linking residential experiences to school curriculum is essential for them to be able to reinforce learning in both contexts (school and learning away) and secure positive changes to student outcomes.

The review of reviews on curriculum<sup>8</sup> cited above also highlighted the benefits for the development of conceptual depth to learners of teachers offering a less compartmentalised approach to the curriculum. The review highlighted three types of strategies that were particularly effective:

- integrating skills with content;
- cross-curricular strategies (secondary); and
- using a thematic approach (primary).

These were important strategies for extending and deepening conceptual development in LA. They helped overcome the difficulty pupils sometimes had in transferring thinking and learning from one subject to another, such as being able to draw graphs (a skill learned in mathematics) in science or geography, and being able to plan a piece of writing (a skill learned in English) in history. The benefits of such approaches translated into measured

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<sup>4</sup> Fleming, J. A. (1998) Understanding Residential Learning: The Power of Detachment and Continuity, *Adult Education Quarterly*, 48(4), pp.260-271

<sup>5</sup> Faubert, M, Locke, DC, Sprinthall, N, A and Howland W, H. (1996) Promoting cognitive and ego development of African-American rural youth: a program of deliberate psychological education. *Journal of Adolescence*, 19, pp.53 – 543.

<sup>6</sup> Beyer, F.S. & Presseisen, B. Z. (1995) Facing History and Ourselves: Initial Evaluation of an Inner-City Middle School Implementation. Philadelphia, PA: Research for Better Schools, Inc.

<sup>7</sup> Ofsted (2008). *Learning outside the classroom: How far should you go?* London: Ofsted

<sup>8</sup> Bell *et al.* (2008) Review of individual studies from systematic research reviews. Available from: [www.curee-paccts.com/our-projects/qcda-building-evidence-base](http://www.curee-paccts.com/our-projects/qcda-building-evidence-base)

learning gains in these schools and this suggests that some approaches in LA lie behind many of the improvements noted.

#### *Tailoring learning to students' needs*

A review of challenge in the curriculum<sup>9</sup> showed the importance of building on and developing students' existing knowledge and understanding through providing appropriate levels of challenge; planning activities designed to make them think. This can be disruptive to someone's usual way of thinking or perceiving the world; it may introduce new information that does not fit with previous experience. The uncertainty arouses curiosity and makes students think. The nature of the tasks will depend on the teachers' knowledge of the pupils existing knowledge and understanding and what the teacher expects them to learn. Once the pupils have been set a challenging task they can work together to solve it, supported by each other. Many aspects of the very different and unusual much more uncertain environment in LA contexts provide such a stimulus for challenges for both staff and for pupils.

#### *Providing opportunities for enquiry and practical problem-solving*

There is much research which shows that structured group work and actual problem solving are important ingredients in effective learning experiences. One study<sup>10</sup> involving learners doing structured enquiry-based tasks in small groups, found both increased cognitive achievement and the development of more favourable attitudes to the subject. Another study<sup>11</sup> noted how when learners undertook enquiry-based group work, their views of learning changed from being a process of receiving knowledge to one that uses investigation as a tool for accessing and interpreting it.

#### **Conclusions**

Most of the clusters reported increased knowledge, understanding and skills in one or more areas of the curriculum – especially in the area(s) the residential focused on. For primary children the evidence included pupils applying and deepening their existing knowledge as well as discovering new things. For secondary pupils, the evidence included acquiring qualifications. Improving skills ranged from physical (such as an improved ability to shoot a basketball accurately) to transferable (e.g. improved communication and independent working skills). The key factors that were connectives with these outcomes included a focus on learning in context through problem-solving and enquiry, making links with the school curriculum and tailored learning.

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<sup>9</sup> CUREE (2009) Building the evidence base: challenge review report. Available at: [www.curee-paccts.com/our-projects/qcda-building-evidence-base](http://www.curee-paccts.com/our-projects/qcda-building-evidence-base)

<sup>10</sup> Melchior, A. (1999) Summary Report: National evaluation of Learn and Serve America. Waltham MA: Center for Human Resources, Bradeis University

<sup>11</sup> Wierstra, R. & Wubbels, T. (1994) Student perception and appraisal of the learning environment: core concepts in the evaluation of the PLON physics curriculum. *Studies in Educational Evaluation*, 20 pp437 – 455