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The impact of residential experiences on pupil progress and attainment in year six (10 – 11 year olds) in England

A Learning Away Comparative Research Study

A report on behalf of
the Learning Away Consortium

by Dr Jane Dudman, Carrie Hedges & Dr Chris Loynes

In partnership with



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Findings

Regarding pupils

- Residential experiences supported vulnerable learners enabling them to achieve their expected results in SATs tests. Vulnerable pupils who went on residential after their SATs tests underachieved.
- When residential experiences explicitly addressed curriculum content (in this case creative writing and geography), they impacted significantly on progression and attainment.
- Pupils taking part in residential experiences prior to their SATs test progressed in reading writing and maths more slowly than pupils who went on their residential after their SATs tests. This result is regardless of gender, socio-economic background or ability and is consistent across all schools that provided progress data.
- The residential experiences had a significant impact on a range of indicators associated with self-efficacy and locus of control. Six of these indicators were found to be significant and six showed an elevated trend towards significance.
- The residential experiences developed a learning community that impacted on socialisation, maturation and pro-active learning behaviours that are sustained in the classroom post-residential.

Regarding providers and their staff

- Collaborative learning during activities and community building during informal times were significant elements that impacted on teaching and learning during and post-residential.
- The approach to facilitation taken by centre staff was a significant element in both curriculum and personal and social development outcomes.

Regarding schools and their staff

- The involvement of the staff working directly with the pupils in the residential was a significant element that enabled the transfer of a range of outcomes to the classroom post-residential.
- Staff used residential experiences to learn about the current, hidden and new interests and capabilities of their pupils. They also observed new learning strategies and capitalised on changes in peer relations and in pupil to staff relationships for later application in the class.
- Staff could and could articulate a complex 'theory of change' concerning the impact of residential experiences and they used this to guide the development of their tactics with their pupils post-residential and the design of future residential.

The impact of residential experiences on pupil progress and attainment in year six (10 – 11 year olds) in England

Summary

The comparative study in this design focusses on examining the provisional findings for the impact of residential experiences on progress and attainment indicated in previous research findings and the *Learning Away* evaluation report (Kendall & Rodger, 2015). This study was funded by a grant from the Paul Hamlyn Foundation to the Learning Away Consortium of the Council for Learning Outside the Classroom. It was undertaken in partnership with the residential provider, the Brathay Trust, and a Local Authority. The research took place with eight primary schools in the academic year 2017-2018.

The comparative study

The aims of the research were:

- To investigate to what measurable extent residential experiences impact on progress and attainment in year 6 (10 – 11 year olds) pupils
- To generate sufficient understanding of the complexities of the factors influencing the outcomes of residential experiences and
- To make recommendations for the most effective way forward for future research

The schools were seeking to impact on a number non-cognitive outcomes that were also identified as significant outcomes of residential experiences in the *Learning Away* study, namely peer to peer and pupil to teacher relationships; resilience, self-confidence and wellbeing; and cohesion and transition. These are characteristics identified by the *Learning Away* study as causal in relation to impacts on progress and attainment. It can be hypothesised that these non-cognitive outcomes would also impact on progress and attainment in the comparative study.

Six approaches were used to examine the impact of the residential experiences on progress and attainment in numeracy and literacy (see Figure 1):

1. Termly progress and attainment data in numeracy and literacy were collected for the academic year for every pupil.
2. The SATs results were collected for every pupil (n = 112).
3. Pupils completed two surveys to gauge pupil perception of progress over the year (n = 163).
4. Field notes were made during visits to some of the residential experiences.
5. Post-residential pupil focus groups were held in each school that had a residential experience prior to SATs.
6. Post-SATs interviews were held with year 6 teachers from all the schools.

The pre-SATs schools had one survey prior to their residential experience. The second survey, the focus groups and the interviews were post-residential.

The post-SATs schools had both their surveys pre-residential. In all cases the surveys were held at roughly the same time as the pre-SATs group.

Results of the Progress Scores and SATs data. These results indicate the children that attended the residential before sitting the SATs exam did not progress as much in reading, writing and maths during that time period as those that did not. These results demonstrate a correlation but not a causal link. It is not certain that the difference between the two sets of schools can be explained by the timing of the residential experiences as other factors cannot be ruled out. Other evidence below provides a different view.

Although results show a larger magnitude of progression for children who did not attend the residential it should be noted that there was a clear progression through the year for the majority of children in all schools. This cannot be identified in the results due to the lack of granularity of the data being analysed.

Results of the survey. Results indicate significant difference between children who attended the residential prior to SATs and those who did not (Figure 4). The magnitude of change for all factors between the first survey and the second survey were positively greater in children who attended the residential. A significant positive change ($P < .05$) in children's responses were found in seven factors for those who attended the residential than those who did not:

- Cooperative Teamwork ($P=0.005$)
- Internal Locus of Control ($P=0.008$)
- Leadership Ability ($P=0.014$)
- Open Thinking ($P=0.006$)
- Quality Seeking ($P=0.011$)
- Social Effectiveness ($P=.008$)
- Stress Management ($P=0.012$)

The results of the following six factors indicate an elevated trend towards significance ($P < .1$, 90% confidence):

- Active Involvement ($P=0.87$)
- Coping with Change ($P=0.056$)
- Overall Effectiveness ($P=0.068$)
- Self Confidence ($P=0.084$)
- Self Efficacy ($P=0.064$)
- Time Efficiency ($P=0.081$)

Only two factors indicated no clear change, the child's view of their own Academic Performance ($P=.433$) and External Locus of Control ($P=.266$).

Considering gender differences, the positive change in Cooperative Teamwork in females is significantly ($p=.011$) larger than males who attended the residential and the results for Open Thinking suggest the same trend ($P=.52$).

Results of the interviews, focus groups and field observations. Whilst the interviews covered different schools and residential trips and recounted different stories, there is a remarkable congruence between them that, when combined, offers a comprehensive 'theory of change' (Figure 5). The model shows many similarities to the original theory of change developed from the Learning Away evidence. It reinforces the Learning Away findings about the personal development that takes

place during a residential. A consistent model of effective practices emerges from the combined evidence of the interviews and the field notes. The key inputs afforded by the residential and identified by the staff in the interviews and observed during the residential are:

- Challenging, collaborative and enjoyable tasks outdoors
- The development of relationships more broadly, including peer to peer, pupil to staff and pupil to instructor, and inculcating an atmosphere of mutual trust
- The novel, real and intensive nature of the experiences and their setting
- A range of new ways of teaching and learning for pupils and staff
- The importance of informal time in building new relationships and reflecting on experiences
- The community feel inculcated by eating, socialising, playing and sleeping together.

According to the staff, these conditions lead to a range of outputs that manifest during and post-residential:

- Friendship including new friends, new ways of being friendly and friendships across normal social groups
- A sense of achievement
- A growing sense of motivation to learn and be part of the community
- Growing respect for each other
- Pro-active behaviours in the tasks, in community life and socially

Staff offered considerable evidence of the transfer of these attributes to the classroom in ways that were sustained and could be enhanced by changes in teaching practices:

- Application to learning
- Awareness of capabilities and interests between peers and by staff
- Changes in social behaviour

In the view of staff, reflecting on these and previous residential, these three outcomes had the following impacts:

- Enhanced and transformed relationships
- Positive interplay between engagement and progression
- Resilient, mindful pupils with enhanced metacognition

This 'theory in the mind' is deployed by staff as a narrative to justify an approach to teaching and learning (the residential) that is demanding of school and family resources. Schools going before SATs consciously used the experience to create class cohesion, closer relationships between staff and pupils and also to start preparing the pupils for transition to secondary school. The Brathay ethos of fostering independence in the children is highlighted as very important. Observation and interviews on residential showed that schools undertaking residential before SATs are making the decision to specifically go to Brathay for these reasons. The sense of place was important as was the ethos of the Brathay Trust and the staff expertise. The 'theory in the mind' model is also used reflectively as a comparison for approaches to teaching and learning taken in school and for the development of future residential experiences.

Schools going after SATs used the experience as a reward/treat and as a preparation for transition to secondary school.

Findings regarding pupils

- Residential experiences do support vulnerable learners enabling them to achieve their expected results in SATs tests. Vulnerable pupils who went on residential after their SATs tests did underachieve.
- When residential experiences explicitly addressed curriculum content (in this case creative writing and geography), they do impact significantly on progression and attainment.
- Pupils taking part in residential experiences prior to their SATs test progressed in reading writing and maths more slowly than pupils who went on their residential after their SATs tests. This result is regardless of gender, socio-economic background or ability and is consistent across all schools that provided progress data.
- The residential experiences had a significant impact on a range of indicators associated with self-efficacy and locus of control. Six of these indicators were found to be significant and six showed an elevated trend towards significance.
- The residential experiences developed a learning community that impacted on socialisation, maturation and pro-active learning behaviours that are sustained in the classroom post-residential.

Regarding providers and their staff

- Collaborative learning during activities and community building during informal times are significant elements that impact on teaching and learning post-residential.
- The approach to facilitation taken by centre staff is a significant element in both curriculum and personal and social development outcomes.

Regarding schools and their staff

- The involvement of the staff working directly with the pupils in the residential is a significant element that supports the transfer of a range of outcomes to the classroom post-residential.
- Staff use residential experiences to learn about the current, hidden and new interests and capabilities of their pupils. They also observe new learning strategies and capitalise on changes in pupil to staff relationships for later application in the classroom.
- Staff hold and can articulate a complex 'theory of change' concerning the impact of residential experiences and they use this to guide the development of their tactics with their pupils and residential design for future classes.

Reflections

SATs are limited to assessing numeracy and literacy. Even in this domain, they assess knowledge and some skills providing little insight into the understanding and application of knowledge. If a future study seeks to examine the relationship between residential experiences and attainment in schools, a research tool that can assess attainment in both a broader and deeper sense should be developed.

This study adds further insight to the Learning Away findings of the importance of the informal time made possible by the intensive, 24/7 nature of a residential experience. The impact of residential on the development of both a learning and a social community, and the impact of this outcome on the classroom post-residential, merits further study.

Perhaps a future study could ask the question of impact differently i.e. 'what is the impact of learning and teaching in the classroom on the learning and development during a residential experience?' If residential are real world, albeit novel, experiences, and education aims to prepare young people for the real world, then perhaps the impacts that are worth 'measuring' are the capabilities of pupils during a residential experience. The evidence makes it clear that, in fact, school staff already use these experiences to make formative assessments of pupils' interests, capabilities, maturation, learning and social skills.

A comparative study to examine the impact of outdoor residential experiences on progression and attainment in year 6 Primary School Pupils

Introduction

The Learning Away (LA) Consortium commissioned the University of Cumbria to conduct a comparative research study to examine the impact of a residential experience on the progress and attainment of pupils in year six in England. The study, building on evidence from the Learning Away Initiative (Kendall & Rodgers, 2015), was undertaken to develop a stronger evidence base for the impact of residential in these outcomes and was suggested to the LA Consortium by the Education Endowment Fund (EEF) as a stepping stone to a larger scale study perhaps supported by the EEF. The study was planned for the academic year 2017/18. After a call for expressions of interest to take part in the research via the Council for Learning Outside the Classroom (CLOtC) and the University of Cumbria's (UoC) networks of schools, it was decided to collaborate with the Brathay Trust (the residential provider) and primary schools from a Local Authority.

Residential experiences and their impact on school

As part of the *Learning Away*, a systematic literature review of the impact of residential experiences in schools was undertaken (Curee, 2010). The ten competent and relevant studies identified found that most of the impact data were collected via student/participant questionnaires, interviews and focus groups. In two cases (Christie et al 2004, Cooper 1993) teacher evaluations and/or observations were also used. A synthesis of these studies found that the most commonly reported or perceived form of impact was affective:

- changes in students' confidence and self-esteem;
- attitude changes: students felt more 'positive';
- relationship building: students formed productive peer relationships and student: staff relationships were enhanced;
- improvements in behaviour;
- greater self-awareness;
- increased tolerance and understanding of others;
- increased independence and the ability to make choices;
- pride in accomplishments;
- team working and problem solving;
- improved technical and physical skills; and
- increased resilience.

Ofsted (2008) found that learning outside the classroom improved young people's development in all five of the 'Every Child Matters' outcomes, especially in two areas: enjoying and achieving, and achieving economic well-being. It was also found to contribute to the three other 'Every Child Matters' outcomes, namely being healthy, staying safe and making a positive contribution. This happened, for example, when the children and young people took on different and additional responsibilities to promote their own and each other's safety when out of the classroom; by undertaking extra physical exercise; or by joining in events within the local community or with other schools and colleges.

Although one study (Christie 2004) found that students believed that they could perform better in certain academic areas after a residential no data appears to have been collected to put this claim to the test. Another study (Smith-Sebasto, 2009) found that when students' residential experiences were reinforced by their teachers once back in the classroom they found the scientific topics and information to be the most meaningful of their residential experience. Again, no pre or post intervention achievement data were collected.

Williams (2012), in a small-scale study involving 232 pupils in primary schools, found that 'there are four clearly identifiable components to the impact that a course has on pupils:

- Living with others
- Challenge
- Teacher relationships
- Learning about self'

The study identified strong correlations between these components and:

- Attainment
- Pro-social behaviours
- A reduction in self-perceived hyperactivity

Williams argues that it is not helpful to seek cause and effect relationships between inputs and impacts in complex circumstances such as a residential experience. Rather, he suggests, the outcomes emerge from the complex interaction of the many elements in combination. However, he does suggest that it would be 'worthwhile carrying out a controlled experiment ... to establish whether attendance on a residential is causally related to pupils' rate of progress'.

The Learning Away Findings

Learning Away aimed to support schools across the UK in significantly enhancing young people's learning, achievement and wellbeing by using innovative residential experiences as an integral part of the curriculum. The initiative was funded by the Paul Hamlyn Foundation (PHF) from 2008 to 2015.

The 60 primary and secondary schools involved developed residential programmes that were progressive through the students' lives at school, inclusive of all students and integrated into the curriculum. Between them, the schools developed nine hypotheses for the impacts they intended for their programmes. These were evaluated using staff and student pre and post residential surveys, focus groups, interviews and observation over a five-year period. The findings are summarised below with an emphasis on those related to progress and attainment (Kendall & Rodger, 2015). The design criteria that the study identified as the key contributors to these impacts were later branded as *Brilliant Residentials* (Loynes, 2015). A campaign under this banner to encourage more and better residentials is currently underway.

Impact on Relationships: One of the most significant impacts of Learning Away was on relationships, both peer relationships and those between staff and students (at the secondary and primary level). The main impacts on peer relationships (identified in focus groups) were: the opportunities residentials provided for students to develop new peer relationships, including vertical relationships across age groups; the development of more trusting and respectful relationships between students,

including a change in existing power relationships; and opportunities for students to develop social skills, as well as skills to form relationships. The main impacts on staff-student relationships (identified in focus groups) were: the opportunity for staff and students to develop new relationships, as well as enhancing/changing existing relationships; providing a context where attitudes towards one another could be changed; providing better insights and understanding into each other's behaviour; and the development of more trusting and respectful relationships. Survey responses also highlighted the impact of the residential on both peer and staff-student relationships. Responses to the final staff survey showed that the change in staff-student relationships was the most significant longer-term impact of Learning Away.

Impact on Resilience, Self-confidence and Wellbeing: When focus group participants were asked to identify what difference the residential had made to students, they were most likely to identify an increase in confidence: within students themselves, in their learning, and in their relationships with others. Positive impacts on confidence were directly linked to consequent positive outcomes, such as improved relationships, better engagement with learning and the development of leadership skills.

Impact on Engagement with Learning: Positive impacts on students' engagement with learning were also identified, particularly for secondary students. Both staff and students identified impacts on students' behaviour and attendance and staff noted that the residential experience had helped re-engage those students in danger of exclusion. Residential were felt to be particularly effective for students who had difficulty concentrating and engaging in the classroom context, as it gave them a positive experience of themselves. The more relaxed learning environment, the availability of one-to-one support and small group work, practical and experiential learning opportunities, as well as the chance to experience success, were all felt to contribute to improved learner engagement.

The majority of impacts identified were in relation to improved behaviour. However, a small number of secondary students also identified improvements in their attendance and time keeping as a result of their residential experiences, and nearly a quarter (23%) of parents stated that their child's attendance at school was better as a result of their residential experiences. Quantitative evidence provided by one of the partnerships demonstrated the impact on the attendance of students who were at risk of disengagement. Following participation in family residentials, the attendance of more than three quarters of students improved and for approximately two thirds of students these improvements were maintained in the longer term.

Impact on Achievement: Staff and students felt the residential had impacted on their levels of attainment and in surveys and focus groups provided evidence of students' progress in learning, for example: moving from BTEC to GCSE courses; improving the confidence of lower attaining students resulting in improved attainment back in school; students having a better awareness of their strengths and weaknesses; and knowing what they needed to do to improve their attainment.

Quantitative data provided by partnerships also highlighted the impact on student achievement. Data were provided which showed that secondary students who attended Learning Away residentials improved their performance and achieved higher than their predicted grades in public examinations. Students from one partnership who attended a GCSE maths residential outperformed their peers who did not attend the residential (both groups were C/D borderline students where C is deemed to be the pass grade). More than a third of students who attended the residential improved their maths score post residential compared to 14% of their peers and more than two thirds (69%) achieved a C grade in their GCSE compared to none of their peers. Both of these results were statistically significant indicating a conclusive positive impact on achievement.

Similarly, 61% of students who attended a Higher Drama residential achieved higher than their predicted grade, compared to 21% of students who did not attend the residential. Staff and students linked this impact to the increased focus on specific drama work and activities; the ability to have focused one-to-one teaching; the opportunity to allow peer assessment and for students to receive feedback from classmates who were sitting the same exam. In addition, there was another factor, which none of the staff or students anticipated, and that was the development of a group ethos and a drive towards students doing the best they possibly could.

Pre- and post-residential assessments also showed positive impacts on students' achievement, suggesting a residential effect when students were tested at or immediately after the event. Impacts were identified in a range of subjects, notably science, maths and English. However, in one partnership impacts on achievement seen immediately after the residential were not reflected in improvements in student's predicted or actual GCSE grades in the longer term.

There was also evidence from the primary partnerships that Learning Away residentials were impacting on pupils' progress and achievement. Staff and pupils from two primary partnerships stated that they had seen an improvement in literacy scores pre and post residential and both attributed this to their residential experiences. Staff noted an impact on low and average achievers and boys' literacy scores in particular. Furthermore, primary staff commented that pupils' attitudes to learning and reading and writing had also improved as a result of their residential experiences, illustrated by improved progress.

Survey responses showed that:

more than half (58%) of key stage 2 pupils thought they would do better in their school work as a result of the residential and just under half (48%) felt they would do better in their tests or SATs. The views of secondary students continued to be positive in the post residential context with two thirds or more thinking that as a result of the residential they: would make better progress in their subject (72%); had a better understanding of the subject (72%); were better at problem solving (66%); and would do better in their exams/tests (66%). Secondary students were most positive about how they were taught on the residential, with more than three quarters (76%) saying that the way they were taught would help them do better in the subject; positive responses of key stage 2 pupils seen post residential were maintained in the long-term follow-up surveys. Long-term follow-up responses from secondary students were less positive. Nevertheless, approximately one half of secondary students still felt that the residential had had a positive impact on them two to three terms after the residential; post residential, more than half (57%) of staff respondents felt that Learning Away residentials were beginning to achieve their aims in relation to improving student attainment and/or progress in specific subject areas.

Impact on Knowledge, Skills and Understanding: Impacts on students' knowledge and skills were also identified by participants including that students were:

- becoming more independent learners, as well as learning how to work as a team (both primary and secondary students);
- developing a deeper and better understanding of the subject, for example, using different approaches to problem solving in maths and developing specific skills in music (secondary students);
- developing study and research skills (both primary and secondary students);
- improving creativity: residentials provided inspiration and helped to enrich students' work in a range of subject areas (both primary and secondary students);

- developing vocabulary and speaking and listening skills (particularly for primary pupils).

Post residential, nearly three quarters of staff survey respondents felt that the residential had begun to achieve their aims in relation to improving students' knowledge, understanding and skills.

Impact on Cohesion: The sense of community developed on the residential and the memorability of the experiences helped to boost cohesion, interpersonal relationships and a sense of belonging amongst participants.

Post residential, 70% of staff survey respondents stated that the residential had begun to achieve its aims in relation to improving cohesion and interpersonal relationships by, most commonly, providing opportunities for students to: engage in new activities in new environments; work with other students outside of their normal peer groups; and shine at new activities thereby enhancing their standing with their peers. Both staff and students talked of improved relationships between students (both from their own schools and other schools), as well as students' increased confidence to develop new relationships, both with staff and other students. Staff also identified that students who did not normally work as part of a team did so on the residential and continued to do so back at school.

Students' survey responses showed that as a result of the residential, key stage 2 pupils were more likely to think that everyone in their school got on well together, and that the residential helped them realise that they could get on with people from other schools.

Impact on Leadership, Co-design and Facilitation: The most significant evidence of this impact was on secondary students involved in student leadership programmes. Student leaders were responsible for planning and delivering residential activities, either for their peers or for younger students.

A range of impacts were identified (in focus groups and staff surveys) for both student leaders and for those they were leading, including: increased confidence, particularly being given responsibility to lead activities; providing a role model for other students; improved organisational and presentation skills; improved independence and maturity; and an enhanced learning experience as a result of student involvement in designing and planning the residential.

Students were most likely to identify an increase in their confidence as a result of being involved in leadership activities. Experiencing success in leadership activities motivated students to take on additional responsibilities and made them want to continue with their leadership role. This created a 'virtuous circle' of behaviour that led to improved student motivation and engagement. Residential activities that were part of a progressive programme of activity enhanced the development of students' leadership skills, enabling them to build on them year on year.

Impact on Transition: Residential activities were also used to facilitate students' transition experiences (mainly between primary and secondary school, but also across year groups and key stages). The main impact identified in focus groups was that, as a result of their residential experience, primary pupils were better prepared for secondary school and had developed the skills and relationships they needed to manage within the secondary school environment. Both secondary and primary staff stated that the residential was "*worth half a term*" in terms of the progress students had made. The opportunities for social interaction on the residential was seen as one of the biggest benefits for students, in terms of facilitating integration and providing opportunities for students to mix with other students, which many were not used to doing. Post-residential staff survey responses showed

that more than half (59%) of respondents felt that the residential had supported staff to facilitate students' transition experiences.

Students' survey responses also showed that residential helped support them to develop the skills to make positive transitions. Prior to attending the residential, key stage 2 pupils were most positive about trying new things but were less certain about changing class or whether they found it easy to make new friends. Post residential, just over two thirds (67%) of key stage 2 pupils felt that, because of the residential, they found it easier to make new friends and just over half (53%) were excited about changing class or school, and these views were maintained in long-term follow-up surveys.

Prior to the residential, secondary students' survey responses showed that they were least positive about changing class or school in the following year and were most positive about trying new things. After the residential, the majority of secondary students liked trying new things (89%); were happier working with people who were not their close friends (85%); felt they were better at coping with new situations (85%); and found it easier to make new friends (85%). Furthermore, nearly two thirds (64%) of students were happier about changing class or school after the residential (reducing to 62% in the long-term follow-up surveys), which was the thing they had been least positive about before going on the residential.

Impact on Pedagogical Skills: Staff (in both surveys and focus groups) identified that residential experiences provided opportunities for them to widen and develop their pedagogical skills.

The *Learning Away* Initiative did find impacts of residential experiences on progress and attainment in both primary and secondary schools, including impacts on literacy and numeracy in years five (9 – 11 years old) and six (10 – 11 years old). This evidence included quantitative progress and attainment data generated by both national and internal testing. This was in addition to the perception data captured by the surveys summarised above. However, the evidence came from smaller studies and was only partially based on evidence that the researchers could view directly. In these cases, staff had explicitly set out to integrate curriculum content into the residential and to prepare for and follow up on these inputs in the classroom.

A further finding of the *Learning Away* study was that, no matter what the nature of the residential experience, the age group or the purpose was, the experiences impacted on relationships and self-confidence (Carne, Loynes & Williams, 2015). A 'theory of change' was identified in the evidence that indicated that these outcomes led to enhanced engagement in the classroom and that this led to improvements in progress and attainment, especially for low to middle achieving pupils. The interrelationship of these outcomes was shown to be enhanced by teacher participation in the residential and an inclusive approach.

Other findings

Research has taken place that examines the impact of learning outside the classroom non-residentially on reading, writing and maths. Quibell et al (2017), in a comparative study of 8-11 year olds, found that a structured curriculum-based outdoor learning programme impacted significantly on reading, writing and maths compared with the control group. This improvement was sustained over an extended period. A recent Danish study examined the impact of a day a week for a year taught outside for the ages 7 – 16 years (Mygind, Bolling & Barfod, 2018). This was also a comparative study involving 48 schools. It builds on an earlier Danish study that found that both inter-personal and intra-personal non-cognitive skills were enhanced by *Udeskole* (learning outside

the classroom) (Bentsen et al, 2009). The study concluded that whilst reading skills were improved compared with the control group) (Otte et al, 2019a), maths performance was not affected by *Udeskole* except for those pupils in year six (the equivalent school year to this study) (Otte et al, 2019b). The researchers also noted a positive impact on social relations and hyper-activity and this was amplified amongst pupils with a low socio-economic background. Further work is being undertaken concerning impacts on wellbeing, social inclusion and motivation. Otte et al used pre and post self-perception questionnaires and, in year six, national test results equivalent to English SATs as the evidence. They also found that teachers recognised improvements in both reading and maths. On analysis these were related to understanding and application of the subjects whilst the authors claim the national tests only measure performance (i.e. skills). They conclude that both reading and maths may well be impacted by *Udeskole* but that these impacts are more significant in relation to understanding and application rather than skills. They suggest that further research is needed.

Other studies that have examined the impact of outdoor learning on academic performance and on non-cognitive areas are less conclusive. A recent metareview concluded that there was some positive evidence but that larger studies using what the authors considered to be better methods were needed (Becker et al, 2017). Kuo et al (2018) found, in a comparative study of third grade (year 4) pupils, a significant impact on pupil engagement in the classroom after outdoor learning sessions. However, a recent comparative study of P5 pupils (equivalent year group to the study) from Scotland found a significant increase for mental arithmetic and general maths compared with the control group and the whole local authority. This resulted from a twelve-week programme of two hours per week outside (Harvey et al, 2017).

In 2018 The Brathay Trust conducted a survey of alumni of the Wigan Centres that they manage. 77% of respondents visited as primary school pupils (n = 691). Both centres were visited, and some pupils undertook multiple visits to both centres. Most memorable for them were the activities (95%), time with friends (64%) and being away from home (62%). Learning outcomes that are highlighted in the survey are trying out new activities; feeling more independent; working together as peers; life skills; discovering the natural world; self-confidence and self-belief. The benefits to the alumni were reported as applying the skills learned to educational and working life; encouraging others to enjoy outdoor experiences; a taste for travel and adventure; sustaining confidence, social skills, a willingness to try new things and to live an active life. Alumni reported that they were changed by their residential experiences in that they gained confidence, resilience, a positive mind set and became more responsible for self-development; gained independence and self-sufficiency; developed an appreciation of outdoor learning; sought new opportunities (broadened horizons); and understood others becoming better communicators.

Summary: There is an increasing body of evidence from a number of robust comparative studies that learning outside the classroom impacts on pupil progress and achievement in primary schools both directly and indirectly by impacting on intra-personal and inter-personal non-cognitive functions. The *Learning Away* Initiative has proposed an evidence based 'theory of change' to explain how noncognitive benefits impact on progress and attainment. This model is supported by the evidence from studies of non-residential outdoor learning. It is also worth being reminded that outdoor experiences have been shown to have beneficial impacts on a wide range of educational outcomes other than progress and attainment. The evidence for the impact of residential experiences in particular remains less conclusive.

The comparative study

The comparative study in this design focusses on examining the provisional findings for the impact of residential on progress and attainment. However, it should be noted that the schools that are a part of this study have not adopted the *Brilliant Residential* criteria. Whilst they are all inclusive, the residential are not progressive in that these are the only residential experiences offered by the schools, and they are not always integrated into the curriculum. Nor were any of the schools seeking to make a direct impact on progress and attainment. The resources and timeframe of the study did not allow for a closer relationship with the schools that could influence the context of the residential experiences so that they were closer to the *Brilliant Residential* model. It was also considered to be important that the schools involved in this study had played no part in the original *Learning Away* initiative.

Nevertheless, the schools were variously seeking a number of the outcomes identified in the *Learning Away* study, namely peer to peer and pupil to teacher relationships; resilience, self-confidence and wellbeing; and cohesion and transition. This includes the outcomes identified by the *Learning Away* study as causal in relation to impacts on progress and attainment. It can be hypothesised that the impact on attainment of these other outcomes would also impact on progress and attainment in the comparative study.

[The aims of the comparative study](#). The aims of the research were to:

- investigate to what measurable extent residential experiences impact on progress and attainment in year 6 pupils
- analyse evidence from case studies in England
- generate sufficient understanding of the complexities to make recommendations for the most effective way forward for future research

[The research design](#)

Small-scale comparative case study research is useful when the researcher seeks to explore the causality between an input or intervention (in this case a residential experience) and outcomes (in this case progress and attainment). To enhance the validity of the study, purposeful sampling is used to select case studies that are as similar as possible in all other ways. This helps to reduce the influence of other variables that inevitably affect experiments conducted in real world complex systems such as schools. This in turn increases the internal and external validity of the study and gives confidence in the results and in their generalizability (Goggin, 1986).

With the help of the Outdoor Education Advisor for the Local Authority, a number of single form entry schools were identified that could be matched in pairs on socio-economic criteria including the number of free school meals served, percentage reaching national standards, percentage achieving greater depth pupil premium level, percentage reaching national standards, percentage achieving greater depth the number of pupils with special educational needs, attendance, recent numeracy and literacy standards, ethnic diversity and OFSTED inspection reports, in particular the percentage of students reaching national standards and achieving greater depth.

In addition, schools selected had already booked a four night long residential with the Brathay Trust at one of its two Lake District residential centres. One school booking was prior to and one school post the year 6 SATs test. These pairs were approached and four (eight schools in all) volunteered to

participate (the maximum the study had planned for). The schools were therefore clustered in two ways, as a pair with one school having a residential experience prior to SATs and one afterwards; as a sub-group of four schools, one group holding a residential pre and one group post SATs.

Six approaches were used to examine the impact of the residential on progress and attainment in numeracy and literacy (see Figure 1):

1. Termly progress and attainment data in numeracy and literacy was collected for the academic year for every pupil.
2. The SATs results were collected for every pupil.
3. Every pupil completed two surveys to gauge pupil perception of progress over the year.
4. Field notes were made during visits to some of the residential.
5. Post-residential pupil focus groups were held in each school that had a residential experience prior to SATs.
6. Post-SATs interviews were held with year 6 teachers from all the schools.

The pre-SATs schools had one survey prior to their residential experience. The second survey, the focus groups and the interviews were post-residential.

The post-SATs schools had both their surveys pre-residential. Focus groups and interviews were also held pre-SATs. In all cases the surveys, focus groups and interviews were held at roughly the same time as the pre-SATs group.

[Comments on design](#). It should be noted that none of the schools explicitly took part in residential experiences with the aim of enhancing progress or attainment. This compares with most of the original LA primary schools. They have a variety of intentions that all match with the Learning Away theory of change e.g. improved confidence and relationships impact on engagement in the classroom and may therefore impact on progress and attainment.

Some classes explicitly integrated the experiences on the residential into classroom activities whilst some did not.

Whilst all the schools use the same approach to assessing progress in numeracy and literacy, they use different scoring systems. With the help of the year six teachers, a comparative chart has been developed making comparison between the schools possible.

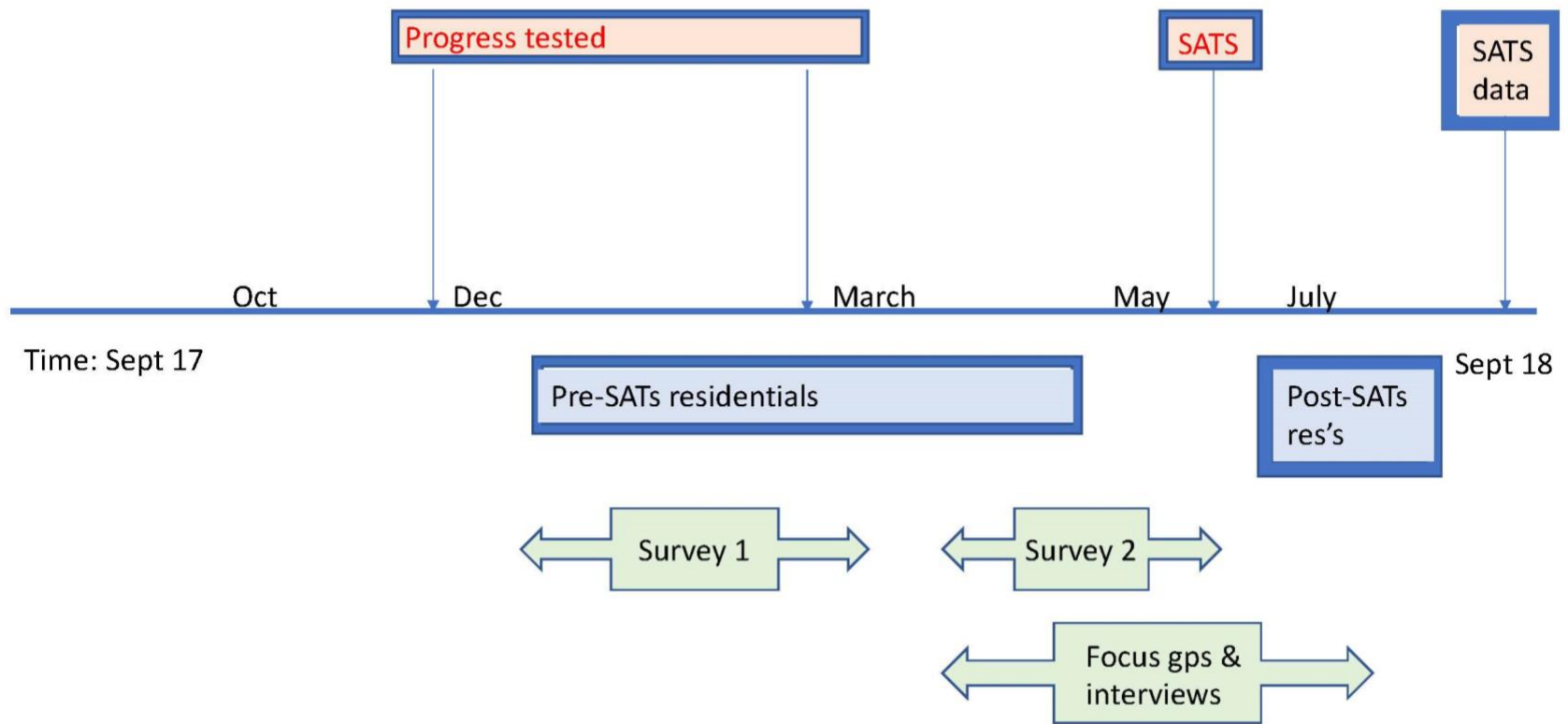


Figure 1 Time Plan

Methods

A mixed methods approach was used combining the quantitative data of progress, attainment, survey and SATs results with qualitative data from focus groups, interviews and observations. This approach has several advantages. It allows the researchers to triangulate the results between different sets of evidence giving greater confidence in the results and highlighting differences in the validity of the methods. In addition, the quantitative data can provide a picture of what has taken place whilst the qualitative data can help to explain how these results came about and the impact that they had on pupils.

School profiles. A contextual profile for each school and each participating class was drawn up by the researcher using data from discussions with head teachers, class teachers, school published data and government data.

Field notes. Notes were made of conversations and observations during visits to several of the residential.

Pupil progress and attainment data. In all the schools progress and attainment are measured in relation to the national standard of attainment. In some, past SATs papers are given to children throughout the year so that they are being tested in the same way throughout. Schools routinely collect progression and attainment data once a term, therefore the researcher used these data in their raw form and constructed a format to analyse all the data using a common terminology and categorisation. At present schools collect the same data for the same reasons but do this in a variety of ways, therefore it is essential to have a simple instrument that enables consistency in the analysis. This reduced the tasks for the schools and ensured that any translation of data is controlled by the researcher. The anonymised data include sex, special needs status and pupil premium.

Pupil surveys. The ROPELOC (review of personal effectiveness and locus of control) survey was used with the pupils. An extra factor was added to include pupils' own view of their academic abilities/performance which in the surveys analysed remained largely constant. The pupil attitude baseline surveys were carried out in person by the researcher to ensure that each school and each child undertook the survey under the same conditions with the same background information and instructions. This online survey asks for responses to a Likert scale with statements referring to personal effectiveness and control. Some small variations in the process are inevitable due mainly to the difference in IT equipment in the schools, but with the researcher present these were noted and accounted for in the analysis. Results of the surveys were shared with teachers, who had expressed an interest in how their class responded.

Teacher interviews. Teacher interviews were conducted post-residential and their analysis of SATs results were shared with the research team in the autumn. This enabled a more accurate reading of the scores in the light of other factors that may have affected the pupil's attainment. In addition, the interviews offered the teachers' perceptions of the value of residential experiences and their impact on teaching and learning in school.

Focus groups. Focus groups with pupils and separately with teachers were conducted by the researcher to collect qualitative data of the experience of the residential. These were recorded on audio tape and, with pupils, a range of creative approaches were used to stimulate recall and conversation, such as the spider diagram in Figure 2.

permission. Schools asked for consent from parents in writing for this project adding their own permission slips in addition to the letter compiled by the researcher. Parents were asked to return the permission slip and those that did not were contacted by the school again and directed to the researcher if there were any issues. No problems were encountered. However, to ensure best practice an additional consent form was distributed to cover the project for future activity and data sharing. Teachers and schools could choose to be anonymous or be named in published reports and articles. However, in this report staff and schools as well as pupils have been anonymised.

All data is digital and stored on a password protected University computer and One Drive account and will be deleted subsequent to any final publications. Anonymised hard copy data is stored in a secure University of Cumbria office. The survey data was collected via online survey software. All children's data was encrypted with a personalised code so that the identity of each child is only known to their class and head teachers. Focus groups were audio recorded and transcribed. Full transcripts were supplied to participating schools to ensure no breaches of confidentiality. Audio files will be deleted three years after publication of the final reports. Upon publication of final reports and papers, the anonymised data will continue to be stored as above and made available for research purposes.

In recognition of the support and co-operation of the participating schools, Learning Away, the commissioning body, have offered schools free membership to *The Council for Learning Outside the Classroom* for a year, which includes many free downloadable resources and free admission to the annual outdoor learning conference.

Results

This section of the report summarises the results from the qualitative and quantitative data collected.

Analysis of SATs results

For the progression analysis five schools out of the original eight submitted progression and KS2 SATs results (n=112), of these 73 children attended the residential and 39 did not attend the residential. Progression is measured for reading, writing, and maths at three points in the year, in the autumn, spring, and in the summer (this is the KS2 SATs test), resulting in a total of 9 assessments for each school.

From all schools, only 5 assessments (reading, writing and maths at a single point in the year) were reported in numerical scaled scores (a standard calculation based on the raw test scores), all others were reported following categorical systems (equivalent to the scaled scores). As such all data was reduced to a single categorical system and coded for analysis (Table 1).

Table 1: Categories used by each school, their equivalent scaled score group, and the final categories generated for analysis

Scaled score equivalency	80-89 <i>Below</i>	90-99 <i>Working Towards</i>	100-110 <i>Secure</i>	111-120 <i>Greater Depth</i>
School 1	5GD (year 5 greater depth) EM (Emerging)	EM+ (Emerging +), DEV, DEV+ (developing),	S (secure)	GD (greater depth)
School 2	5S (secure at year 5) B (below)	B+ (below +), W, W+ (working towards)	S (secure)	S+ (above secure at year 6 expectation)
School 3	B (below)	WT (working towards)	EXP (achieved expected level for year 6) WA (Working At)	GD (greater depth)
School 4	B6+, B6++ (below year 6 expectation)	W6, W6+, W6++, (working towards year 6 expectation)	S6/Y6 (secure at year 6 expectation)	S6+, s6++ (above secure at year 6 expectation)
School 5	B (below)	WT1, WT2, WT3 (working towards)	A (achieved standard expected)	M (mastery of the subject)
Final category code for analysis	1	2	3	4

We extrapolated 'progression periods' between each assessment:

- Between Autumn assessment and Spring assessment = *progression period 1*
- Between Spring assessment and Summer assessment (this is the KS2 SATs test) = *progression period 2*

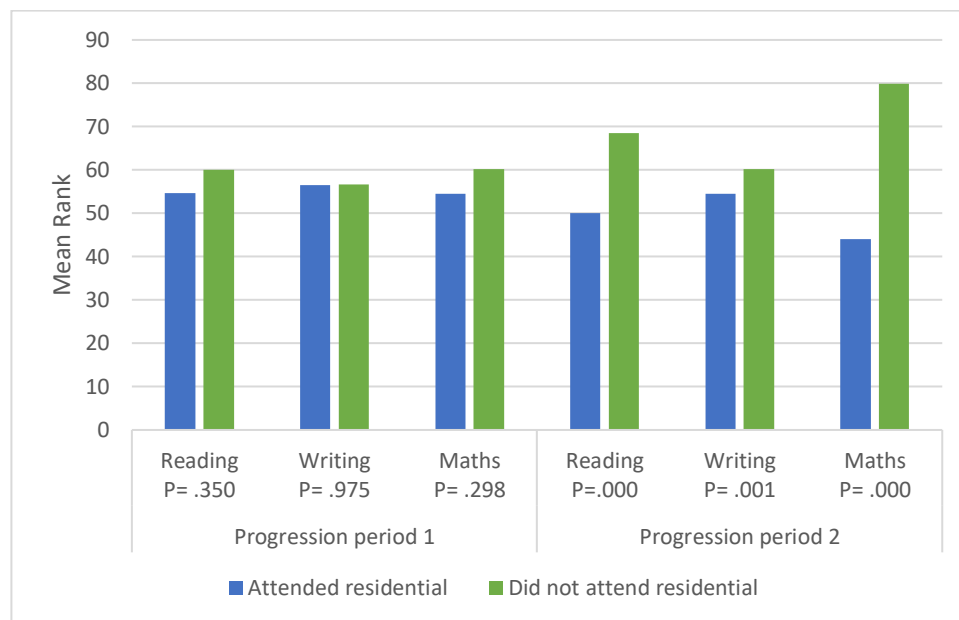
The magnitude of progression (the standard mean effect size: $ef = (t2 - t1) \div \sigma T1$) was calculated for each progression period. It is expected the results from *progression period 1*, having no intervention at this point, will be similar between all schools. The data are non-parametric therefore the *Mann-Whitney U* test was used to compare the magnitude of progression between progression periods and those that did and did not attend the residential.

Of note, the final categories were very coarse therefore much of the detail of progression (movement within the categories) is missing. For example, a child may have progressed from scaled score 91 to 99 between assessments and this will not be apparent in the analysis. This analysis can only report on movement across the broad category boundaries.

Also due to the relatively small sample size and the large time scale between assessments we are unable to control for external variables. For example, other interventions made by the school, parental involvement, or teacher absence during the time period.

Results In *progression period 1*, as expected results indicate a similar level of progression between those that eventually attended the residential and those that did not in all subject areas (reading, Mdn= .000, U=1285.5, P=.350; writing, Mdn=.000, U=1419, P=.975; and maths, Mdn=.000, U=1277, P=.298) (figure 3). In *progression period 2*, results show the magnitude of progression is smaller in the children that attended the residential than those that did not in all three subject areas (reading, Mdn= 1.3298, U=549.5, P=.000; writing, Mdn=1.6611, U=955.5, P=.001; and maths, Mdn=1.2225, U=511.5, P=.000) (figure 3). These results indicate the children that attended the residential before sitting the SATs exam did not progress as much in reading, writing and maths during that time period as those that did not.

Figure 3: Progression between assessments



Mean ranks indicating magnitude of progression for *progression period 1* (between assessment 1 and assessment 2) and *progression period 2* (between assessment 2 and assessment 3, the KS2 SATs test). P values (P) are 2-tailed and indicate significant difference when <.05 and indicate similarity when >.05.

Analysis of ROPELOC survey results

The ROPELOC survey contained 47 questions (not including control questions) encompassing 15 factor groups (Table 2). Eight schools took part in the ROPELOC survey with a total of 163 children completing both surveys, of these 78 attended the residential (36 female, 40 male, 2 children didn't identify a gender) and 85 did not attend the residential (40 female, 45 male).

Table 2: Factor groups and number of related questions

Factor	Description	Number of associated questions
Co-operative teamwork	Cooperation in team situations	3
Self Efficacy	Ability to handle things and find solutions in difficult situations	3
Leadership Ability	Leadership capability	3
Internal Locus of Control	Taking internal responsibility for actions and success	3
Active Involvement	Use action and energy to make things happen	3
Open Thinking	Openness and adaptability in thinking and ideas.	3
Quality Seeking	Put effort into achieving the best possible results	3
External Locus of Control	Accepting that external issues control or determine success	3
Self Confidence	Confidence and belief in personal ability to be successful	3
Social Effectiveness	Competence and effectiveness in communicating and operating in social situations	3
Stress Management	Self-control and calmness in stressful situations	3
Overall Effectiveness	The overall effectiveness of a person in all aspects of life	3
Time Efficiency	Efficient planning and utilization of time	3
Coping with change	The ability to cope with change	3
Academic Performance	View of how well students feel they perform in Reading, Writing and Maths	5

Following Richards, Ellis and Neill (2002) the survey data were tested for internal consistency using Cronbach's alpha coefficient of reliability. The result indicated a very high internal rate of consistency (0.960). The removal of individual questions would have altered this by only 0.001 point either way, therefore all original survey questions were kept for analysis.

To examine the results LEQ (Life effectiveness questionnaire) scores were calculated for each factor group of questions for each survey (T1=first survey, T2=second survey) by calculating the average

answer for each group of questions related to each factor for each survey. The standard mean effect size (ef , the magnitude of difference) between T1 and T2 for each factor group was calculated ($ef = (t2 - t1) \div \sigma T1$). The final data are ordinal and non-parametric therefore the *Mann-Witney U* test was used to compare effect sizes.

Results. Results indicate significant difference between children who attended the residential and those who did not (figure 4). The magnitude of change for all factors between the first survey and the second survey were positively greater in children who attended the residential. A significant positive change ($P < .05$) in children's responses were found in seven factors for those who attended the residential than those who did not:

- Cooperative Teamwork (Mdn=.000, U=2466, P=0.005)
- Internal Locus of Control (Mdn=.000, U=2519, P=0.008)
- Leadership Ability (Mdn=.000, U=2579.5, P=0.014)
- Open Thinking (Mdn=.000, U=2495, P=0.006)
- Quality Seeking (Mdn=.000, U=2553, P=0.011)
- Social Effectiveness (Mdn=.000, U=2516, P=.008)
- Stress Management (Mdn=.000, U=2560.5, P=0.012)

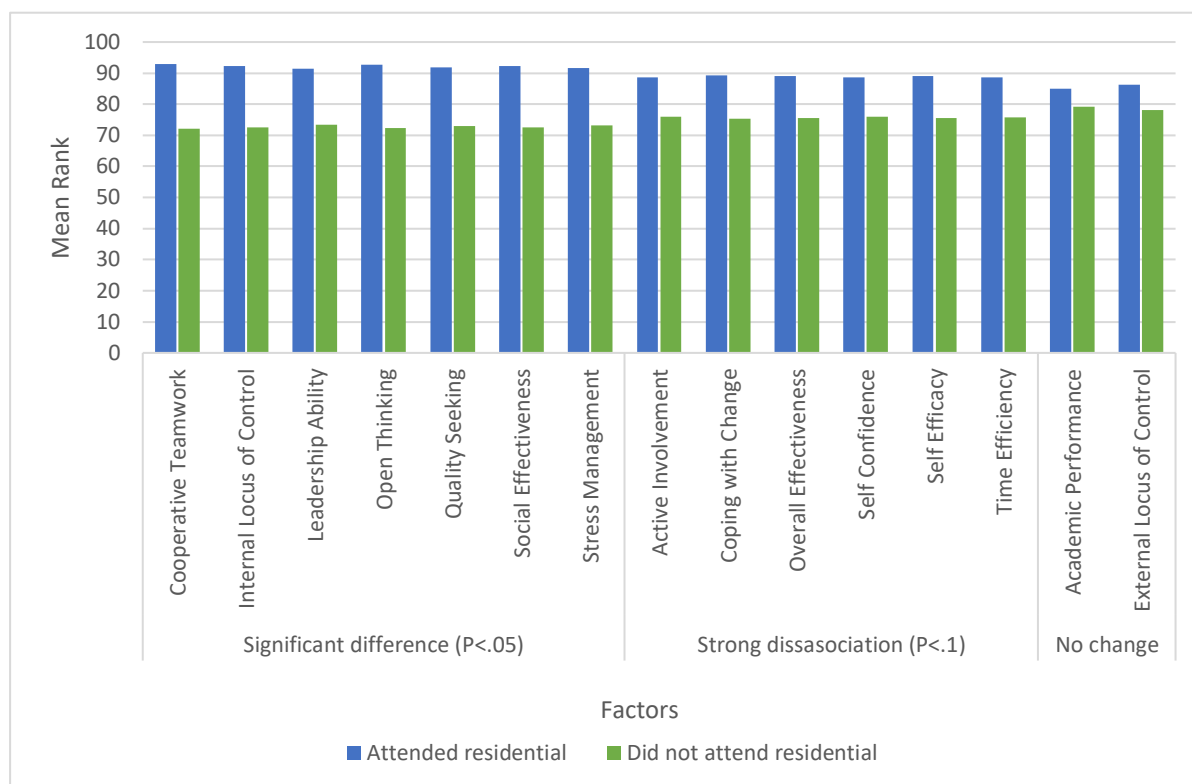
The results of the following six factors indicate an elevated trend towards significance ($P < .1$, 90% confidence):

- Active Involvement (Mdn=.000, U=2804, P=0.87)
- Coping with Change (Mdn=.000, U=2741, P=0.056)
- Overall Effectiveness (Mdn=.000, U=2768, P=0.068)
- Self Confidence (Mdn=.000, U=2798, P=0.084)
- Self Efficacy (Mdn=.1841, U=2759.5, P=0.064)
- Time Efficiency (Mdn=.000, U=2790.5, P=0.081)

Only two factors indicated no clear change, the child's view of their own Academic Performance (Mdn=.000, U=3080.5, P=.433) and External Locus of Control (Mdn=-.5522, U=2981, P=.266).

Considering gender differences, the positive change in Cooperative Teamwork in females is significantly ($p=.011$) larger than males who attended the residential and the results for Open Thinking suggest the same trend ($P=.52$).

Figure 4: The magnitude of change for survey responses for each factor group before and after the residential trip by pupils who did and did not attend the residential



Interviews, focus groups and field notes

Six members of staff who attended the residential experiences with the pupils in 2018/19 were interviewed (4 year 6 teachers, 1 year 6 teaching assistant and 1 head teacher). The observations made in field notes during visits to residential complement the evidence from the interviews.

Whilst the interviews covered different schools and residential trips and recounted different stories, there is a remarkable congruence between them, a ‘theory in mind’ that, when combined, offers a comprehensive ‘theory of change’ (Figure 5). The model shows many similarities to the original theory of change developed from the Learning Away evidence. It reinforces the Learning Away findings about the personal development that takes place on residential. As Williams (2013) suggests, the residential and their impacts emerge as complex systems of interacting factors producing diverse outcomes at an individual level. However, a consistent model of effective practices emerges from the combined evidence of the interviews and the field notes. The key inputs afforded by the residential and identified by the staff in the interviews and observed during the residential are:

- Challenging, collaborative and enjoyable tasks outdoors
- Relationships more broadly, including peer to peer, pupil to staff and pupil to instructor, and inculcating an atmosphere of mutual trust
- The novel, real and intensive nature of the experiences and their setting
- A range of new ways of teaching and learning for pupils and staff
- The importance of informal time in building new relationships and reflecting on experiences
- The community feel inculcated by eating, socialising, playing and sleeping together.

According to the staff, these conditions lead to a range of outputs that manifest during and post-residential:

- Friendship including new friends, new ways of being friendly and friendships across normal social groups
- A sense of achievement
- A growing sense of motivation to learn and be part of the community
- Growing respect for each other
- Pro-active behaviours in the tasks, in community life and socially

Staff offered considerable evidence of the transfer of these attributes to the classroom in ways that were more or less sustained and could be enhanced by changes in teaching practices:

- Application to learning
- Awareness of capabilities and interests between peers and by staff
- Changes in social behaviour

In the view of staff, reflecting on these and previous residential, these changes had the following impacts:

- Enhanced and transformed relationships
- Positive interplay between engagement and progression
- Resilient, mindful pupils with enhanced metacognition

Learning Away Schools' Theory of Change

Long term impacts

- Relationships
- Engagement – progression
- Resilience – mindful
- Family relations

Outcome Application

- Facing up to challenges
- Stories to tell
- New social skills and knowledge
- New learning skills

Outcome Capability

- Awareness of capability by pupils of themselves & each other; & by staff of pupils

Outcome Behaviour change

- Less falling out
- Friendlier
- Supportive

Output Friendship

- New friends across abilities and gender.
- New style offering support, collaboration

Output Achievement

- Tenacity
- Determination
- Experiences of success

Output Motivation

- Self-belief
- Confidence
- Self-esteem

Output Respect

- Feeling valued
- Trusting and trusted

Output Pro-active

- Independence
- Creative
- Responsibility- organisation

Tasks

- Challenging
- Collaborative
- Real
- Fun

Relationships

- Different amongst peers, between staff and pupils and between instructors and pupils.
- New friendships.
- Atmosphere of trust.

Environment

- Novel
- Intensive
- Real

Learning processes

- Social learning - storied
- Integrated & real
- Diverse interests & capabilities
- Staff observation

Informal time

- New life skills
- Time for relationships
- Adults experienced in new ways

Overnight stay

- Community living
- Shared experiences
- Intensive and novel

Other

Planning for Learning Away programme

Most agreed staff and instructor roles prior to departure. In one case, geographical curriculum work was undertaken before and after. In another case, a weekend residential took place at the end of year 5 to prepare for longer autumn trip in year 6.

Planning for sustaining the impact

Most staff reported building on serendipitous outcomes for individuals, the class and the curriculum.

Learning problem or opportunity

New approaches to living and learning in an extended, novel and intensive setting.

Figure 5 Learning Away Schools' Theory of Change

How the 'theory in mind' is used. This 'theory in the mind' is deployed by school staff as a narrative to justify an approach to teaching and learning (the residential) that is demanding of school and family resources. Schools undertaking residential before SATs consciously used the experience to create class cohesion, closer relationships between staff and pupils and also to start preparing the pupils for transition to secondary school. The Brathay ethos of fostering independence in the children is highlighted as very important. Observation and interviews on residential showed that schools going before SATs are making the decision to specifically go to Brathay. The sense of place was important as was the ethos of the Brathay Trust and the staff expertise. Schools undertaking residential after SATs used the experience as a reward/treat. The 'theory in mind' model is also used reflectively as a comparison for approaches taken in school and for the development of future residential experiences.

Comparing the survey with other qualitative data. The theory of change can be triangulated with the results of the quantitative survey (table 1) providing additional confidence in a number of the themes identified in the focus groups, observations and interviews. *Cooperative teamwork* is evident in the nature of the tasks and the development of learning relationships. It is also notable that this persists in the classroom post-residential. *Leadership ability, internal locus of control* and *active involvement* emerge in a range of pro-active behaviours which teachers also claim persist post-residential. *Open thinking, overall effectiveness* and *time efficiency* correspond with a number of the learning processes encouraged by the residential experiences and, again, are likely to persist post-residential. Character development is highlighted by the increases in *self-efficacy, self-confidence, coping with change* and *stress management* and represented in the theory of change by the pupils' sense of achievement, enhanced motivation and ultimately more resilient attitudes.

Table 3: A comparison of the results of the ROPELOC Survey with the 'Theory of Change' themes

(HS = Highly significant; S = Significant)

ROPELOC survey factors	Tasks, outputs, outcomes and impacts identified by qualitative means
<i>Cooperative teamwork (HS)</i>	The nature of the tasks The development of learning Relationships
<i>Leadership ability (HS)</i> <i>Internal locus of control (HS)</i> <i>Active involvement (S)</i>	Pro-active behaviours
<i>Open thinking (HS)</i> <i>Overall effectiveness (S)</i> <i>Time efficiency (S)</i>	Learning processes
<i>Self-efficacy (S)</i> <i>Self-confidence (S)</i> <i>Coping with change (S)</i> <i>Stress management (HS)</i>	Sense of achievement Enhanced motivation Resilience

[The quality of the residentials.](#) The interviews and field notes also provide understanding of some of what the staff consider to be the significant elements of the residential experience impacting both during and after the residentials.

'Just being away in such a different setting doing such different things supports our geography and creative writing curriculum. I wouldn't like to instrumentalise these experiences by bringing the curriculum with me. It's nice to let moments arise for different pupils in different ways and respond to that. I'd hate to start ticking the boxes while we're away'.

'It's good for the kids to see the staff can be less confident and struggle a bit. It makes us human and the trust between us goes way up when they can offer us help and we really appreciate it'.

The school staff interviewed offered clear reasons for why they continue to choose the provider and how the way the centre staff work supports social and curriculum learning outcomes.

'We did a traffic survey in the local town. It was so different from the school neighbourhood. So, we repeated the survey when we got back to school and talked about all the differences and what they might mean for what it's like to live in the two places.'

The Brathay 'ethos' is touched on by several interviewees. The quality of the setting, the experiences and the facilitation is commented on by both pupils and staff. This ethos, as it is perceived by the pupils and staff from the schools, is described as a series of expectations of the pupils. They are expected to take responsibility in numerous ways, a positive mind set to the activities and other new experiences; an expectation of a helpful and collaborative approach; for being on time with the right clothes and personal equipment; for domestic chores; for community tasks. Centre staff role model this approach in their support for the children. They also use every opportunity to link activities with a broad range of curriculum content. School staff refer to this 'ethos' as the reason why they value residential experiences and have a strong preference for this provider over others they have tried.

[Impacts on teaching and learning post-residential.](#) The residentials have implications to teaching and learning on return to school. It provides pupils and staff with new strategies that support engagement and progress.

'We come back with lots of stories and can have a laugh about it with the kids and amongst the staff. The kids can laugh at us too. We can use reminders from the trip to encourage them to face up to challenges or be determined like they were canoeing or something'.

'A pupil who was known for his bullying behaviours and shunned by his peers, was one of the first pupils to offer help and support to others challenged by some of the activities. He made friends at the centre and these friendships, and his helpful behaviour, have persisted back at school'.

Residentials also highlight the difficulties some schools have to offer the best teaching and learning as they understand it.

'I like the opportunities we get to find different ways of working and different interests and capabilities amongst the kids. I'd like to work more like this at school, but we don't have any outdoor space here'.

The importance of individual outcomes. Another strand from this evidence highlights the impact of residential experiences on individual pupils with personal issues that are impacting on both learning and socialisation. These are best illustrated by the vignettes the interviewees told.

'One high achieving pupil has been very shy and lonely in class. He came out of his shell on the residential speaking up a bit more. Some of the others asked him to join in with them and now has friends in class'.

'A pupil who was an elective mute made friends with the instructor's dog and, at first with the dog and then with the instructor and other pupils, started to talk again'.

'Our most badly behaved, low achieving and poorly attending pupil told the chef at the outdoor centre that he loved cooking. He spent most of each day preparing, cooking and serving the meals for everyone else. His picture, with a big grin, is now on the kitchen hatch at school and, most days, he helps prepare and serve the food in school'.

Staff claim that some pupils, especially those experiencing challenges in their personal lives, are supported by the residential subsequently remaining engaged in the classroom and so achieving their predicted attainment results. These, in other circumstances, were perceived to be at risk. Discussion with one teacher on the impact of residential on attainment suggests that it may have more to do with children attending school regularly as a result of better relationships between staff, pupils and parents, and therefore reaching their potential grades rather than falling back. This interpretation was repeated by several staff and across schools and residentials. These claims are also supported by the SATs results for the pupils concerned.

Knowledge, understanding and application. Of wider interest to all pupils are the claims made by staff that residential experiences impact on understanding and application rather than knowledge acquisition (reading, comprehension) and skill acquisition (spelling, punctuation and grammar; calculation; mathematical fluency) which are tested by SATs. Examples were given in relation to both numeracy and literacy.

'The instructors asked the children to guess how heavy a canoe was and, then, whether they thought they could lift it. He then asked them how much they thought they could lift on their own before asking them how many of them it would take to carry the canoe to the water. The children gave him the right answer but then said that there were more of them than they needed but that this would make the carry even lighter and easier'.

This goes some way to providing an explanation for why staff believe the residential experiences can and do make a difference to progress and attainment, yet the progress and attainment data suggests otherwise. Staff are taking into account a broader and deeper concept of progress and attainment that is not captured by the tests.

Discussion

As Williams (2013) suggests, educational residential experiences are complex involving a number of factors that interact with the pupil and the class in ways that are hard to predict at an individual pupil level. All that can easily be said is that they are widely impactful. However, analysed at the group level, a range of outputs and outcomes recur and become stable. These outputs and outcomes are valued by pupils and teachers and, in turn, create the potential for a range of impacts most notably on the quality of social and learning relationships within the class; and engagement

with learning. These include step changes in development noticed in class and in the home and often described as enhanced confidence and resilience. Young people are described as showing more pro-active and responsible behaviours; having new friendships and new qualities of friendship; and exercising new learning strategies especially social learning. In turn these outcomes have an impact on meta-cognition, progress, socialisation and maturation and, in some cases, attainment.

It is clear that individual pupils are helped to sustain their attainment during challenging times. However, there is also growing evidence that understanding and application, not so readily assessed by SATs, are impacted significantly. It could be argued that the confidence that arises from experiences of knowledge understanding and application enhances learner engagement rather than that learner engagement necessarily precedes impacts on attainment. Complexity theory would argue that there is an important inter-relationship between engagement and attainment rather than a cause and effect relationship. The evidence indicates how this is enhanced by the pedagogy of residential experiences offering novel, intense, real and relevant experiences that are further enhanced by social learning and reflection. The impacts are engagement, personal development and new learning skills including social learning and meta-cognition.

Developing a theory of change (ToC) is a helpful middle road between complexity and cause and effect models. It captures the time line of inputs (the residential), outputs, outcomes and impacts whilst allowing for a complex of structural and process factors on the residential, in the pupil, in the class and in the classroom to be recognised. Staff intuitively use their version of a ToC, held in the mind, to assess the trajectory of individuals and groups of pupils making interventions to enhance potential impacts and improving practice for future applications. They can readily articulate their model to other staff ensuring a collective approach to the interventions.

Indications are that relationship and confidence building has the most post-residential impact. Staff are able to use the experience of seeing children achieve in different ways and overcome obstacles and remind the children of that when they are facing difficulties at school. Barriers were broken down and eyes opened often with regard to individual children excelling in a way that they cannot at school because of time constraints, space and curriculum.

Schools going on residential before SATs are consciously choosing to do so. Schools then reinforced the personal development lessons learned on residential and in one case used the geography study that took place at the centre to inform the work they subsequently carried out in school. In these schools, creative writing back at school using vocabulary learned on residential about their environment and also reflective writing was used to capture learning that had taken place.

It is worth reflecting that, by asking what the impact of a residential experience is on attainment in the school, we may be asking the question back to front. If the question was 'what is the impact of teaching and learning in the classroom is on residential experiences?' the ToC could make more sense, especially to the pupils. If the residential is perceived by them as real and relevant, then it is their ability to apply what they have learned in school to the experience of the residential that matters most. The answers to questions such as how to lighten the load of carrying a canoe; how to use a map to plan a journey; how to plan a healthy meal; how to use a paddle effectively to make a canoe move; how to respond to the adults who treat them differently; how to respond to staff who reveal more of themselves; how to adjust their identities to the new interests and capabilities they find within themselves; how to change their views of the other children, make and keep new friends and work together; how to apply their understanding and their application of a wide range of knowledge and skills; become the outcomes of effective teaching and learning in the classroom rather than the other way about. In this version of an impact model, a range of practical tests are performed all the time and readily evidence the attainment of the pupils in a wide range of hard and

soft curriculum areas. Staff frequently comment on how the experiences of a residential allow them to see the capabilities of a wider range of their pupils than are typically revealed in a classroom suggesting a more equitable assessment opportunity. The caveat would be, as one teacher pleaded, 'don't instrumentalise the experience'.

Conclusions

For a small-scale comparative study, the research design is strong. Although there is variability between the schools, much of this has been avoided by matching the schools within one Local Authority and using one residential provider. Closer matching of the schools could only be achieved by much greater levels of intervention requiring a much longer time frame and a bigger study. The progress and attainment data are not entirely reliable. The final categories were very coarse therefore much of the detail of progression (movement within the categories) is missing. This analysis can only report on movement across the broad category boundaries. Also, due to the relatively small sample size and the large time scale between assessments we are unable to control for external variables. For example, other interventions made by the school, parental involvement, or teacher absence during the time period.

However, taking the results at face value they indicate that pupils taking part in residential experiences prior to their SATs assessments progressed more slowly in reading writing and maths, as this is measured by SATs assessments, than pupils who went on their residential after their SATs assessments (Figure 3). This result is regardless of gender, socio-economic background or ability and is consistent across all schools that provided progress data.

Residential experiences do support vulnerable learners enabling them to achieve their expected results in SATs assessments. Vulnerable pupils who went on residential after their SATs assessments underachieved.

The survey results have a strong reliability and demonstrate a high correlation for the following impacts on personal effectiveness and locus of control (table 2):

- Cooperative Teamwork
- Leadership Ability
- Internal Locus of Control
- Open Thinking
- Quality Seeking
- Social Effectiveness
- Stress Management

All but two of the fifteen factors tested by the survey, Academic Performance and External Locus of Control, were shown to have been significantly enhanced or show an elevated trend towards significance.

The 'theory of change' (Figure 5) that emerges from the interviews, field notes and focus groups indicate that the long-term impacts of the residential experiences were:

- Enhanced and transformed relationships
- Positive interplay between engagement & progression
- Resilient, mindful pupils - metacognition

Early indications from the teachers' comments suggest that the residential experiences did have a positive impact on progress and that they sustained attainment amongst students likely, for personal and family reasons, to underachieve in relation to their predicted grades. The interpretation offered by the staff is that the confidence gained whilst away, coupled with the enhanced relationships with peers and staff, compensates for the negative impacts on learning being experienced outside of the school's control.

However, both the staff of the schools and the literature suggest that SATs are a poor measure of progress or attainment as they measure the use of skills as opposed to understanding and application. In addition, the preparation for SATs assessments stands outside the curriculum work undertaken during the rest of the year. A comparative study recently completed in Denmark with the same age group and using the Danish national test results found that 'UteSkule' one day a week for a year had no impact on attainment as measured by the national test. However, staff reported significant increases in both understanding and application in both literacy and numeracy. This supports the tentative findings of the Learning Away report and it will be interesting to see how this study will unfold in the light of these findings.

The qualitative data and the survey results seem likely to provide further supporting evidence to the Learning Away campaign as to the impact of residential on a range of outcomes such as wellbeing, confidence, peer to peer and student to teacher relationships.

Reflections

None of the schools provided progressive residential experiences or student leadership or co-construction. Most of the schools did not integrate the residential experiences into the curriculum. Learning Away concluded that all these criteria enhance impact. A study that focuses on the impacts achieved by schools running '*brilliant residential*s' remains to be undertaken. If this was to proceed, it would be worthwhile focussing on the impacts intended for the residential. This might include attainment but could embrace a wider set of outcomes.

SATs are limited to assessing numeracy and literacy. Even in this domain, they assess knowledge and some skills providing little insight into understanding and application. If a future study seeks to examine the relationship between residential experiences and attainment in schools, a research tool that can assess attainment in both a broader and deeper sense should be developed.

This study adds further insight to the Learning Away findings of the importance of the informal time made possible by the intensive, 24/7 nature of a residential experience. The impact of residential on the development of both a learning and a social community, and the impact of this outcome on the classroom post-residential, merits further study.

Developing a learning community in year six while on a residential experience and sustaining and enhancing this back in the classroom highlights the value of social learning. Any success that can contribute to strategies such as this in primary education are potentially disrupted by the transition from primary to secondary. An experiment to explore how best to scaffold interventions to ease this transition and support secondary schools in developing social learning tactics, possibly aided by residential experiences, could make a significant contribution to a critical point in young people's lives when many begin to disengage from formal education.

Perhaps a future study could ask the question of impact differently i.e. 'what is the impact of learning and teaching in the classroom on the learning and development during a residential experience?' If residential are real world, albeit novel, experiences, and education aims to prepare young people for the real world, then perhaps the impacts that are worth 'measuring' are the capabilities of pupils during a residential experience. The evidence makes it clear that, in fact, school staff already use these residential experiences to make formative assessments of pupils' interests, capabilities, maturation, learning and social skills.

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