



THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

'Did you enjoy your holiday?' Can residential outdoor learning benefit mainstream schooling?

Citation for published version:

Christie, B, Higgins, P & McLaughlin, P 2013, 'Did you enjoy your holiday?' Can residential outdoor learning benefit mainstream schooling?', *Journal of Adventure Education and Outdoor Learning*.
<https://doi.org/10.1080/14729679.2013.769715>

Digital Object Identifier (DOI):

[10.1080/14729679.2013.769715](https://doi.org/10.1080/14729679.2013.769715)

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Peer reviewed version

Published In:

Journal of Adventure Education and Outdoor Learning

Publisher Rights Statement:

© Christie, B., Higgins, P., & McLaughlin, P. (2013). 'Did you enjoy your holiday?' Can residential outdoor learning benefit mainstream schooling?. *Journal of Adventure Education and Outdoor Learning*.

General rights

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact openaccess@ed.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.



‘ Did you enjoy your holiday?’ Can residential outdoor learning benefit mainstream schooling?

Beth Christie, Peter Higgins and Pat McLaughlin

Moray House School of Education, University of Edinburgh

Correspondence Address Dr Beth Christie Moray House School of Education University of Edinburgh Holyrood Road Edinburgh, EH8 8AQ	Telephone: 01241 856406 (Direct) 0131 651 6520 (Messages) Fax: 0131 651 6521 E-Mail: bethchristie@ed.ac.uk www.education.ed.ac.uk/outdoored/ http://www.education.ed.ac.uk/esf
--	---

‘Did you enjoy your holiday?’ Can residential outdoor learning benefit mainstream schooling?

Abstract

In the UK there is a long tradition of residential outdoor learning provision, however to date there is limited research evidence of the direct educational benefits of such experiences, and to both critics and supporters the distinction between such visits and ‘holidays in school time’ is not always apparent. This paper summarises an evaluation of one such programme used by a Scottish council as part of an initiative to raise pupils' achievement, and considers the direct educational benefits in relation to the current educational framework within Scotland. A mixed methods evaluation involving over 800 pupils combined psychometric analysis, participant observation, group and individual interviews, and was conducted before, during, and up to three months after each residential experience. Aspects were repeated over the course of two years. The personal ‘dispositions’ concept prominent in the National Curriculum Guidelines for 5-14 year-olds (in place during the fieldwork) provided an overarching analytical framework. The findings were then related to the development of the personal ‘capacities’ specified in the current curriculum in Scotland (Curriculum for Excellence). Therefore, this paper performs three functions: first it examines the educational relationship between residential outdoor learning and mainstream education in Scotland; second it considers the contemporary significance and continued relevance of outdoor learning more generally; and third it examines the relationship between qualitative and quantitative approaches to such studies. The aim of fostering positive ‘dispositions’, or ‘capacities’ is now prevalent in the curricula of many countries and so the findings may have significance beyond the UK. (250 words)

Keywords: residential education, outdoor education, outdoor learning, mainstream education, curriculum, mixed methods research.

‘Did you enjoy your holiday?’ Can residential outdoor learning benefit mainstream schooling?

Introduction

Many UK schools support residential outdoor learning excursions and these usually take place in school time. This is a significant commitment that requires staff time and resources, can cause disruption to in-school arrangements and has financial costs for the families. It would seem obvious that the justification for such widespread and significant educational investment would be evidence-based, and satisfy all parties (the government, education authorities, schools, families, and providers) that this effort is educationally worthwhile. Aside from a small number of PhD studies (Nicol, 2001; Christie, 2004; Simpson, 2007; Telford, 2010), there is limited high quality empirical research concerning residential outdoor learning. Much contemporary justification draws upon a handful of meta-analyses and reviews which suggest that these types of programmes can have a significant impact on participants in terms of their self confidence, social skills, motivation and their academic attainment (Cason & Gillis, 1994; Barret & Greenaway, 1995 [UK study]; Hattie, Marsh, Niell & Richards, 1997; Neill & Richards, 1998; Rickinson et al., 2004 [UK study]). Currently, the Paul Hamlyn Foundation are evaluating one of their own residential educational programmes, Learning Away. The six-year £2.25million initiative was launched in 2008 [<http://www.phf.org.uk>] and aims to support schools across the UK to develop innovative residential experiences, some of which may include outdoor learning, as an integral part of the curriculum. The Paul Hamlyn Foundation have not published any results at this stage.

Whilst such contemporary studies and heavily-funded initiatives suggest that outdoor learning experiences may further the development of a variety of young people, more research is necessary to investigate any specific educational benefits of such experiences in relation to the expectations of the stakeholders that permit and support such excursions in school time.

Prompted by such concerns this paper aims to contribute to this debate by discussing research findings relevant to the direct educational benefits of residential outdoor learning within the current curricular framework in Scotland. The evidence presented resulted from a mixed methods evaluation of a substantial initiative by North Lanarkshire Council, Scotland.

The ‘Raising Achievement’ Initiative

North Lanarkshire Council’s (NLC) Raising Achievement initiative was developed to allow young people to experience active, experiential learning through a combination of music, arts, drama, and residential opportunities, and was premised upon Gardner’s (1991) theory of ‘multiple intelligences’. Gardner (1991) argued that, whereas scholastic knowledge was 'strictly bound to school settings'; there was a need to develop 'connected knowing', where education is part of, rather than separate from, life (p. 113). His ‘multiple intelligences’ theory proposes that intelligence is not a single construct rather it is multi-faceted - comprising musical, bodily-kinaesthetic, logical-mathematical, spatial, linguistic, interpersonal and intrapersonal intelligences and natural intelligence (which relates to human relationships with the environment) (Gardner, 1999). Gardner believes that traditional education systems favour logical-mathematical intelligence, and consequently this bias limits the potential for those who are better suited to understanding and learning in other ways. NLC (1998) adopted this concept and ensured that opportunities were found within the ‘educational system for students to experience achievement and success at whatever level and in whatever context is appropriate’ (p. 5). A residential¹ programme called Aiming Higher with Outward Bound programme (hereafter referred to as the Aiming Higher

programme) formed one strand of this multi-faceted initiative.

Aiming Higher with Outward Bound

Every year, between October and February since 1997, NLC has contracted Outward Bound Loch Eil (OB) near Fort William in the West Highlands of Scotland, to provide 15 one-week programmes of activity that cater for approximately 25% of young people in the selected age group (14-16 years) within the Local Authority. This equates to over 1000 pupils a year being selected from 26 secondary schools. Places are allocated by NLC (see Table 1) based on school roll and the percentage of pupils entitled to footwear and clothing grants as this figure is used as an indicator of deprivation (NLC, 1998). The process of allocating pupils to places varies between schools (see Christie, 2004). Once the students have travelled by coach the three hours or so from their homes to the OB centre, they are split in to groups and spend the week engaged in a range of adventurous physical outdoor activities and exercises, and contribute to the domestic support provided by the centre.

Research Questions

Three research questions drove the evaluation:

- *Provision*: is the residential programme providing an opportunity for positive development?
- *Process*: does the process, pre- and post-course, support change?
- *Impact*: are there links between the overall Aiming Higher programme and the educational framework of the time?

The first and second questions consider the summative aspects of the Aiming Higher programme.

The third question considers the formative or process aspect, offering an opportunity to relate the evaluation to the broader educational framework in Scotland, and this has now been extended to the present curriculum.

Research Design

The evaluation required a contextual understanding of the residential experience at a macro-level (in relation to the curricular framework) and at a micro-level (in relation to the individual student). This was achieved in two ways, firstly by introducing an overall quantitative measure for the majority of students, both those attending the residential and those staying within school, and secondly by developing a qualitative approach which illuminated the individuals' interpretations of the experience. Both approaches were combined to provide a deeper understanding of the students' experiences before, during and after their residential within the context of their everyday school environment and the wider education system.

This context-based design resonates with that of Mannion, Doyle, Sankey, Mattu, & Wilson (2007) who reported that young people valued outdoor experiences 'because of the ways in which three dimensions inter-related: the inter-personal dimension, the activity dimension and the spatial dimension (or outdoor location)' (p.3). More recently Waite (2010) has discussed similar issues concerning the micro- and macro-contextualisation of schooling and the reconstruction of relationships between individuals, community and place. Both studies emphasise the significance and complexities of these relationships, and their influence. Our fieldwork was completed prior to these publications, yet we were aware of the general approach within the field at that time, consequently our research design was informed by a similar theoretical analysis of the field - the widely used 'three-circles model' of outdoor education (outdoor activities, environmental education, and personal and social education) introduced by Higgins (1995). As such our study attempts to produce research that can be understood at both the macro-level (educational framework in Scotland) and micro-level (pupils' self-perception) whilst taking account of the temporal, spatial and relational factors that exist within, and exert an influence upon, both arenas.

As this study is firmly grounded within a mainstream educational context it addresses an important concern noted by Hattie et al. (1997), that much research on adventure programmes

claims to provide insights which might “inform ‘regular’ educational contexts”, despite being conducted in isolation from the educational world that they assume to inform (p. 77). Similarly, it responds to Nicol’s (2001) point concerning conflation between the stated *aims* of an outdoor programme and the *claims* that could be made about its outcomes. He cautioned against jumping from an aim to a claim without giving due consideration to the educational aspect of the experience and the many steps that fall between these two points in programme design and evaluation. This is noteworthy, because if proponents of ‘outdoor learning’ claim it can deliver educational experiences that support mainstream in-school teaching, the educational intention, focus and content within a given programme must be clearly stated and ‘visible’.

Whilst it is important that research addresses the above concerns, such studies require a comprehensive research design, and in our study two significant tensions arose. First the contextual details (temporal, spatial and relational) that characterise social science research and which we sought to consider, generated complications. In common with Flyvbjerg (2001) our experience was of background conditions changing ‘without the researcher being able to state in advance which aspects one should hold constant in order for predictions to continue to operate’ (p. 45). Further, we acknowledge that the very programme-specific details that we sought to control, produce context-dependent interpretations which can have limited generalisability. To account for this we developed an analytical framework that extended the interpretation to include the educational framework of the time (particularly the Scottish 5-14 National Curriculum Guidelines (Scottish Office Education Department [SOED], 1991)). This generated high-quality, original empirical evidence that enabled us to comment on the curriculum-related benefits of such residential outdoor learning experiences. Consequently, our research design addressed another point raised by Hattie et al. (1997), that ‘most [adventure program] studies have focused on the summative rather than the formative process aspects’. They advise future formative studies to be integrated into a wider research program ‘that investigates theoretical concerns and processes that lead to positive change’ (p. 74). In this case we considered the wider educational framework as a context to support and develop change.

The second tension that arose related to the mixed methods design and the practicalities of combining research approaches. Robson (2004) cautions, ‘triangulation can help to counter all of the threats to validity’ yet it can ‘open up possibilities of discrepancies and disagreements among the different sources’ which can ‘raise logical and practical difficulties’ in the final stages of analysis (p. 175). We acknowledged this antagonism and used our philosophical stance and structural framework to steer the data analysis. This process allowed this incongruence to be valued as an opportunity to explore different aspects of the same phenomenon rather than a reason to question the methodological approach. As DeLisle (2011) states ‘an overriding philosophy’ within a mixed methods study is ‘the key to resolving difficulties as to the direction of the research, the data collection process, and the nature of the analysis’ (p. 104). Therefore by introducing the broader educational framework in Scotland as a common context, we were able to develop a unifying infrastructure which we used to scaffold the data and theme the analysis.

Sample

The population comprised 26 secondary schools, spanning three distinct geographical areas, including denominational and non-denominational schools, and ranging in size from approximately 450 to 1400 pupils. NLC also calculate a percentage deprivation figure for each school using footwear and clothing grant data available from the Scottish Government. Using these characteristics six secondary schools, almost one fifth of the total, were representatively sampled (see Table 1). One school (school 6) withdrew from the study at an early stage (but too late to select a replacement). The sample schools co-operated and committed to the full research process, despite the constraints of their school calendar.

Insert Table 1 Summary of sample based on 1999/2000 figures

Research Methods

The overall methodological structure combined a number of approaches: a Life Effectiveness Questionnaire (LEQ) (Neill, Marsh & Richards, 1997), participant observations, individual interviews, group interviews and informal interviews. Despite being considered emergent, mixed methods research has a history of use within education and the social sciences where the ‘messiness’ of social situations, enmeshed in the complexities of the real world, demand multiple investigative tools (Creswell & Garret, 2008; Greene, 2007, 2008). In the present case, the mixed methods approach was effective on theoretical and practical levels; theoretically, by including the macro- and micro-level perspective (as discussed previously) and practically, by having controlled access to large groups of young people at regular intervals via the school system. (See Christie (2004) for full details of the specific sampling approaches, interview schedule and observation protocol.)

The Life Effectiveness Questionnaire. The LEQ developed by Neill et al. (1997) is a self-report measure of 'personal effectiveness' comprising 24 items, divided into eight components of life effectiveness: achievement motivation, active initiative, emotional control, intellectual flexibility, self confidence, social competence, task leadership, and time management (Neill & Flory, 1999). It was administered ‘blind’ within each sample school to all fourth-year pupils one month pre-, one month post-, and three months post-residential (see Tables 1 and 2 for sample size and response rates). The sample was divided into an experimental group (those who attended the residential course) and a control group (those who did not attend the residential course). Only complete datasets were included in the final analysis. Overall response rates were higher for the first year of the data collection (1999/2000) (n=404) as compared to the second year (2000/01) (n=271) due to a number of external factors: school timetable, reliance on third parties to return data, pupil and teacher absence and the school inspection process. The experimental groups’ response rates accounted for approximately 25% of the total figures in Table 2. Despite indicating an imbalance in sample sizes between the experimental and the control group, statistical tests suggests that this did not affect the comparative analysis (Christie, 2004).

Insert Table 2 Sample response rates for Life Effectiveness Questionnaire (combined experimental and control group returns)

Mean scores from the pre-OB test for both the experimental and the control group were calculated to analyse the effectiveness of the samples, in other words how representative they were of their respective wider populations. The two groups are well matched in most respects (Christie, 2004), which may simply reflect the variability in the selection process and degree of social and economic deprivation within the local authority area. This interpretation supports the fact that the criteria suggested in the programme selection guidelines (NLC, 1998) could apply to many (in some cases almost half) of the pupils and explains the similarity between pre-residential LEQ scores for those attending the residential and those staying within school.

Participant observation, individual interviews and the research diary. Fieldwork, involving participant observation, and individual interviews was carried out with a randomly sampled group of students (n=8) at the residential centre during two of the fifteen week-long courses. On each occasion, one student was observed per day. On the fifth day each 'observed' student was individually interviewed. Another group member, usually a friend, was present during the interview to generate an informal atmosphere and encourage discussion. A research diary, updated daily during the fieldwork, served as a reliability check to verify the researcher's interpretation of a given situation against the observed students' version of events. Where interpretations were clearly different the two versions were discussed and the student's interpretation was accepted. Overall, the fieldwork examined the educational and developmental processes evident during the residential.

Group interviews with participants. Follow-up group interviews were conducted with the experimental group (n=53). Groups of six pupils took part in 45-minute long interviews, in school, during school hours, six weeks after the Aiming Higher programme.

Informal interviews with staff. In the early stages of the research, informal interviews were held with OB staff, Quality Improvement Officers within NLC and each of the 27 Outward Bound Co-ordinators (members of teaching staff nominated to liaise with NLC and Outward Bound and manage the initiative within each secondary school). The anecdotal evidence gathered provided an insight into the variability between individual schools' selection processes, pre- and post-residential experiences and the general ethos surrounding the initiative.

Combining approaches. Initially, the combined data were considered loosely with the eight components of the Life Effectiveness Questionnaire, then themed according to the dispositions concept (5-14 National Curriculum Guidelines) and the four capacities (Curriculum for Excellence). Aspects of this process are discussed in the following section and in greater detail in Christie (2004). This paper presents the data in terms of the micro-context (students' self-perception), macro-context (influence of the school environment) and the four capacities framework.

Dispositions: An overall framework for analysis that provides a clear curricular context

This paper asks if there are 'direct educational benefits to be gained from a residential outdoor learning experience within the current educational framework within Scotland.' To answer this question effectively we must outline the framework, and identify opportunities for links to be made to residential outdoor learning. Following completion of the research study in 2004, Scotland emerged from a period of educational review and the curricular framework changed from the 5-14 National Curriculum Guidelines (SOED, 1991) to Curriculum for Excellence (CfE) (LTS, 2010b). Some stability in these developments was essential and aspects of the 'old' curricular guidelines were mapped onto the 'new' curriculum. Pupils' broader educational development was a central consideration and this process incidentally reinforced the continued policy interest in residential outdoor learning, and has stimulated greater opportunities for outdoor learning more generally (LTS, 2010a; Christie & Higgins, 2012). Before exploring these opportunities, we examine the original analytical framework: the dispositions concept. This concept linked the 'old' and 'new'

curricula, as noted above, providing a common narrative for the research findings that can be used to articulate any direct educational benefits of residential or other outdoor learning experiences.

The ‘dispositions’ are described by LTS (2000) as helping to ‘guide pupils in making decisions and taking action’ by providing them with a ‘fundamental basis for a personally rewarding life and an effective community’, and the documentation suggested that these should ‘find expression in the curriculum that pupils study, in the contexts in which their learning is structured and in the relationships that encompass both their learning environment and later life’ (p. 5). The five dispositions are:

- *A commitment to learning.* Throughout schooling and to equip them for adult life, children need both to acquire new information and skills and to make new connections and meanings in what they have learned. Learning becomes an exciting and rewarding lifelong process.
- *A respect and care for self.* A sense of self-worth brings a capacity for autonomy and motivation. It is the basis from which care for others grows. It is strongly linked to achievement and attainment.
- *A respect and care for others.* Recognising that we are interdependent helps pupils develop qualities of co-operation, mutual support and respect for the diversity of people, cultures and beliefs.
- *A sense of social responsibility.* An awareness of positive social attitudes, principles and skills will help pupils become competent and positively disposed to participate in society. A commitment to the environment will be engendered.
- *A sense of belonging.* Being part of and committed to the life of the school is achieved when pupils feel valued, knowing that their opinions count and their concerns are addressed. (LTS, 2000, p. 5)

Having established the educational framework we must now consider the claims traditionally made for outdoor learning, which have been loosely summarised as developing a

respect and care for self, others and the environment. These arose through an attempt to define the aims and content of outdoor education at the 'Dartington Conference' in 1975 and have been widely promoted and developed (see Mortlock, 1984; Hopkins & Putnam, 1993; Cooper, 2004). Accepting these as fundamental and desirable outcomes, we can see similarities between this construct and the general theme of the dispositions framework outlined above. Therefore by using the dispositions framework as the structure for the overall analysis, the research findings can be related to both experiential outdoor learning and mainstream approaches to education (Christie, 2004).

Since the Scottish Parliament launched CfE in 2004 less emphasis has been placed on a subject-oriented curriculum, instead the development of personal skills and positive attitudes of young people has become a central theme. Young people are encouraged to become 'successful learners', 'confident individuals', 'responsible citizens' and 'effective contributors' (LTS, 2010b). These four 'capacities' resemble the structure and nature of the dispositions framework discussed earlier, and perhaps align even more closely with the claims made for outdoor learning. This resonance reinforces the significance of making explicit any direct educational links between the role of residential outdoor learning and educational policy, as these themes are clearly valued by virtue of their inclusion in 5-14 National Guidelines as dispositions, and their re-statement as capacities within CfE.

Additionally, it is clear that the flexibility of CfE allows schools to arrange much of their teaching outdoors if they wish to do so. This approach has been convincingly advocated by Beames, Atencio and Ross (2009) who argue that 'situated learning in the world outdoors looks exceptionally legitimised by CfE and exceptionally able to deliver CfE's purposes' (p. 42). Further, reflecting the policy interest in the curricular potential of outdoor learning, the Scottish Government funded an initiative called 'Outdoor Connections' (LTS 2010a) (guided by an 'Outdoor Learning Strategic Advisory Group (OLSAG)) and a major research programme; the results of which have been published in a series of reports and summarised by Nicol, Higgins, Ross and Mannion (2007). Through analysis of this and other research OLSAG and LTS staff have identified ways in which

outdoor learning might deliver the CfE 'capacities'. It is not clear how such developments will be encouraged, the expectations of Government, and what constitutes 'good practice', and this is an on-going process led by the government's educational support agency - Education Scotland.

In terms of the evaluation, these curricular aspects offer an analytical framework that addresses a number of issues: first they offer a clear structure and rationale to guide the mixed methods approach; second they ground the research within the macro- and micro-contextualisation of schooling by simultaneously offering broad curricular links and opportunities for pupil narratives; and finally they link outdoor learning to mainstream education. Therefore by using the dispositions concept (5-14 guidelines) and the four capacities (CfE) we can confidently consider whether residential outdoor learning experiences articulate with direct educational benefits (pupil capacities).

Analysis of Findings

The results of the study are presented below. Where appropriate the analysis considers statistical significance and qualitative findings separately, and also the context in which the results were collected. This context is important in attempting to explain the findings, as Salkind (2000) suggests, 'statistical significance in and of itself is not very meaningful unless the study that is conducted has a sound conceptual base that lends some meaning to the significance of the outcome' (p. 18). Bakeman (1992) refers to a concept called 'real world significance' whereby 'statistical significance is not taken as the only indicator of any notable effect' (p. 168). Acknowledging this, and addressing the points raised earlier by Waite (2010), Nicol et al., (2007) and Mannion et al. (2007) concerning the influence of the learning context and the complexity of temporal, spatial and relational factors within the research domain, the findings from the LEQ analysis were also considered in relation to the broader educational context - the 5-14 curriculum guidelines, the dispositions and the Raising Achievement programme (macro-contexts).

Quantitative Study (Life Effectiveness Questionnaire)

This section presents a summary of the quantitative evaluation (see Christie (2004) for a full discussion). Raw data from the LEQ results were analysed by using Statistical Package for the Social Sciences (SPSS) to perform a number of Analyses of Variance (ANOVA) tests. In this case, the ANOVA compared the experimental group (those who went on the residential) with the control group (those who remained in school) at various intervals over two years of the programme (1999/2000, 2000/2001), providing an overview of both groups before, one month after, and again three months after the residential. Each period of data collection is referred to as a given time series, one month pre-residential is referred to as time series 1 (t1), one month post-residential is time series 2 (t2), and three months post residential is time series 3 (t3), therefore we can compare the data as t2-t1 (one month post-residential compared to one month pre-residential), t3-t2 (three months post-residential compared to one month post-residential) and finally t3-t1 (three months post-residential compared to one month pre-residential).

In Figure 1 three bar charts present the mean pre-residential scores, the mean post-residential scores, and the mean three-month post-residential scores, respectively. When the scores are compared there is no obvious patterns of benefit from the residential experience for the experimental group at either the individual component level, or the overall level. Besides the experimental group not achieving any consistent pattern of benefit from the course, their relative strengths and weaknesses in personal effectiveness remain comparatively similar to the control group. Therefore, the first and perhaps the most obvious conclusion to be drawn is that there is no consistent overall statistically significant effect, despite a few moderate changes in some areas.

Insert Figure 1 Mean Life Effectiveness Scores

However, these charts can be interpreted in a number of ways. First, when examining the sample as a whole (both experimental and control groups) a few moderate changes between some of

the components are evident. The bar-charts are presented in rank order, so for example when the results are compared across each bar-chart, and amongst both groups, the individual components of achievement motivation and active initiative score highly, compared to emotional control, task leadership and time management. This finding is present across both the experimental and the control group and consistent across each time series, thus demonstrating a close match between the population and sample.

Second the largest differences between the time series, for both the experimental and the control group can be found between the lowest scoring components; time management and task leadership. For example, if we consider time management we can observe that the actual differences in scores between the groups ($t_2 - t_1$) are 0.43 for the experimental group and 0.37 for the control group, both with levels of significance of $p \geq 0.05$. This finding may reflect the nature of the programme delivered on the residential as the students' activities are largely prescribed by the course organisers (in this case residential centre staff), therefore there is little opportunity for students to manage their own time. This explanation supports the experimental group results. However, time management also ranks as a low scoring component within the control group, possibly reflecting the timetabled nature of the school day and the limited opportunity for the development of time management. These explanations account for the rank order but not the increase between the time series. The increase is consistent across both groups, therefore suggesting a possible school or developmental influence common to the whole population.

Conversely, the smallest differences between the time series for both the experimental and the control group can be found between the highest scoring components; achievement motivation and active initiative. For example, if we consider achievement motivation we observe that the actual differences in scores between the groups ($t_2 - t_1$) are 0.18 for the experimental group and 0.07 for the control group, both with levels of significance of $p \geq 0.05$. This finding may reflect a slight co-intervention bias in relation to the broader Raising Achievement initiative which had been launched in all schools in NLC approximately one year before the Aiming Higher programme

began. At that time the ethos within school was geared towards 'raising achievement', and campaigns were developed involving, for example, posters, special assemblies, musical initiatives, drama productions and various awards schemes, consequently, students had been encouraged to consider 'achievement' and to become motivated to achieve. Therefore the LEQ may be measuring the relative success of those individual campaigns as part of the broader Raising Achievement initiative, as students gained high achievement motivation scores across both groups, across each time series. This consistency suggests that there is a possible school or developmental influence common to the whole population.

Thirdly, whilst the sample as a whole (both experimental and control groups) shows slight changes between some of the components, there is little difference when the overall totals are compared. For example, between time series and amongst groups, the individual components of achievement motivation and active initiative score highly, compared to emotional control, task leadership and time management. This observation confirms the point raised earlier concerning relative similarities between those who did, or did not, go on the residential. Therefore establishing a very close match between the groups at the outset of the study, further indicating that any initial differences between the two groups are minimal and unlikely to affect the study.

Fourth, the full programme cycles through a rolling schedule of 15 week-long courses with different students and instructors, between October and February each year. As there were no changes made to the residential course during the fieldwork it is reasonable to conclude that the programme remained consistent throughout the study. To confirm this we examined whether there would be a difference between LEQ scores in years 1 (1999/2000) and 2 (2000/2001) of the course; this analysis produced no notable difference. Having established that the programme was consistent, this finding supports the general conclusion that in terms of the parameters of the LEQ evaluation, the residential programme had no consistent effect on the pupils.

Finally, there is one clear pattern throughout the analysis, that is the rank order remains reasonably consistent for both experimental and control groups over a four-month period and three

surveys, despite an intervention for the experimental group. The consistency of the results tells us that despite the pupils' having a stable view of themselves, there are some aspects of self-perception that may warrant support, such as emotional control, task leadership and time management. In terms of LEQ values, these low scoring components averaged 5.59 across each time series as compared to higher scoring components such as achievement motivation and active initiative which averaged 6.61. As the LEQ was not designed to measure 'life effectiveness' in relation to the Scottish school curriculum we must determine how this finding could translate into such a context, and consider what implication this may have for the field and future research; this will be considered in relation to the qualitative analysis and addressed in the discussion section.

In summary, the findings from the quantitative study demonstrate a remarkable stability in the pupils' self-perception as measured by the LEQ, despite a residential outdoor learning intervention. There are however some specific LEQ components where there are marginal but not statistically significant differences.

Qualitative Studies

As outlined earlier, a qualitative study was conducted alongside the LEQ analysis. All interviews were transcribed, analysed, coded and subjected to inter-rater reliability checks. Full details of this and the methods, analysis and findings can be found in Christie (2004). The group interviews, the individual interviews and the participant observation data were analysed using the dispositions concept as the main analytical framework. The original interview transcripts and observational data were reduced into themes which directly related to each of the five dispositions (outlined earlier). Some data fell naturally between two themes, for example there was a degree of overlap between '*a sense of belonging*' and '*a sense of social responsibility*'. This 'overlap' was accepted as demonstrating the inter-connectedness of the concepts and was investigated through the inter-rater reliability tests, thus reducing the ambiguousness of the data and increasing confidence in the reliability of the analysis. A brief and representative summary of the qualitative findings is

presented below in two sub-sections; students' self-perceptions (micro-context) and the influence of the school environment (macro-context). The quotes used in these sections were purposively selected from the group and individual interview transcripts to demonstrate typical responses.

Notwithstanding the rigorous data analysis and inter-rater reliability process, this evidence must still be considered alongside the quantitative results and situated within the broader educational context in which the Aiming Higher programme operates. Discussing the data comprehensively in this way, that is including both the qualitative and the quantitative findings, reinforces the mixed methods approach and allows for a clearer discussion of the direct educational benefits.

Students' self-perception (micro-context). Virtually every pupil cited their residential experience as contributing to an improvement in their self-confidence and ability to cope in social situations. For example one girl said that before her residential she would 'just sit and listen and never speak out or nothing', whereas now she 'speak(s) out more freely in class'. She further commented:

I used to just stay with my group of friends and all that but now I just talk to everybody ... 'cause during the week you just spoke to anybody that you like, they didn't know what you were like so it was a chance to tell them things that you enjoyed and that.

Using the eight components from the LEQ as comparable criteria between the quantitative and qualitative approaches at an individual student level, we can state generally, that pupils valued changes in their self-confidence and social competence because they were directly relevant to areas of academic work that they regarded as important. In other words, they could see how the personal and social skills that they developed during their residential translated positively to a classroom situation. In particular, they noted positive changes within academic areas, specifically oral and written examinations in French and English, where there was an opportunity to talk or write about their residential. These situations offered an opportunity to draw on an authentic experience and to

build upon their developed self-confidence. In other words, the pupils felt that they could speak in front of their peers and talk confidently about something which was important to them, rather than a contrived topic given to them by a teacher. For example one student reported:

My grades have improved in English and French. Just speaking tests and that, I never used to be good at them. And talking out in class. My solo talks and that, I've been getting credit grades, and that, for them. I knew when I was there, and when I came back, that I could dae (*do*) it now. I used to think that it would be too scary and that, but no any mair (*more*) as I know I can dae (*do*) it.

This is a typical comment. Boys in general, however, struggled to articulate their experience. 'It does make you more aware of yourself and self-confident', explained one boy, 'It is just hard to pick out examples'. Another was confident that:

If you were there you would notice a change, but it is hard to notice it here [in school] as you don't really do rock climbing in school. It is hard to notice. You can't exactly explain it but you know it is there. You've changed and that.

According to the quantitative approach the highest scoring components were achievement motivation and active initiative. Both the control and the experimental group scored highly in these areas and, as discussed, our interpretation suggests that this commonality may be attributable to a possible school or developmental influence. However, previous studies have indicated that it is difficult to enhance 'achievement motivation' through outdoor learning (Neill, 1999) and in this case the residential programme placed a strong emphasis on teamwork and co-operation, which might have tended to inhibit changes in areas such as 'active initiative' that emphasises individual resourcefulness. This may offer a further suggestion as to why the experimental and control groups were closely matched. The emphasis on teamwork and cooperation during the residential seems to be reflected in the comments of at least one boy:

Before I went to Outward Bound if there was a team that I was working in I would want to take over and start doing everything myself. But if there is a team that I am working in, after Outward Bound I would be prepared to take a minor roll in it. Just do my part and let other people do theirs.

This boy felt that going on the residential ‘... was one of the best experiences of my life’. But others were not so sure. While only one pupil reported that the experience had improved her time management, a minority felt that their time would have been more productively spent in academic study. One girl, for example, felt that being away from home had a detrimental effect on her 'prelim' (informal exams prior to national examinations) grades:

We went the week before the prelims. I thought I could have done better if I had studied more than going away, as we didn't really have time to when we were there. We were told to take books with us but we didn't hae (*have*) enough time tae (*to*) [study].

It seems reasonable to assume that schools may have made different levels of commitment to the ‘Aiming Higher’ programme and the broader ‘Raising Achievement’ programme; an assumption supported by anecdotal evidence gained through informal preparatory interviews held with each of the secondary school teachers appointed as programme co-ordinators within each of the 27 Secondary schools in the early stages of the research (Christie, 2004).

Influence of the school environment (macro-context). The influence of the whole school environment, including teachers and peers, emerged as a theme throughout the group interviews. Some students felt that they had been supported through the residential process more so than others. In some cases, schools spent a number of weeks working with the pupils before they went, discussing expectations and identifying areas for development and change, and similarly spent time after the residential reflecting on their experience. Other schools did not conduct preparatory or reflective work and this lack of process resulted in varying degrees of connection between the residential, home, and the school environment. Similar issues were identified at the start of the

evaluation following the informal interviews with each of the Outward Bound Co-ordinators. It is interesting to note how these early areas of interest, gleaned from the anecdotal evidence, resonate with the eventual student experience.

Hattie et al. (1997) discuss an associated phenomenon concerning the causal process that relates to these developmental domains, specifically the opportunities that arise for ‘the reassessment of the strategies used by participants to cope with and understand their world and their conceptions of self’ (p. 75). They discuss this positively, stating that it presents an ‘opportunity for many, to replace their coping strategies with newer, more functional and positive strategies’ (p. 75). However in this instance we would caution that an increased understanding of self may have an alternative, potentially detrimental effect, as evidenced by one boy who summed up his end-of-residential experience (albeit with some interesting reservations):

For once people thought I was bright ... folk kinda thought I was like brainy
... and I thought 'yeah' I am brainy for once ... and then I came back to school
with a bang ... dopey ... dunce.

This demonstrates the fragility of some students, highlighting the need for a clear and structured process that supports students both before and after a residential experience. This analysis can also be used to interpret the quantitative finding highlighted earlier concerning low ‘emotional control’ scores and high ‘achievement motivation’ scores which suggested a degree of emotional immaturity amongst the sample group. This characteristic indicates the converse of Hattie et al.’s (1997) ‘coping strategies’ phenomenon and suggests the need for the residential course to be properly integrated in the school context. We suggest that such an infrastructure should build upon the skills that the pupils have learnt, encouraging ‘connected knowing’ (Gardner, 1991) and embedding the programme within the school curriculum, ultimately influencing the longevity of the effect by encouraging students to build upon formative experiences such as these. However, realistically, this can only be achieved if the school has a system and ethos that supports this approach. Likewise, the teaching staff must receive adequate support and training, to understand the

value of such an approach and the knowledge required to practically integrate it with the aims of the curriculum.

Discussion

In this section we first consider the findings in relation to our research questions. The qualitative findings point to a positive association between the perceived effect(s) of the residential experience and the dispositions/capacities. However, the lack of statistically significant findings from the quantitative data (LEQ) being at odds with those of the qualitative study requires careful discussion. Consequently we outline the issues this raises for the present study, and subsequently consider the potential implications for residential outdoor education, and for research in the field more generally.

Our original research questions were:

- *Provision*: is the residential programme providing an opportunity for positive development?
- *Process*: does the process, pre- and post-course, support change?
- *Impact*: are there links between the overall Aiming Higher programme and the educational framework of the time?

In terms of *provision* the qualitative aspect of the study suggests that the programme can provide opportunities for positive development. Most of the participants themselves attest to this, suggesting changes in some important areas, with some students clearly articulating perceived developmental and classroom-performance benefits. These changes were also supported by anecdotal evidence from teachers and the Local Authority staff. However, there is a degree of variability in self-reported outcomes. The effect on some pupils was clearly more pronounced than for others, and for a few the experience was interpreted as negative. Nonetheless, whilst there may be opportunities and the qualitative study suggests that participants do capitalise on them, the quantitative study does not support this interpretation.

In terms of *process* the preparation and follow-up process (pre- and post-course) is clearly intended to support change and whilst this is generally perceived as positive the longevity of the

effect appears to be influenced by the level of integration and support for outdoor learning within the whole school environment. There are some aspects of this process that are a cause for concern, notably when pupils see the residential as detrimental to their preparation for examinations, or when the change experienced by the pupil is not acknowledged on their return to school, in such cases the experience can become negative. Here too the quantitative aspects of the study conflict with these qualitative findings.

With regard to *impact* there are clear links between the overall Aiming Higher programme and the curriculum. Further, the ‘curriculum mapping’ highlights the contemporary significance and continued relevance of outdoor learning more generally. In other words, at a curricular level, the findings can be related to both the educational framework at that time using the dispositions concept taken from the 5-14 Curriculum Guidelines and the current context of the ‘four capacities’ of CfE (Christie & Higgins, 2012). Consequently, it is evident that carefully constructed outdoor learning experiences can articulate with the core values of CfE and the long-standing key concepts of outdoor pedagogy; challenge, enjoyment, relevance, depth, development of the whole person and an adventurous approach to learning. However, as we have shown here and elsewhere (Christie & Higgins, 2012), ‘articulating’ does not mean that positive change will necessarily occur, and any effects are likely to be subtle, requiring careful research to understand.

Reflections On The Present Study

The differences between the qualitative and quantitative results demands specific consideration, and a number of possibilities are presented.

Is there something wrong with the quantitative study? The Life Effectiveness

Questionnaire is a well-tested and respected instrument (Neill, Marsh & Richards, 1997). It is a psychometric tool specifically designed for outdoor education, it was appropriate for the age-group of the present study, it was current and it was considerably more suitable for the evaluation than a standardised measure of self-concept such as Coopersmith Self-esteem Inventory (1959) or

Rosenberg's Self-esteem Scale (1965). Consequently, we have no reason to conclude that the LEQ results were flawed. It may be that the LEQ was not the ideal instrument for this study and that an alternative quantitative measure that was more positively associated with the characteristics of the dispositions/capacities could have produced different results. However, no such instrument was (or is currently) available. One possible explanation for the lack of difference between the 'residential' group and the control group is that the overall 'Raising Achievement' programme had a common effect on all pupils prior to the residential and afterwards, masking any differences. This is of course difficult to know without a rather different and long-term study being conducted.

Is there something wrong with the qualitative study? The most frequent concern in semi-structured interviews is the potential for respondents to tell the interviewer what they think they want to hear (the so-called Hawthorne effect (Mayo, 1993)). This is of course possible, but the consistency of the comments by pupils and adults, as well as the willingness of some respondents to make critical comments about the programme suggests this is unlikely. Consequently we must also accept these findings as authentic.

Is there something wrong with a mixed methods approach to the study? The tensions that arose from presenting and analysing the quantitative and qualitative findings have been discussed openly here, as we want to raise the issue of '*which evidence is the best evidence?*' If, for example, we had taken only one approach to this study there would either have been *no clear support* for the value of outdoor learning residential (quantitative study), or *a rich narrative on the benefits* (qualitative study). Our mixed methods approach may well be considered by some to be 'inconvenient' as it demands balance in any findings and claims. However, in another sense it might be considered obvious that trying to understand such a complex phenomenon will prove demanding for methodological approaches, and that it would be unrealistic to expect unequivocal results. Clearly, there are tensions resulting from the mixed methods design and they are not unique to this study.

Amos and Reiss (2011) conducted a substantial evaluation of a five-year field-work initiative in the UK using questionnaire, interview and observational data drawn from 2,706 participating students (aged 11-14 years), 70 teachers and 869 parents/carers from 46 schools. Aspects of this study reflect areas of our own research, for example they consider a similar Secondary school age sample, employ a mixed methods approach within an informal learning context and they have inadvertently addressed a potential limitation of our own research, regarding the suitability and transferability of standardised instruments (as noted previously), by developing a project-specific questionnaire. Their research concludes that participating ‘students did make cognitive gains and these were revealed to a greater extent by interviews than by written questionnaires’ (p. 22). Therefore despite the development of a project-specific questionnaire and a large sample group, their results were ‘not significant at the $p < 0.05$ level’ (p. 1). Furthermore individual cognitive gains ‘were revealed more convincingly during face-to-face interviews, rather than through survey items’ (p. 18).

Consequently, they suggest that mixed findings can raise “some methodological issue[s] around the use of questionnaire surveys to elicit students’ ideas in these kinds of non-formal ‘distance’ contexts because post-course student interviews uncovered more robust evidence showing a high proportion of individuals had learnt new ideas” (p. 18). This raises the question: was the scarcity of [questionnaire] evidence relating to cognitive gains in their study due to the fact that there *were* limited or no cognitive gains, or was it simply that the evidence was difficult to ascertain with the methods employed? There is no clear answer to that question and perhaps it is the wrong question to ask, both specifically in relation to Amos and Reiss’s study and more generally with reference to our own. Perhaps Feilzer’s (2010) broader line of questioning with direct reference to the issue of heterogeneous findings is more appropriate: ‘do such results undermine one or other of the methods used or do they simply represent different dimensions of the interrogated phenomenon?’ (p. 13).

In summary, we acknowledge these issues and can identify similar tensions within our own research. However, we are also aware that ‘in many cases, the goal of mixing is not to search for corroboration but rather to expand one’s understanding’ (Johnson & Onwuegbuzie, 2004: 19). Consequently, by conducting our study from a common context (the broader educational framework in Scotland - in this case) and using a clear structure to steer the data analysis, we have acknowledged these issues as an opportunity to explore related aspects of the same experience. Therefore, this process does not lead us to question the validity of our approach, moreover, it simply reinforced the purpose of mixed-methods design; which, in this case, seeks to consider phenomena from various perspectives in order to broaden and deepen one's understanding.

Implications For The Field

The present study was conducted on a scale and duration with a diversity of research approaches that is, to our knowledge, unique in the field. Consequently, if the results presented earlier are robust, there are important considerations for policy, practice and future research.

Does the present study suggest that residential outdoor education is ineffective? Whilst the results of our studies are equivocal (quantitative study) or positive (qualitative study), at no stage did respondents suggest that the programme was negative. Consequently whilst we suggest that this programme is not ineffective, that the outcomes seem subtle and not unequivocally positive should give pause for thought. In common with Nicol (2001) we strongly suggest that programmes should be designed carefully to address intended learning outcomes and that process and evaluation is necessary before a stated *aim* of a programme can be elevated to a *claim* of success. Whilst our analysis may seem to lack support for residential outdoor learning, it is worth reflecting on the corollary - the fact that a course of such short duration might have *any* self-attested effect is perhaps surprising and certainly worthy of note.

Does the present study suggest that using qualitative or quantitative approaches in isolation is invalid? There may well be contexts where one approach or the other would prove sufficient to properly research a residential or other outdoor programme. However, based on our

experience with the present study a rationale for doing so should first address the issue of why a mixed methods research design was *not* employed. Our findings also indicate that future research should set out to test the appropriateness of mixed methods approaches, and also to examine the robustness of the LEQ instrument and of qualitative methods such as the ones we employed. Ideally this should be through similar designs (for example, Amos and Reiss, 2011) and in different educational contexts as the widespread use of mixed methods offers the best chance of improving the quality of the evidence base. This message builds on needs identified by others such as Johnson and Onwuegbuzie (2004) who believe that ‘mixed methods research will be successful as more investigators study and help advance its concepts as they regularly practice it’ (p.14). Yet, we must also acknowledge Fielding’s (2010) cautionary note that as the research landscape features a ‘fuller range of methods’ it also obliges researchers to ‘negotiate a complex research environment’ as ‘the choice of method is only one element in delivering effective research’ (p. 129).

Is the policy context of such studies significant? Our context-based design resonates with that of Mannion et al. (2007) who reported that young people valued outdoor experiences ‘because of the ways in which three dimensions inter-related: the inter-personal dimension, the activity dimension and the spatial dimension (or outdoor location)’ (p .3). More recently Waite (2010) has discussed similar issues concerning the micro- and macro-contextualisation of schooling and the reconstruction of relationships between individuals, community and place. Both studies emphasise the significance and complexities of these relationships, and their influence. As stated at the outset, our fieldwork was completed prior to these publications, yet our research design was informed by a similar theoretical analysis of the field - the widely used ‘three-circles model’ (Higgins, 1995) of outdoor education (outdoor activities, environmental education, and personal and social education). As such our study, whilst grounded in a mainstream educational context, produced research that can be understood at both the macro-level (educational framework in Scotland) and micro-level (pupils’ self-perception). Additionally, it responds to Hattie et al.’s (1997: 77) concern regarding research ‘conducted in isolation from the educational world’ and Nicol’s (2004) point concerning

conflation between the stated *aims* of an outdoor programme and the *claims* that could be made about its outcomes.

The potential efficacy of residential experiences is just one consideration in the decision to commit to such programmes. Despite the lack of clear evidence it is important to note that the aim of fostering positive ‘dispositions, or ‘capacities’ is now prevalent in the curricula of many countries, and so consideration of any direct educational benefits of residential outdoor learning within the past and current curricular frameworks in Scotland may have both local and international significance. With reference to the dispositions/capacities the present study suggests that in terms of the educational policy framework, residential outdoor learning experiences facilitate clear links with the curricula, and that at least in terms of self-report the majority of pupils attending residential found the experience developmental. As we have illustrated there are many ways in which a school might seek to provide learning experiences that develop dispositions/capacities, and outdoor and residential experiences clearly have the potential to do so due to their philosophical alignment with such aims. If anything, the curricular justification for such programmes is stronger now than when the original research study was completed. The corollary is that any research into such programmes will be missing the central rationale for such provision if it does not consider the local contemporary educational (or other) policy context.

Acknowledgments

We acknowledge the support of Tony Shepherd and the staff at Loch Eil Outward Bound Centre, Alison Cameron and Michael O’Neill from North Lanarkshire Council, and all the Secondary School staff and pupils that supported this study and gave generously of their time. Our thanks also go to Roger Scrutton for his comments on earlier drafts of this article.

Notes

¹ For clarification, the term ‘residential’ is used throughout this paper to refer to educational visits such as ‘outdoor learning trips to residential outdoor centres and/or expeditions that involve being away from home overnight’ (Learning and Teaching Scotland [LTS] 2010a, p. 18

² Learning and Teaching Scotland is the Scottish Government’s education support agency. In 2010 structural changes were made and its name changed to ‘Education Scotland’. All references to the documents published etc. are attributed to the name appropriate to the time.

References

- Amos, R., & Reiss, M. (2011). The benefits of residential fieldwork for school science: Insights from a five -year initiative for inner-city students in the UK. *International Journal of Science Education*, 11, 1-27. doi: 10.1080/09500693.2011.585476
- Bakeman, R. (1992). *Understanding social science statistics: A spreadsheet approach*. UK: Lawrence Erlbaum Associates Inc.
- Barret, J., & Greenaway, R. (1995). *Why adventure?* Coventry: Foundation for Outdoor Learning.
- Beames, S., Atencio, M., & Ross.H. (2009). Taking excellence outdoors. *Scottish educational Review*, 41 (2).
- Belenky, M., Clinchy, B., Goldberger, N., & Tarule, J. (1986). *Women’s ways of knowing: The development of self, voice and mind*. New York: Basic Books.
- Cason, D., & Gillis, H. (1994). A meta-analysis of outdoor adventure programming with adolescents. *Journal of Experiential Education*, 17(1), 40-47.
- Christie, E. (2004). *Raising achievement in Scottish secondary schools? A study of outdoor experiential learning*. Unpublished doctoral thesis, University of Edinburgh.
- Christie, B., & Higgins, P. (2012). Residential outdoor learning experiences and Scotland’s school curriculum: an empirical and philosophical consideration of progress, connection and relevance. *Scottish Educational Review*, 44(2), 45-59.

- Cooper, G. (2004). *Changing roles for outdoor education centres*. West Midlands: National Association for Environmental Education.
- Coopersmith, S. (1959). A method for determining types of self-esteem. *Journal of Abnormal and Social Psychology*, *59*(1), 87-94.
- Coopersmith, S. (1976). *The antecedents of self-esteem*. London: WH Freeman and Company.
- Creswell, J., & Garrett, A. (2008). The "movement" of mixed methods research and the role of educators. *South African Journal of Education*, *28*(3), 321–333.
- DeLisle, J. (2011). The benefits and challenges of mixing methods and methodologies. *Caribbean Curriculum*, *18*, 87-120.
- Feilzer, M. (2010). Doing mixed methods research pragmatically: implications for the rediscovery of pragmatism as a research paradigm. *Journal of Mixed Methods Research*, *4*(1), 6-16. doi: 10.1177/1558689809349691
- Fielding, N. (2010). Mixed methods research in the real world. *International Journal of Social Research Methodology*, *13*(2), 127-138.
- Flyvbjerg, B. (2001). *Making social science matter: Why social inquiry fails and how it can succeed*. Cambridge: Cambridge University Press.
- Gardner, H. (1991). The tensions between education and development. *Journal of Moral Education*, *20*(2), 113-125.
- Gardner, H. (1999). Are there additional intelligences? The case for naturalist, spiritual, and existential intelligences. In J. Cain (Ed.), *Education: Information and transformation* (pp.111-132). Englewood Cliffs, NJ: Prentice-Hall.
- Greene, J. (2007). *Mixed methods in social inquiry*. San Francisco, CA: Jossey-Bass.
- Greene, J. (2008). Is mixed methods social inquiry a distinctive methodology? *Journal of Mixed Methods Research*, *2*(1), 7–22. doi: 10.1177/1558689807309969

- Hattie, J., Marsh, H., Neill, J., & Richards, G. (1997). Adventure education and Outward Bound: Out-of-class experiences that make a lasting difference. *Review of Educational Research*, 67(1), 43-87. doi: 10.3102/00346543067001043
- Higgins, P. (1995). Outdoor education provision at Moray House Institute of Education. *Scottish Journal of Physical Education*, 23(3), 4-11.
- Hopkins, D., & Putnam, R. (1993). *Personal growth through adventure?* UK: David Fulton Publishers.
- Johnson, R., & Onwuegbuzie, A. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14-26. doi: 10.3102/0013189X033007014
- Learning and Teaching Scotland (2000). *The structure and balance of the curriculum*. Glasgow: Learning and Teaching Scotland.
- Learning and Teaching Scotland (2010a). *Curriculum for excellence through outdoor learning*. Glasgow: Learning and Teaching Scotland.
- Learning and Teaching Scotland (2010b). *Curriculum for excellence*. Glasgow: Learning and Teaching Scotland.
- Mannion, G., Doyle, L., Sankey, K., Mattu, L., & Wilson, M. (2007). *Young people's interaction with natural heritage through outdoor learning*. Retrieved May 1, 2011, from http://www.snh.org.uk/pdfs/publications/commissioned_reports/ReportNo225.pdf
- Mayo, E. (1933). *The human problems of an industrial civilization*. New York: MacMillan.
- Mortlock, C. (1984). *The adventure alternative*. Cumbria: Cicerone Press.
- Neill, J. (1999). The melting pot of outdoor education effects: Testing the flavours of the programme type, distribution and participant age. *Proceedings of the 11th National Conference of the Camping and Outdoor Education Association of Western Australia*, 1991, 112-118.

- Neill, J., & Flory, M. (1999). *"Girlz in the wood": a pilot study of the effects of courses on adolescents' personal effectiveness and self-esteem*. Boulder, CO: The Women's Wilderness Institute.
- Neill, J., Marsh, H., & Richards, G. (1997). *The Life Effectiveness Questionnaire: Development and psychometrics*. Sydney, Australia: University of Western Sydney. Unpublished Document.
- Neill, J., & Richards, G. (1998). Does outdoor education really work? A summary of recent meta-analyses. *Australian Journal of Outdoor Education*, 3(1), 2-9.
- Nicol, R. (2001). *Outdoor education for sustainable living?: An investigation into the potential of Scottish local authority residential outdoor centres to deliver programmes relating to sustainable living*. Unpublished doctoral thesis, University of Edinburgh.
- Nicol, R., Higgins, P., Ross, H., & Mannion, G. (2007). *Outdoor education in Scotland: A summary of recent research*. Perth: Scottish Natural Heritage.
- North Lanarkshire Council (1998). *Raising achievement for all: A draft policy framework (amended version following consultation)*. Unpublished document.
- Rickinson, M., Dillon, J., Teamey, K., Morris, M., Choi M. Y., Sanders, D., & Benefield, P. (2004). *A review of research on outdoor learning*. Shrewsbury, UK: National Foundation for Educational Research and King's College London.
- Robson, C. (2004). *Real world research*. Blackwell Publishers: Oxford.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Salkind, N. (2000). *Statistics for people who think they hate statistics*. London: SAGE publications.
- Scottish Office Education Department (1991) *Personal and social development 5–14 curriculum and assessment in Scotland national guidelines*. Learning and Teaching Scotland: Glasgow.

Simpson, P. (2007). *Residential outdoor education in Scotland*. Unpublished doctoral thesis, University of Stirling.

Telford, J. (2010). *Meanings, values, and life course: a study of participants' experiences at a Scottish outdoor education centre*. Unpublished doctoral thesis, University of Edinburgh.

Waite, S. (2010). Pedagogies in the outdoors: A tale of two (?) places. Paper presented at *Encountering, Experiencing and Exploring nature in Education, 10th Annual European Institute for Outdoor Adventure Education And Experiential Learning*, Slovenia, September 22nd-25th 2010.