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“If only”: Outdoor and Adventurous Activities and Generalised Academic Development

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Abstract

This paper reports on research conducted as part of a project, the aim of which was to utilise outdoor and adventurous experiences to help schools address their ‘if only’ factor — that aspect of learning perceived to be key to raising standards, whether it be the acquisition of knowledge, skills or a change in attitudes to learning. The project involved nine schools and 671 children, all engaged in the “I Can!” project and the follow-up activities that took place at schools. The research was carried out with children, teachers and parents and consisted of a series of focus groups and analysis of children’s work. Limitations inherent within the research opportunity prevent the confident attribution of causation. However, the study’s findings do offer insight into an under-researched, yet potentially valuable educational experience. The findings suggest that outdoor and adventurous activities can impact upon children’s learning in school by addressing their intellectual, affective and social development.

Introduction

There have been a number of definitions of Outdoor and Adventurous Activities (OAA), although the National Association for Outdoor Education (cited in Balazik, 1995, p. 4) defined it clearly as ‘a means of approaching objectives through guided, direct experience in the environment, using its resources as learning materials’. The absence of an adventurous element in this definition might be explained by the fact that the OAA programme was a compromise between the proponents of outdoor education and the National Curriculum for physical education and as such, was a balance between developing specific skills and the personal development in children (Chappell & Wiggins, 1997).

Like other Physical Education (PE) activity areas, advocates for OAA have offered numerous justifications for its place in the school timetable beyond the physical and psychomotor (Bailey, 2002). For example, the early National Curriculum Council’s *The Whole Curriculum*, referred to OAA as making a valuable contribution to other areas of the curriculum such as geography, biology and citizenship (National Curriculum Council, 1990), whilst school Inspection reports suggest that it is a valuable medium for personal, social and physical education (Her Majesty’s Inspectorate, 1983; 1989). In addition, it is also claimed that OAA stimulates the development of awareness, understanding, self-reliance, self-discipline, judgment, responsibility, relationships and the capacity for sustained practical endeavour (Keighley, 1998).

Many reports have hypothesised positive outcomes of OAA for children and young people. For example, Hopkins and Putnam have suggested examples of the links between outdoor activities and personal and social development (Hopkins & Putman, 1993), whilst Barrett and Greenaway (1995) draw on a range of evidence to posit a relationship between outdoor learning experiences

and positive personal outcomes. For instance, they argued that challenges in a wilderness setting can facilitate group bonding and co-operation and that contact with the natural environment has important health-giving effects, and is a great source of sensory pleasure (Barrett & Greenaway, 1995). Cooper (1998) referred to two surveys that cited the benefits that OAA had upon personal and social development, environmental awareness and understanding, and the opportunities OAA presented to extend class work in a range of subjects in the National Curriculum. Humberstone (1992; 1993) highlighted issues around equal opportunities and outdoor education in the school curriculum.

There is also a growing body of literature on possible benefits of engagement in different physical activities in terms of cognitive and academic development (Bailey, 2003). Although the precise relationship between activity and intellectual outcomes is inconclusive, a number of studies have suggested some causative effect. For example, one theory is that physical activity enhances the flow of blood to the brain, increases arousal levels, changes hormonal secretion, increases mental alertness, and improves self-esteem (Hills, 1998). Another explanation for these changes is simply that such activities are capable of generating empowering situations, in which children relax and enjoy learning (Daley, 1988). By presenting situations as games and play, outdoor experiences can encourage children who have built up defences to lower their 'affective filters' (Gildenhuis & Orsmond, 1996). Empirical studies have shown some improvement in academic performance resulting from increased levels of physical activity, and one report of three longitudinal studies emphasises that 'academic performance is maintained or even enhanced by an increase in a student's level of habitual physical activity, despite a reduction in curriculum or free time for the study of academic material' (Shephard, 1997, p. 119).

In addition, there is mounting evidence that physical activity can have a positive effect upon the psychological well-being or affective development of children and young people. Reviewing the literature in this area, Mutrie and Parfitt (1998) concluded that physical activity is positively associated with good mental health. The case is particularly strong with regards to children's self-esteem, especially in disadvantaged groups, such as those with learning difficulties and initially low self-esteem. Other associations with regular physical activity that have been reported include reduced stress, anxiety and depression; all of which supports the claim that 'physical activity improves psychological health in young people' (Sallis & Owen, 1999, p. 51).

OAA tend to implement cooperative learning approaches and thus aim to impact positively upon children's social development (Barrett & Greenaway, 1995). Cooperative learning is, 'an instructional format in which students work together in structured, small, heterogeneous groups to master the content' (Dyson, 2001), and has been found to be associated with positive outcomes in terms of academic achievement (Kagan, 1992; Slavin, 1996). In physical education, cooperative learning has been found to help to improve behaviour (Polvi and Telama, 2000), improve psychomotor skills (Johnson & Ward, 2001; Ward & Ward, 1996), develop social skills and teamwork (Johnson & Ward, 2001), and support students to take responsibility for their own learning (Dyson, 2001).

These studies offer support for the potential benefits of children's participation in OAA. However, few of these reports provide, or claim to provide, systematic analysis of the processes and outcomes of OAA. Indeed, a 1999 Government survey specifically noted that 'there was very little evidence of any formalised or structured assessment and recording of outdoor and adventurous activity work and its impact on the pupils' learning and attainment' (Clay, 1999, p. 89).

The Project

This paper reports on the research conducted following the “I Can!” project, which consisted of outdoor-based activity days and follow up classroom work completed in schools. The project’s aim was to utilise outdoor and adventurous experiences to help schools address their ‘if only’ factor — that aspect of learning perceived to be key to raising standards, whether it be the acquisition of knowledge, skills or a change in attitudes to learning. As such, the project sought to build upon the often-implicit view that practical, hands-on activities can positively contribute to theoretical or academic learning, if appropriately presented (Brown, Cocking & Bransford, 2000). The project was based at the Arethusa Centre, a specialist centre on the River Medway, in the South-East of England. It involved nine schools and 671 children. The key element of the approach was to target a relatively small group of children from Year 5 (aged between 9–10 years old) that for a variety of reasons, such as personal circumstances at home or their history of schooling, were judged by their teachers to be underachieving in either numeracy or literacy. Specifically, pupils targeted for this project were predicted to not reach a level 4 in the English National Curriculum Attainment Targets.

Achieving a ‘Level 4’ assessment at the end of primary school, according to the Government’s new Primary Strategy (Department for Education and Skills, 2003) improves a child’s prospects at secondary school and their future life chances. Indeed, 70% of pupils who achieve a level 4 at Key Stage 2 go on to get five or more GCSE’s at grades A*– C (Department for Education and Skills, 2003). By concentrating on Year 5 pupils, the “I Can!” project was designed to address the very challenging Key Stage 2 targets at an early stage in the development of these pupils and thus improve their learning in school.

Each of the nine participating schools was matched to one of the four activities offered as part of the “I Can!” Project. These activities focused on four different aspects of children’s learning, namely mathematics (“Make It Count!”), reading comprehension (“Read All About It!”), writing (“Write On!”) and affective characteristics such as self-esteem and self-confidence (“The Yes Feeling!”). The “I Can!” activity days were held for separate classes on separate days over the course of the year and delivered by specialist staff, supported by class teachers. The details of the project were provided by the “I Can!” Project literature for teachers and are presented in the figure below.

Figure I: “I Can!” Activities

ACTIVITIES	ASPECT OF LEARNING	MAIN FEATURES
“Make It Count!”	Mathematics	Raft building and testing, and maths-based initiative games.
“Read All About It!”	Reading comprehension	Detective game and team building games.
“Write On!”	Writing	Wall climbing, archery and initiative games.
“The Yes Feeling!”	Self-esteem and self-confidence	Wall climbing, archery and initiative games.

Even though the activities were designed around the learning needs of the target group, the whole population (every child in year five within each school) was invited to participate in the project. Therefore, the size of cohort varied according to the size of the school. The numbers of target children made up approximately one third of each cohort. Overall, 51% of the sample was boys and 49% were girls.

After the "I Can!" activity day, the classes pursued structured follow-up activities in school, which matched the type of activity in which they had taken part. For instance, the classes that participated in the "Read All About It!" project were then able to go back to their schools to analyse texts, write and then perform a play they had devised on a similar theme. Likewise, the pupils who took part in the "Make It Count!" activity returned to school and were asked to develop their ability to work independently using the raft building techniques they had learnt previously.

Methods and Procedures

The aim of this paper is to report upon the research conducted after the project had been completed. The research team was not present at the activity days and was not involved until the research phase began.

The methodological approach adopted here has been informed by current debates regarding the status of children in contemporary social science research. For instance, the authors take as their starting point the importance and necessity in ethical terms of listening to children: 'For educational researchers and policy makers, justifications for giving a voice to children can be made on practical as well as ethical grounds' (Lloyd-Smith & Tarr, 2000, p. 60). Linked to this is an increasing recognition that children and young people are 'creators' and social actors who are active in creating themselves in different social contexts' (France, Bendelow & Williams, 2000, p. 151). This approach necessitates a methodology that puts the child or young person at the centre of focus. Mayall, for example, argues that this approach needs to have three central components:

First, it has to conceptualise and accept children as competent reporters of their own experiences, recognising that they are capable of reflexivity. Second, giving children a voice means taking them seriously and putting their views at the centre of analysis. Third, the aim of research should be to work for children rather than on them and to describe their social worlds with a view of influencing social change (Mayall, 1996, p. 12).

The conviction of the value of such an approach stems from a belief that in order to elicit authentic views from the children, it is necessary to make the research process relevant to them. However, with that in mind, we would emphasise that working with children is a vital prerequisite to working for children.

Primary data-gathering took place over two separate days with Headteachers, teachers, children and parents. Focus groups were chosen primarily because they can encourage contributions from people who are reluctant to be interviewed on their own or feel that they have nothing to say (Robson, 1993), but also because the aim was to gain an insight into participants' feelings and thoughts as they discussed the issues. Teachers and Headteachers who had taken part in the activity day attended the first of these two subsequent research days whilst the target children and their parents were invited to participate on the second day. In all sessions, notes were taken during the research and audiotapes were used when consent was provided. The children's thoughts and feelings about the

“I Can!” project were also explored in the session through a range of writing and drawing exercises. In addition to the data collected, teachers were asked to provide individual written descriptions about their views of the “I Can!” project. One limitation of this procedure was that despite the fact that the project included whole classes of pupils, only those defined as the ‘target’ group by schools were included in the focus group sessions and therefore the more able pupils were omitted from the research. However, as part of the research, information was also obtained from the rest of the children, as detailed below.

Each of the nine schools sent examples of the children’s work to be used in the research. In some cases this included written work, drawings and also photographs from the activity day itself completed by whole classes. In other cases, schools submitted whole folders of work completed as part of the follow-up work in the weeks afterwards. Where relevant, examples of this work have been used to illustrate points made in the report.

Access and Consent

Given the central concern of the research team with research ethics, particular emphasis has been placed on the notions of informed consent and assent and this is reflected in the processes by which consent and assent were sought (Jago & Bailey, 2001, p. 529). Access to the sample was negotiated through the schools and the nature of the project was explained to the children by their teachers. Most importantly, the children were given the opportunity to give their assent to participate in the research by members of the research team, who had all applied successfully for Enhanced Disclosure from the Criminal Record Bureau.

Results

For the purpose of this research a wide variety of data were collected from a range of perspectives from a variety of sources, including children’s work from the follow-up activities, teachers’ views of the project and data collected during two research days at the Arethusa Centre with Headteachers, teachers, children and parents. Using a qualitative analysis software package (NVivo 1.0 for Windows), first level coding was carried out by splitting the data into discrete parts and attaching labels to groups of words. Second level coding grouped the initial codes into a smaller number of themes or patterns. From the qualitative material analysed, three main themes were identified, namely intellectual, affective and social development. Participants were also offered the opportunity to state any improvements that could be made to the project and these are included in the results. The quotes presented below remain uncorrected and were selected to best represent the collated data. The data are displayed together with the codes assigned as part of the analysis procedure, where ‘C’ indicates a child’s voice, ‘T’ a teacher’s voice and ‘P’ a parent’s voice.

Intellectual Development

The “I Can!” project and subsequent follow-up activities were designed to enhance directly the pupils’ learning in school. The data collected during the research process suggest that the “I Can!” project did impact upon pupils’ academic development by ensuring a link between the experience and school-based learning.

The practical activities enabled the pupils to realise the practical benefits of learning school subjects such as mathematics. For instance, as one child who participated in the “Make it Count!”

activity explained, 'I lurned my fractions because I had to cut bits of meterele and bits of bord' (C1). Similarly, another child wrote that, 'I learnt more about perimetre and area. If my teacher says we're doing it, then it would be easy because I know what it means. We learnt about it when we built our rafts' (C2).

Pupils, teachers and parents all noted that the pupils' vocabulary had broadened as a result of the "I Can!" experience. In one child's follow up work, two new words were noted; 'alibi' and 'motive' (C8). According to a teacher involved in the "Read All About It!" activity, the use of language and vocabulary in relation to murder mystery stories and in searching for clues 'really tripped off their tongues' (T9). Another teacher added that the pupils had been able to regularly use the new technical words they had learnt in their schoolwork (T12).

Interestingly, the teachers also stated that they had benefited from the experience, themselves. For instance, one teacher claimed that spending one day at the Arethusa Centre had enabled him/her to see their class in a different light and had enjoyed sharing the successes of the pupils with them (T5). Another teacher stated that they had taken to using drama and role-play in lessons at school after learning at the "I Can!" day that these could incorporate all learning styles.

Affective Development

At the research day, one child wrote that, 'when I came here they said to me to always be confedant so when I am doing work at school I think back to what Robert (pseudonym) told me and there is no word as cant so I just do it and try my very hardest...' (C4). Indeed, the majority of teachers supported this point by agreeing that the pupils had developed a positive attitude to learning since the "I Can!" project. Many comments were made by pupils with regards to their sense of achievement, both in writing and during conversation. One pupil summarised her view like this: 'I didn't think I'd be able to do the climbing. When I managed it, I thought, "You've just got to believe you can do something"' (C6). In addition, pupils believed that by achieving something once this had a positive impact upon their confidence. For example, a participant in a discussion claimed that, 'at first I didn't feel confident but the second time I felt really confident'. A sense of accomplishment was clearly felt by another pupil who stated, 'you enjoy making things that work'.

Teachers also expressed surprise at some of the achievements made by the pupils. Teachers reporting on the "Make it Count!" activity remarked on how all pupils were able to participate fully, irrespective of their ability to record information or use paper and pencil methods of calculating (T1). Specifically, pupils were motivated by the notion that they could use their mathematical skills in a 'real' situation to buy materials, design and build a raft, and evaluate their work after the race. One Headteacher commented that, 'some children surprised me completely with their clear ability to trade and negotiate so successfully' (T3). Two teachers in the questionnaire added that the pupils' achievements would not be apparent until later on in life and three highlighted the fact that the pupils' achievements differed from child to child and from group to group.

Positive feedback also came from parents. For example, one teacher recounted very favourable comments from a parents' evening, where parents 'were amazed at their pupils' achievements' (T4). Indeed, a group of parents at the research day claimed to have noticed a change in their pupils, especially in terms of confidence and having achieved things that they had not expected to. One group pointed out that the 'feel good factor' that pupils had developed as a result of the teambuilding activities had encouraged them to achieve a great deal more than they would have done previously.

Social Development

All of the “I Can!” activities involved teamwork to some degree and so it is not surprising that this was a main theme identified in the research. There is evidence to suggest that different pupils were given the opportunity to ‘shine’ through working in teams in this new environment. For instance, one child explained, ‘Lucy always seems good at everything in school — but at the Centre, I was surprised that Sarah was best’ (C12). The pupils themselves learnt more about each other on the activity day as can be demonstrated by another child’s comment, that, ‘I’ve learnt to get to know people before I judge people, because I was in a team with a person I wasn’t fond of and I learnt they weren’t so bad’ (C3).

Class books were kept by pupils who participated in the “Write On!” activity. Notably, the books revealed a sense of pride that pupils had in their partners’ achievements. One entry stated, ‘I think on rock climbing Zoe tried her hardest and she should be proud of herself’ (C14). Another child noted that, ‘people cheering made me feel like I wanted to go higher’, highlighting the benefits of encouragement among the children. Overall, the records kept by pupils on their partners indicated their partner’s enjoyment. One child summed up his partner’s experience by concluding that ‘he felt so happy. He thought it was a bit hard. Mark would love to go again because he liked the whole day out’ (C15).

At the research day, a number of teachers reasoned that smaller groups worked best as these provided the pupils with more one-to-one contact with the instructors, thereby encouraging them to feel more involved. A small number of staff in the questionnaire was of the opinion that the pupils had become better able to work in teams. For instance, some pupils were more willing to participate in group activities and listen to team-mates’ opinions after attending the “I Can!” activity.

Improving Provision

All participants in the research were asked to comment upon any improvements or changes that could be made to the project. Positive suggestions made by the pupils included that more activities could be offered, that they could make individual choices of the activities on offer and that all schools could try all the activities. One group of pupils indicated that as part of the project more competitions could be organised, ‘so you could get better at PE and that’ (C21). A number of pupils agreed that the activity day had helped them to think more in school, that it had set them new challenges, that it was fun and that they wanted to do it again. However, some pupils also revealed that they would have liked the research days to have taken place earlier so that they could remember the specific activities in more detail. The activity days were spread out over the year and the research days were held at the end of the year to involve as many of the children from all schools as possible. For this reason, the research days were held at the end of the year and for some, a few months after the activities had taken place.

With increased time for preparation, the teachers felt that they could better plan for the activity day, both in order to complete any paperwork that was necessary and also to enable sufficient liaison with the parents and staff at the Activity Centre. One teacher commented that if the visits were more frequent, the children would have more enthusiasm for learning through the experience (T14). This last point merits some comment in that it suggests that teachers were able to see the potential of the project and foresee the full range of benefits that frequent participation in OAA might incur.

Parents generally felt enthusiastic about the project and its aims, although there were suggested improvements. For instance, some felt that they had been poorly informed about the project, which meant that they could not support it in the way they felt able to. Apart from a brief letter asking for consent, some parents had had no idea about the project's aims, whilst other parents had attended a play and/or an assembly after the trip. Better communication between the parents and the school might have enabled the parents to follow learning outcomes at school and perhaps even help to address issues of self-esteem. Another parent asked whether the teacher training days might be a useful time for children to participate in an activity day rather than staying at home (P5). Theoretically, this suggestion might prove an excellent use of resources even though in practice the teachers would not actually be present to witness any development in the children.

Limitations of the Study

We acknowledge inherent weaknesses within this study, although many of these were beyond the control of the research team, as the difficulties resulted from the lack of opportunity to carry out base-line or pre-test measures. Others seem to be associated with the particular contexts in which the research took place. For example, the answers provided by the pupils may have been influenced by previous discussions with teachers and other adults engaged in the project. Thus the apparent homogeneity of responses to certain questions about their learning experience must be considered in the light of this. Also, it is important to note that only the target pupils were invited to the research days; not all of the pupils were present and this larger group may have offered more negative views. Moreover, some of the pupils were asked to comment on an activity day that they had attended some six months earlier. That said, we consider that these factors do not detract from the wealth of both authentic and valuable feedback that the pupils have provided.

Limitations inherent within the research opportunity prevent the confident attribution of causation. However, the study's qualitative findings do offer insight into an under-researched, yet potentially valuable educational experience. Future research should seek to obtain longitudinal qualitative and quantitative data on pupils' experiences as they engage in outdoor adventurous activities.

Conclusion

The "I Can!" project aimed to raise standards among a group of primary-aged pupils, through the structured use of outdoor and adventurous activities. By utilising practical, hands-on activities in outdoor settings, it sought to develop children's knowledge and skills in certain academic areas, and facilitate a positive change in attitudes towards learning. As such, the aims of the study reflect a long-standing, but under-researched hypothesis regarding the symbiotic nature of the relationship between practical and theoretical knowledge (Piaget, 1956; Wolfe, Cummins & Myers, 1998). The results of this research also highlight the valuable educational service that outdoor centres can provide to schools, whether or not the OAA aspect is central. In this way, it supports other claims that an unfamiliar environment can provide participants with a range of positive benefits, such as enhanced self-concept (Nadler, 1993), to encourage self-awareness and self-responsibility (Kimball & Bacon, 1993) and an effective approach to learning (Keighley, 1998).

This research has sought to examine the extent to which these aims have been realised. Time and other external constraints necessarily limited the scope and design of this research. Nevertheless, emergent findings are apparent and they suggest promising lines of further enquiry.

A range of qualitative evidence, drawn from teachers and the views and work of the pupils themselves, leads to the conclusion that the “I Can!” project has broadly realised its initial aims. Indeed, there are clues that the positive outcomes associated with this scheme actually exceed the expected benefits. Summary findings include the following:

- Structured reflection on experiences encouraged pupils to build up links between their outdoor activities and classroom-based learning; this expressed itself in greater understanding of concepts and improved application in ‘real life’ settings;
- The activities were perceived by both pupils and teachers as ‘inclusive’, in the sense that they offered all pupils the chance to take part, irrespective of their ability and confidence in other contexts; in fact, some previously underachieving pupils did achieve a great deal and even excelled in these contexts;
- Participation in the planned activities were reported by teachers to increase motivation and engagement in learning;
- Suggestions for future projects focused upon the range and choice of activities offered to children, the time available for schools to plan and liaise and the extent to which the actions are communicated and fed back to parents.

Overall, this evidence does lead us to speculate the extent to which pupils could benefit from access to OAA experiences. Or, perhaps, we might more valuably enquire into the relevance of learning away from the classroom, and of ensuring that all children experience some sort of properly supervised adventurous activity, not because these activities might contribute in some way to their mathematical understanding or literacy, but because they are intrinsically worthwhile things to do. These seem areas rich in possibilities for future enquiry.

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