The value of participating in British exploring society expeditions: a three year multi-cohort study

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ABSTRACT

A primary aim of many expeditions is to facilitate personal development of young people and while there is much anecdotal evidence to support this aim, there is limited empirical work of varied quality that explores the specific nature of such benefits. This research examined nine summer BES expeditions (Norway, Namibia, & Amazon in 2012; Finnmark, Ladakh, & Namibia in 2013 and 2014) involving 58 young people (aged between 15 and 22) who completed three on-line questionnaires to collect qualitative (open ended questions) and quantitative (Likert scale) data. Measurement of four psychological attributes associated with effective character development were used: mental toughness, coping skills, GRIT and leadership skills. Surveys were completed at three stages; 1) pre-expedition, 2) immediately post expedition and 3) three months post expedition. Results indicated that the expeditions impacted positively on the psychological attributes of young people, with lasting short terms effects (three months after expedition). For the 58 participants, there were statistically significant improvements and small positive effect sizes in mental toughness ($P = 0.006$; $\eta p^2 = 0.167$), leadership skills ($P = 0.004$; $\eta p^2 = 0.18$), and GRIT ($P = 0.001$; $\eta p^2 = 0.218$). There was no significant difference ($P > 0.05$) or effect size for the application of coping strategies. Qualitative data provided insights into how the learning took place and individual perspectives on the overall value of the expedition in relation to narrative understanding.

KEYWORDS

expeditions; personal and social development; wilderness; youth development; adventure; experiential learning; values education; British Exploring Society

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INTRODUCTION

A primary aim of many expeditions is to facilitate the personal development of young people, and while there is much anecdotal evidence to support this aim, there is limited empirical work of varied quality that explores the specific nature of such benefits. The purpose of this research was to measure constructs associated with personal and social development on expeditions. This may be related to the challenge of measuring changes that are developmental in short time periods. This complexity plagues literature in outdoor experiential education, nonetheless, it is worth briefly reviewing the historical context and summarising pertinent literature in this area.

History of expeditions

Expeditions have been increasingly used as an educational tool in the UK which aim, to varying degrees, to provide positive experience, promote young people's personal and social development (PSD), or conduct research into the places that are being visited (Allison, Stott, Felter, & Beames, 2011). Even though expeditions have a long tradition in the UK (the first youth expedition took place in 1932 to Finland when the Public Schools Exploring Society was established; Allison & Higgins, 2002), it was not until recently, when the field became regulated to enhance safety and minimise significant danger to young people (British Standard 8848 first drafted in 2007; Royal Geographical Society, 2017), that numbers participating really began to grow (Jones, 2004). However, there is no commonly agreed definition of *expedition* among practitioners and researchers; this study adopted Allison, Davis-Berman and Berman's (2011) definition of expeditions which "involve physical journeys (e.g. walking, sailing), have some degree of uncertainty involved (e.g. of destination) and some self-sufficiency (e.g. carrying personal equipment and food supplies)" (p. 2). Note that these expeditions are of a different culture to Outward Bound™ courses which have a specific Hahnian philosophy. The youth expeditions researched here come from a geographical heritage concerned with science and adventure for the purposes of youth development, and embody a complexity of British cultural heritage.

Expeditions have become recognised by many as valuable educational experiences for young people (16–25) as they promote overall development and employability and are commonly supported by parents, teachers, potential university admissions and even employers (Allison et al., 2011). Such growth in potential educational value has caused stakeholders and programme organisers to demand empirical evidence to justify the cost and effectiveness of such expeditions (Scrutton & Beames, 2015) as more funds and bursaries have been established to make expeditions more accessible to a wider range of young people across the UK (Allison & Beames, 2010). This study addresses the demands for more robust evidence on the value of youth expeditions and presents findings from the largest study on youth development expeditions to date. Nevertheless, Allison and Von Wald (2010) noted that expeditions have received limited attention within educational research in trying to understand the underpinning concepts of character development and long-term benefits for young people after return from expeditions, especially through self-reflection, understanding of self, and recognition of values.

Emerging gaps in existing knowledge

Expeditions are thought to enhance young people's PSD such as resilience (e.g., Ewert & Yoshino, 2011), leadership skills (e.g., Stott & Hall, 2003), teamwork (e.g., Beames, 2005), coping skills (e.g., Sheldon, 2009), or self-confidence (e.g., Beames & Stott, 2008). These skills and attributes are understood to be developed through an increased ability to effectively manage our emotions, thoughts and behaviours – particularly through challenging circumstances (Allison & Von Wald, 2012; Department for Education, 2015; Public Health England, 2015; Stott, Allison, Von Wald, & Fakunle, 2016). A useful systematic review of research on youth expeditions was undertaken by Stott et al. (2015) which confirms the need for research using larger samples than the proliferation of anecdotal studies. This work is timely in light of increasing attention in education to character and terms such as perseverance, resilience, grit, confidence, optimism, motivation and drive. Critics have pointed out that such terms should be placed alongside values such as tolerance, respect, community spirit and neighbourliness (Alexander, 2015). Notwithstanding these debates, it is these capabilities that enable us to make the most of situations which offer opportunities for personal growth and development and have been referred to by Oevermann (1998) as structural optimism.

However, little is known about young people's self-awareness and self-reflection which has been argued to be crucial in making sense of the expedition experiences and meaningful learning beyond the experience 'in the field' (Allison, 1998; Stott et al., 2015). Stott et al. (2015) argue that positive change and increase in PSD may be triggered by the expedition itself and may not be immediately evident. Sayer (2011) argues that fundamental change in the world view does not happen immediately. Similarly, Petitpas, Cornelius, Van Raalte and Jones (2005) noted young people's inability to transfer life skills learnt through sport into their everyday lives due to lack of self-reflection and failure to internalise positive outcomes.

Furthermore, Allison et al. (2011) noted that some expedition participants experienced expedition reverse culture shock (ERCS). This recognition that some young people have difficulties in returning to their normal life and experience negative post-expedition outcomes such as isolation or even depression implies that there may be a more complex transfer into everyday life than initially assumed (Allison, 1998). As such, there is an emerging need to conduct longitudinal research following young people for a prolonged period of time on their return from expeditions. This challenges dominant assumptions that programmes have causal relationships with positive outcomes which inevitably continue into daily life in a simplistic or mechanistic manner rather than seeing change, learning and development as sophisticated and nuanced concepts which happen over extended time periods in complex ways.

To summarise, research on youth expeditions is in its infancy and there is a range of methodological and substantive issues in need of attention. Methodologically, it remains unclear as to the best times to undertake empirical work and what inferences can reasonably be made from data collected, for example, on the last few days of an expedition when spirits are typically 'running high'. There are multiple substantive issues requiring further work such as learning processes, environmental conditions, length of expeditions, motivations for expeditions, need for wilderness, and community visits.

Current study

This study aimed at investigating the longer-term benefits of extended expeditions (i.e. 3 or 5 weeks) to different locations (i.e. Amazon, Namibia, Norway, Finnmark, Ladakh and Namibia). This research particularly focused on the way in which young people understand and make sense of their experiences on British Exploring Society (BES) expeditions (previously the Public Schools Exploring Society and British Schools Exploring Society) and the ways in which the experiences might translate and inform their everyday lives after the return. There were three purposes for undertaking the research:

1. To gain a better understanding of the experiences of young people on BES Expeditions with specific regard to mental toughness, leadership, coping and GRIT – used as proxies for personal and social development.
2. To identify any evidence relating to expedition outcomes in relation to mental toughness, leadership, coping and GRIT.
3. To identify any themes emerging from data in relation to three and five week expedition differences and differing views with reference to science and adventure components of BES expeditions.

METHODS

Participants

Two hundred and fifty three young people took part in six summer expeditions. All young people who volunteered to participate in the research were aged between 15 and 22 years old (M = 17.47; SD = 1.50), and had chosen to take part in a summer expedition before agreeing to volunteer for the research project. The expeditions lasted either three or five weeks, and took place in either jungle, desert, polar or mountain environments. Of the 253 participants, 140 were female and 113 were male. Ninety-five chose to participate in a three-week expedition and 158 in a five-week expedition. One hundred and one young people chose a polar environment; 81 a desert environment; 38 jungle environment and 32 a mountain environment.

While 219 of the participants were used for the cross-sectional analysis, only 58 participants completed all three surveys at pre, post and delayed time points. These 58 participants were used for the main analysis. The demographics for these 58 participants were similar to the whole sample. Specifically, the mean age was 17.09 years (SD = 1.13), with the age range of participants between 15–21 years old. There were 36 females and 22 males; 18 participated in a three-week expedition and 40 in a five-week expedition. Twenty-six chose a polar environment; 21 a desert environment; six a mountain environment and five a jungle environment.

Materials

A survey was developed from four questionnaires to measure leadership skills, GRIT, coping strategy use, and mental toughness. Specifically, leadership skills were measured using Northouse's (2009) leadership skills questionnaire. This questionnaire consists of 18 items and included items such as "I am effective with the detailed aspects of my work"; "I usually know ahead of time how people will respond to a new idea or proposal" and "I am effective at problem solving". The LSQ uses a 5-point Likert scale

ranging from 1 – not true, to 5 – very true. The validity of the LSQ has been shown in previous work (e.g., Strong et al., 2013). Copies of the questionnaires are available from the corresponding author.

Second, GRIT was measured using Duckworth and Quinn's (2009) Grit Scale. This questionnaire consisted of 12 items and included items such as "I often set a goal but later choose to pursue a different one" and "I have overcome setbacks to conquer an important challenge". Items are rated on a 5-point Likert scale from 1 – not at all like me to 5 – very much like me. The validity and reliability of the Grit Scale were demonstrated by Duckworth and Quinn (2009).

Third, coping strategy use was measured using the brief COPE inventory (Carver, 1997). This questionnaire consists of 28 items and included items such as "I take action to try to make the situation better" and "I accept the reality of the fact that it has happened". Items are rated on a 4-point Likert scale from 1 – I don't do this at all to 4 – I do this a lot. The validity and reliability of the brief COPE inventory are demonstrated by Carver (1997).

Fourth, mental toughness was measured using the MT-18 questionnaire (Clough et al., 2002). This questionnaire consists of 18 items and included items such as "I generally feel in control" and "However bad things are, I usually feel they will work out positively in the end". Items are rated on a 5-point Likert scale ranging from 1– strongly disagree to 5 – strongly agree. Clough et al. (2002) demonstrated that the MT-18 has adequate psychometric properties.

In addition to the Likert scale responses, text boxes were provided for respondents to enter textual comments to allow richer more in-depth responses. These qualitative data were used to provide insight and complement the quantitative Likert scale data. Three prompts were provided for the open-ended questions relating to motivation to go on an expedition and location choice; learning on and from the expedition; and which aspects of the expedition they considered to be the most valuable.

Procedure

Ethical approval was sought and received through respective academic institutions. All the young people who were going on expeditions with BES were invited to complete the survey pre-expedition (June 2012, 2013, & 2014), post expedition (August–September 2012, 2013, & 2014) and three to four months after returning from expedition (December-January 2012/13, 2013/14, & 2014/15). It was made clear to them that the survey was voluntary and they did not have to take part, and that they could withdraw without consequence from the research at any time during the data collection period. It was also made clear that confidentiality would be maintained at all times.

As participants come from all over the UK an online questionnaire was designed for use with Bristol Online Survey (BoS) tool. This is a secure system that can be accessed via the Internet. To facilitate engagement, reminders via email, letter and social media were directed to all involved in the nine summer expeditions at each of the three data collection points. Furthermore, those who completed all three surveys were entered into a raffle for various prizes. From the possible 253 participants, 219 young people completed the pre-expedition survey, and a total of 58 completed all three surveys – pre, post and delayed over the three-year period. The remaining 34 participants completed either post or delayed-post only, or post and delayed-post surveys, but not pre.

Analysis

The impact of the expeditions in relation to leadership skills, coping strategy use, GRIT and mental toughness were evaluated over time (pre, post, delay) using four repeated measures ANOVAs. This allowed the main effect of the expedition intervention to be examined over time, and also the potential interaction effect of age, gender, cohort, and expedition length and type.

While it was not possible to have a parallel control group, a cross sectional analysis of the pre-expedition baseline scores across age groups was carried out. This analysis acted as a control by providing an understanding of the possible effects of age and maturation on leadership skills, coping strategy use, GRIT and mental toughness. For this analysis four between group ANOVAs were carried out.

Qualitative data were analysed using thematic analysis. All data were coded and themes identified by two of the researchers. The initial intention was to present the quantitative and qualitative data in an entirely integrated format in this paper but this proved impractical. Data are presented separately but connections between the two are highlighted which we anticipate readers will find useful.

RESULTS AND DISCUSSION

Overall

Fifty-eight young people completed the pre-expedition, immediately post expedition and three months post expedition questionnaires during 2012–13, 2013–14 and 2014–15. Eighteen of these young people were involved in a three-week expedition and 40 were involved in a five-week expedition. The results have been presented as graphs for each cohort separately and also combined. For the combined group, there were statistically significant improvements and small positive effect sizes in mental toughness ($P = 0.006$; $\eta p^2 = 0.167$), leadership skills ($P = 0.004$; $\eta p^2 = 0.18$), and GRIT

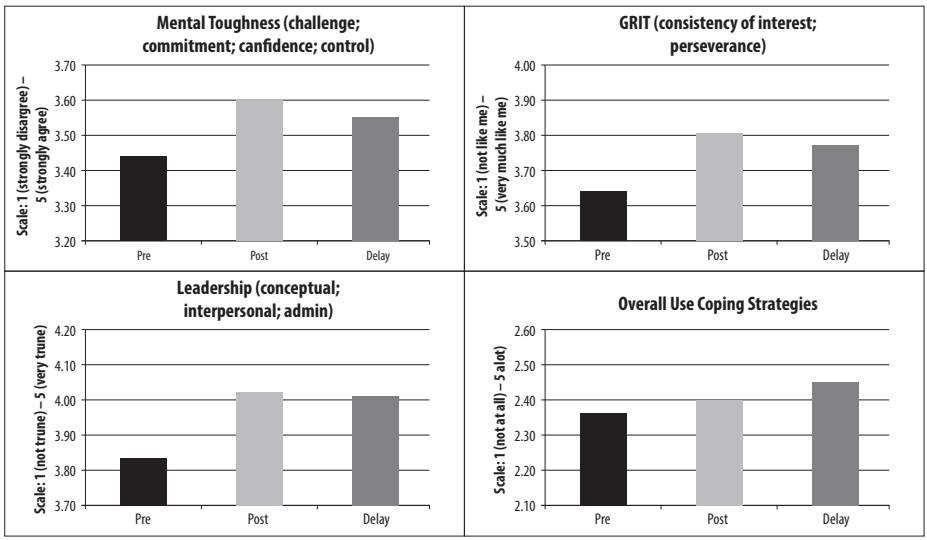

Figure 1 Impact of expeditions across time in the four domains from the 58 respondents

($P = 0.001$; $\eta p^2 = 0.218$). There was no significant difference ($P > 0.05$) or effect size for the application of coping strategies. Results are summarised in Figure 1.

Consistency across cohort, age, expedition type and gender

Interestingly, there were no significant interaction effects for the impact of age (U18, 18+), expedition type (jungle, desert, polar, mountain), cohort (12–13, 13–14, 14–15) and gender (female, male), with the exception of leadership for 'cohort' and GRIT for 'gender'. Specifically, there was a significant interaction effect of gender for GRIT ($P = 0.032$; $\eta p^2 = 0.117$), where it appeared that the impact of GRIT was more lasting into the 'delayed' phase for females. Similarly, the '14–15 cohort' showed a statistically significant reduction in leadership score into 'delay' where the other cohorts did not. The small numbers in some of the groups means that interpretation of the results of these interaction analyses needs to be taken with caution. Overall it is reasonable to conclude from the evidence that the expedition experiences studied here were consistent – it does not matter which year you go and where you go – the benefits reported are consistent.

Cross sectional control group

Finally, while there was no control group tracked alongside the young people who went on expedition, a cross-sectional analysis between age groups was carried out. Specifically, pre-expedition scores for GRIT, mental toughness, leadership and application of coping skills were examined across age groups (15–22 inclusive). This analysis revealed no significant differences for any of the psychological attributes at the pre-expedition stage for 15–22-year-olds – GRIT ($P = 0.490$; $\eta p^2 = 0.03$), mental toughness ($P = 0.346$; $\eta p^2 = 0.036$) leadership ($P = 0.633$; $\eta p^2 = 0.024$) or application of coping strategies ($P = 0.904$; $\eta p^2 = 0.013$). This implies that these psychological variables may not alter naturally over time. Put another way we are confident that the changes we have measured can be attributed to the expedition experience and are not a result of natural maturation (i.e. the changes would not have occurred without participating in the expedition).

Three or five weeks?

Overall, there were no statistically significant interactions or effects for 'length of the expedition' on any of the variables measured – GRIT ($P = 0.876$; $\eta p^2 = 0.00$), mental toughness ($P = 0.453$; $\eta p^2 = 0.02$) leadership ($P = 0.491$; $\eta p^2 = 0.02$) or application of coping strategies ($P = 0.368$; $\eta p^2 = 0.03$). This implies no differential effects between three and five-week expeditions on these psychological attributes. However, even with three cohorts, the results related to the impact of different length expeditions do need to be taken with caution due to the small group numbers involved, particularly as the trends for leadership, mental toughness and GRIT show greater positive change in the five-week cohort. Trends for the combined cohorts are presented in Table 1, with mean values, standard deviations and total numbers for pre, post and delay for three- and five-week expeditions, across the four attributes measured. In other words, while there are no statistically significant differences, there are some subtle indications in the trends that five weeks may lead to more change than three weeks.

Table 1 Mean values, standard deviations and total numbers for pre, post and delay for 3 and 5 week expeditions, across the four attributes measured (2012, 2013, & 2014 Expeditions)

	Leadership		GRIT		Mental Toughness		Coping Strategies	
	3-Week (n = 18)	*5-Week (n = 40)*	*3-Week (n = 18)*	*5-Week (n = 40)*	*3-Week (n = 18)*	*5-Week (n = 40)*	*3-Week (n = 18)*	*5-Week (n = 40)*
PRE	3.83 (0.39)	3.84 (0.37)	3.74 (0.63)	3.60 (0.50)	3.41 (0.43)	3.47 (0.48)	2.37 (0.21)	2.37 (0.26)
POST	3.97 (0.40)	4.04 (0.33)	3.89 (0.49)	3.78 (0.53)	3.52 (0.41)	3.63 (0.37)	2.41 (0.27)	2.39 (0.25)
DELAY	3.91 (0.38)	4.05 (0.32)	3.82 (0.60)	3.74 (0.56)	3.41 (0.44)	3.61 (0.41)	2.52 (0.27)	2.42 (0.30)

Qualitative themes

Thematic analysis identified two themes from the qualitative responses: Life changing experiences, science and adventure. Each theme is briefly summarised followed by two illustrative quotations.

Life Changing experiences: This cliché was evident at all stages of data collection suggesting that there is a connection to marketing and wider media/social expectations for expedition experiences. Participants talked prior to going about their expectation and anticipations – sometimes referring to friends who had gone on expeditions in previous years. Post and delayed post comments suggested that individuals had enjoyed a 'life changing experience' although we consider this to be an over statement and perhaps better characterised as an important transition experience which tends to happen at a time which young people are often maturing into adults and taking increased responsibilities such as leaving home. Aspects of this theme connect to leadership, mental toughness and GRIT in particular.

"It's passions I've had since a child – one being in nature, one being in mountains and one being in cold, snowy environments. It's the best thing I've ever done by a long way."

"I expected to come back a different person, and the expedition did not disappoint in that respect. I have much more of a 'can-do' outlook now, and I don't shy away from things, I just deal with them and get on with the task."

Science and Adventure. This theme was not surprising given the expeditions are composed of these two elements. However, interestingly in the second quote below a third component is highlighted which relates to the four Likert scales used in this research. Perhaps most importantly we believe these two quotes illustrate the interdisciplinary way in which people learn on expeditions and connections between science, adventure and development of interpersonal skills.

"I really wanted to make the most of my last proper summer before university. I have within the last year really enjoyed going hiking in the Brecon Beacons, etc. I have also always loved being active by climbing and being a lifeguard on the beach. The arctic expedition looked very attractive to me because it mixed together these two things with science which is my favourite subject area particularly biology which my fire did."

"The science and community work have been really useful with university application, but the most valuable aspects of the expedition were the teamwork, leadership and confidence boost."

CONCLUSIONS

This research aimed to consider expeditions in the light of four categories (leadership, coping, GRIT and mental toughness). Qualitative and quantitative data were collected and analysed pre, post and delayed post summer 2012, 2013, & 2014 expeditions. Throughout the research we looked for themes relating to current issues in expedition research – motivation to participate, the role of science and adventure and the differences between three- and five-week expeditions.

We found that there were changes reported both quantitatively and qualitatively with regard to personal development and can conclude that for most people the experiences are significant in positively influencing mental toughness, GRIT and leadership to succeed and ability to work as part of a team. The latter appears to be influenced positively by the recruitment of individuals rather than intact groups on to the expeditions. The trends of change, as summarised in Figure 1, indicate that these capacities are changing in different ways. Mental toughness and GRIT appeared to increase through the expedition, then decline over three months, albeit remaining higher than at pre-expedition levels. Leadership appeared to increase through the expedition and then remain stable, and the application of coping strategies appeared to keep increasing over time. Although, for coping there was no significant difference found.

While there were no statistically significant changes with relation to three- and five-week expeditions, some of the trends *may* suggest more advantage of the five-week, however the numbers are too small to be conclusive. We could detect no differences or patterns between ages or gender as to the benefits gained. None of the expeditions reported greater or lesser benefits than others. While no control group was possible to track alongside the expedition group, cross sectional analysis on the pre-expedition revealed no differences across age.

Motivations to go can be characterised as being about science, adventure and wanting a challenge. Interestingly very few were motivated to learn about leadership but were attracted to the country (e.g. glaciers, biodiversity). However, several reported that their leadership skills had developed after returning and having opportunity to reflect.

There are some wider implications of this work which merit consideration for the field of research in outdoor education and experiential learning. Many of the concepts that are measured in research such as this are related to character in some way. Different researchers conceptualise these concepts in different ways – whether they be traits or states, nature or nurture, character, behaviour, skills. Regardless of subject background and associated conceptions we believe that these are slow things to change and should ideally be studied over a lifetime. Studying them over a 6 month period (post expedition) is a start but the ideal approach for such work is to collect data either longitudinally or retrospectively for extended time periods. There are a host of methodological and logistical challenges to such approaches but we believe that the repeated pre-post and delayed post research design in outdoor experiential learning is unlikely to render any more meaningful findings than are already evident in the extant literature. The potential of mobile devices (e.g. Smart phones, iPads, etc.) for collecting these data before, during, after and delayed after expedition is an

exciting possibility in future, as is longitudinal design and creation of large databases. Methodological learning from other fields such as 'big data' can provide useful tools for analysis of such databases.

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