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# Developing a Growth Mindset through outdoor personal development: can an intervention underpinned by psychology increase the impact of an outdoor learning course for young people?

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## ABSTRACT

This study considers the impact of using a series of Mindset interventions during a five-day outdoor personal development (OPD) course. Self-efficacy, resilience and Mindset were measured pre course, post course and one month post course. It was hypothesised that both experimental and control groups would increase their self-efficacy and resilience, and that the Mindset (experimental) group would significantly increase beyond the levels of the control group, who took part in the standard OPD course. It was also predicted that the Mindset group would move towards a Growth Mindset, whereas the control group would not show any change in Mindset. Hypotheses were tested using a randomised, quasi-experimental method. Separate mixed analyses of variance were carried out for each dependent variable, followed by planned comparisons and *post-hoc* tests using a Bonferroni correction. Results showed that both groups increased self-efficacy over time; however, there was no further significance for the experimental group. Resilience only increased significantly in the experimental group while the control group made no significant gain, and students in the experimental group moved significantly towards a Growth Mindset while the control group did not.

## KEYWORDS

personal development;  
positive psychology;  
resilience; Mindset;  
self-efficacy

## Introduction and literature review

Outdoor personal development (OPD)<sup>1</sup> courses are beginning to gain a reputation for developing desirable personality characteristics which are in keeping with the positive psychology movement (Sheard & Golby, 2006). However, as yet there is little evidence to support claims that such programmes can have an effect on psychological constructs (Neill & Dias, 2001; Sheard & Golby, 2006), and even less of such research is based on five-day residential programmes typically attended by young people in the United Kingdom (Scrutton, 2014).

Positive psychology is a branch of psychology which seeks to use psychological theory, research and interventions to recognise and develop human potential (Seligman & Csikszentmihaly, 2000). Recent literature suggests that finding congruent themes from within psychology and OPD may provide an integrative framework for understanding some of the processes underlying the success of OPD courses, and may also strengthen the impact of programmes and research (Mackenzie, Son, & Hollenhorst, 2014). It has also been suggested that the impact of OPD courses may be enhanced if instructors have an awareness of the factors which contribute to particular areas of psychological development, and explicitly focus upon these (e.g., Ewert & Yoshino, 2011).

A series of potentially valuable and compatible themes may emerge from Implicit Self Theories research (now commonly known as Mindset;<sup>2</sup> Dweck, 2000). Mindset theory is a socio-cognitive model representing the way in which underlying beliefs regarding the self can transform into powerful motivational processes to construct significant patterns of cognition, affect and behaviour in young people (Dweck & Leggett, 1988). The theory explains how different meaning systems, and subsequent self-regulatory processes, are created in achievement situations, depending upon a person's beliefs regarding the fixed or malleable nature of intelligence, personality and character (Burnette, O'Boyle, VanEpps, Pollack, & Finkel, 2012; Dweck & Molden, 2005). Such patterns are particularly significant when people are faced with challenge or failure (Dweck & Sorich, 1999).

Someone who has a Fixed Mindset believes that intelligence, personality and character are fixed from birth, and therefore these are uncontrollable entities which they cannot change (Dweck & Sorich, 1999). This creates a meaning system focused on proving oneself, and the pursuit of tasks which will reaffirm this pre-set ability. Challenges are viewed as a threat to their abilities; if they cannot meet them, failure becomes a final measure of aptitude, and application of effort is seen as a measure of their incapability in that area (Bandura & Dweck, 1985; Elliott & Dweck, 1988; Stone & Dweck, 1998). Subsequently, those with a Fixed Mindset tend to avoid challenges for fear of revealing weaknesses, give up easily, become distracted and withdraw effort when things become difficult (Elliott & Dweck, 1988). Early research describes this as a 'helpless' response (Diener & Dweck, 1978; Dweck & Reppucci, 1973).

Conversely, a person with a Growth Mindset believes that intelligence, personality and character are malleable, and therefore open to change and development under personal volition (Dweck & Leggett, 1988). This belief leads to a different response. People with a Growth Mindset seek out challenges, seeing them as opportunities to learn (Elliott & Dweck, 1988). Rather than viewing effort as a measure of ability, they see it as the switch which can turn on their abilities, believing effort to be a necessary ingredient for success (Blackwell, Trzesniewski, & Dweck, 2007; Dweck, 1986; Hong, Chiu, Dweck, Lin, & Wan, 1999). This means that when things become difficult a person with a Growth Mindset will tend to adopt new strategies, find solutions, apply more effort and use self-monitoring to overcome the challenge (Diener & Dweck, 1978; Doron, Stephan, Boiché, & Scanff, 2009). This is also described as a 'mastery' response (Diener & Dweck, 1978) and has been shown to be a key factor in predicting achievement outcomes (Burnette et al., 2012).

Initial studies were undertaken in laboratories, leaving some uncertainty as to whether or not such significant patterns would play out in real-world situations (e.g., Bandura & Dweck, 1985; Elliott & Dweck, 1988; Erdley, Cain, Loomis, Dumas-Hines, & Dweck, 1997; Stone & Dweck, 1998). However, there have been huge research efforts in the past 20 years to increase the ecological validity of this theory and create the existing body of evidence suggesting that Mindsets do matter, they have huge implications for creating successful outcomes in young peoples' lives and, crucially, they can be changed (Dweck, 2008).

A Growth Mindset has been shown to have a favourable influence on grades and achievement test scores, as well as self-esteem (Aronson, Fried, & Good, 2002; Good, Aronson, & Inzlicht, 2003; Henderson, 1990; Robins & Pals, 2002). This Mindset also predicted an upward trajectory in grades across a junior high transition, while those in a Fixed Mindset showed a flat or downward trend in grades (Blackwell et al., 2007).

Although research began with a focus on intelligence, and therefore influences in the academic domain, it has been shown to be applicable to any areas of the self (Dweck & Leggett, 1988). Studies have shown similar implications for athletic performance (Kasimatis, Miller, & Marcussen, 1996; Ommundsen, 2003), social confidence (Beer, 2002) and effective dieting (Burnette, 2010).

Studies in recent years have shown that interventions targeting beliefs can change behaviour patterns, which in turn affect achievement outcomes (Dweck, 2008). This may have crucial implications for people working in personal development contexts.

Early studies considering changing Mindset took students who were at risk of underperforming due to belonging to a negatively stereotyped group and taught them a Growth Mindset through discussions with mentors and letter writing. Both showed a significant increase in their overall performance on

standardised tests as well as increasing their valuing of academics and enjoyment of academic work (Aronson et al., 2002; Good et al., 2003). The most in-depth recent study followed students aged 11 and 12 throughout their junior high transition. They were taught a Growth Mindset over eight weekly sessions during their first year of high school. Pre intervention the majority of students showed a downwards trend in grades at this time; however, the programme was shown to reverse this trend due to its impact on underlying beliefs, which in turn changed potentially detrimental cognitive and behavioural patterns (Blackwell et al., 2007). Students in the intervention group were also three times as likely to show positive changes in classroom motivation, rated by teachers unaware of the experiment. Encouragingly, these results still held two years later with students who showed a Growth Mindset significantly outperforming their peers (Blackwell et al., 2007).

These interventions yielded surprisingly large changes with modest input, showing the effectiveness of targeting beliefs that lie at the heart of important motivational and self-regulatory processes (Dweck, 2008). Dweck and Molden (2005, p. 137) comment that, 'Although self theories can be relatively stable over time, they are knowledge structures, and as such their accessibility can be changed by powerful situations and interventions.'

### **OPD and Mindset**

This is where OPD returns to the focus. The attitudes and behaviours associated with the two Mindsets are incited when individuals confront challenging situations (Dweck, 2012; Dweck & Molden, 2005). An outdoor course has the potential to create just the challenging circumstances required to elicit the concert of motivational and behavioural processes associated with these, as has been shown in a sports context (Ommundsen, 2003). Miles and Priest (1999, p. 112) comment that:

[OPD] courses require participants to leave the safety of the home, the daily routine and cope with the unfamiliar, the uncomfortable, the difficult and the adventurous, in search of an opportunity to understand, test and demonstrate their own resources, participants are challenged to learn about themselves and the world and discover endless possibilities for personal growth.

Consequently, it is feasible that course members will experience aspects of their Fixed or Growth Mindset during an OPD course. Facilitators may be able to intervene in real-time situations if they have an understanding of how each Mindset can play out, as well as teaching and encouraging the Growth Mindset throughout the course.

One of the most widely investigated areas in the outdoor literature is change to 'self-concept' (Ewert, 1982; Hattie, Marsh, Neill, & Richards, 1997; McKenzie, 2000). This can be defined generally as 'the individual's belief about himself or herself, including the person's attributes and who and what the self is' (Baumeister, 1999, p. 21). Research has shown that the effect of OPD courses on self-concept can be greater than that typically found in classroom settings (Hattie et al., 1997). However, previous outdoor research has been criticised for describing the outcomes of courses but neglecting to gain a deeper perspective on the processes by which change occurs in such areas (Baldwin, Persing, & Magnuson, 2004; Ewert & McAvoy, 2000; Henderson, 2004; Sibthorp, Paisley, & Gookin, 2007). This has been described as the 'black box' (Ewert, 1989). Because the two Mindsets can be seen as two fundamentally different ways of conceptualising the self, this model may advance understanding into changes in this area. Mindset may offer insight into how OPD courses significantly impact self-concept as they encourage individuals to consider their own capacity for personal growth. By explicitly using this model, which seeks to explain underlying psychological processes, it is hoped that an increase in impact can be demonstrated, thereby offering greater understanding into what may occur in the 'black box' (Ewert, 1989). Such theoretical integration may allow practitioners to better elucidate and employ the methodologies which promote positive outcomes for participants (Mackenzie et al., 2014).

Many of the other adaptive functions of the Growth Mindset have also been shown to be enhanced by OPD courses, including increased capacity to take on challenges (Cooley, Holland, Cumming,

Novakovic, & Burns, 2014; Hattie et al., 1997), increased use of mental strategies to overcome difficulties and the perception of the utility of effort when challenged (Scherl & Smithson, 1986). This adds weight to the argument that OPD courses may enhance factors associated with the Growth Mindset, as well as supporting the case for a more explicit intervention enabling young people to highlight and reflect on specific areas as recommended by Ewert and Yoshino (2011).

Two psychological constructs which are gaining support in the outdoor literature, and have also been linked to Mindset, are self-efficacy and resilience (Dweck, 2008; Hans, 2000). Self-efficacy refers to a person's beliefs regarding their ability to create a positive outcome in a given situation (Bandura, 1977), and has been shown to increase after an outdoor learning course (Beightol, Jeverson, Carter, Gray, & Gass, 2012; Cason & Gillis, 1994; Hayhurst, Hunter, Kafka, & Boyes, 2013; Marsh, Richards, & Barnes, 1986; Social Impact Report, 2014).

Resilience can be defined in a number of ways but fundamentally includes positive adaptation, balance, competence, determination and acceptance (Wagnild, 2009). Some studies have shown resilience to increase post outdoor course (Hayhurst et al., 2013; Ewert & Yoshino, 2011; Neill & Dias, 2001; Social Impact Report, 2014), while others have shown null effects (Ewert & Yoshino, 2008; Skehill, 2001) or limited effects (Beightol et al., 2012). Much of the published evidence to date is based on studies undertaken with university students (Ewert & Yoshino, 2011), often with small sample sizes (Sheard & Golby, 2006), or based on the three-week Australian model of OPD (Neill & Dias, 2001).

Many researchers are highlighting the need for systematic research, including follow-up data, which gathers empirical evidence using randomised controls and larger sample sizes, to support and understand some of the intricacies of programme effects in these areas (Hattie et al., 1997; Gillis, Gass, & Russell, 2008; Ewert & Sibthorp, 2009; Neill, 2002; Sheard & Golby, 2006). It is hoped that this study will contribute to a growing knowledge base in this area, particularly offering greater insight into the effects of five-day programmes typically experienced by young people in the United Kingdom. Because there is currently no published academic research investigating the impact of explicitly combining a positive psychology theory within an OPD context, this may offer a valuable contribution to advancing knowledge into the process of developing positive psychological qualities in young people through OPD courses.

One unpublished study has considered the combination of a Mindset intervention with an OPD course. This study found that the intervention had a significant impact on young people's Mindset, self-efficacy and optimism, although the specifics of the intervention were unclear (The Centre for Confidence and Wellbeing, 2009). The following research aims to build on this study in a number of ways, including recruiting a higher number of participants, post-course data collection and using similarly trained instructors.

This synthesis of research has outlined the potential benefits to be gained from interweaving an intervention based on Mindset theory within an OPD course. The experimental group will undertake sessions based on Mindset within their course, while the control group will complete a standard OPD course. The following is hypothesised:

- **Hypothesis 1 (H1):** The OPD course (control group) will
  - (a) significantly increase students' self-reported levels of self-efficacy and resilience, and
  - (b) not significantly change students' Mindset.
  
- **Hypothesis 2 (H2):** The OPD course with the Mindset intervention (experimental group) will
  - (a) significantly increase students' self-reported levels of self-efficacy and resilience, relative to the control group, and
  - (b) significantly change students' Mindset in the direction of a Growth Mindset.

## Methodology

### Design

This research has been granted ethical approval (University of East London, 2014). The research is undertaken from a positivistic standpoint in that it uses the scientific method to approximate understanding of objective reality (Creswell, 2003). The limitations of this are recognised because there are a number of confounding variables due to it taking place in an open human environment. Therefore, the intention is to identify trends and estimate the probability of the intervention increasing resilience, self-efficacy and Growth Mindset (Muijs, 2004).

The research follows a quasi-experimental design, with students randomly assigned to the experimental and control groups by the centre administrator. The Mindset intervention forms the independent variable. Participants completed a pre-test, post-test and one month post-test batch of questionnaires which measure the dependent variables of self-efficacy, resilience and Mindset. This is a commonly used design in educational research; randomisation ensures that threats to internal validity are controlled for (Campbell, Stanley, & Gage, 1963).

### The OPD course

This research has been carried out within The Outward Bound Trust, the leading organisation within adventure education around the world since 1941 (Miles & Priest, 1999). They are also one of the biggest providers of personal development in the United Kingdom, working with 24,602 young people in 2013 (Social Impact Report, 2014).

Because the entire intervention took place in a residential setting, the participants were exposed to a comparable social environment, daily routine and activities so any confounding variables were kept to a minimum (Creswell, 2003). Key variables which were controlled for to ensure all participants had parity of experience included jumping in the lake, a full-day linked journey involving rock climbing or gorge walking and journeying on the lake, a two-day mountain expedition with a wild camp (this was a mountain day for one school) and a variety of activities to promote teamwork and support in the groups. Because the instructors create a programme to fit the needs of the students in their group, programmes contained some variation. In real-world educational settings it is recognised that it would be a mistake to attempt to hold all variables constant in situations which are usually interactive, dynamic and relational (Cohen, Manion, & Morrison, 2007).

It is accepted that a significant confounding variable may be that of the instructor delivering the course (Hattie et al., 1997). All of the instructors have worked at The Outward Bound Trust for at least 12 months so had experienced similar training. Their experience in delivering outdoor learning courses varied from three to 10 years. However, these factors were the same for the instructors working with both the experimental and control groups. The researcher took on the role of Course Director during each of the courses which ensured the quality and consistency of the intervention, as well as making sure the control groups were not exposed to any explicit learning about Mindsets. Instructors were also given a written brief of session plans to work from and The Outward Bound Trust learning process model was used throughout all of the courses, as outlined in Figure 1 (The Outward Bound Trust, 2014).

### The intervention

The intervention was designed by the researcher and colleagues, based on explicitly exploring the areas of responding to challenge, application of effort and overcoming setbacks, found to be key components of Mindset theory. The intervention consisted of four integrated sessions spread out through the week. On the first afternoon students considered cartoon pictures relating to the two Mindsets, and discussed in small groups their beliefs regarding the nature of intelligence,

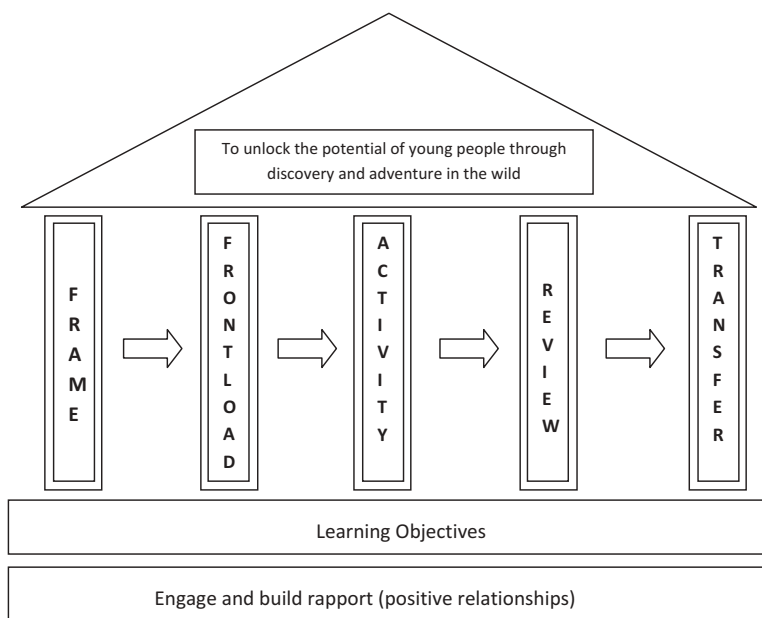


**Figure 1.** The Outward Bound Trust learning process model.

personality and character. Instructors introduced the two Mindsets briefly, emphasising the benefits of thinking in a growth-minded way.

Day two looked at the Mindset Cycle, which is a pictorial explanation of how each Mindset can lead to different feelings, behaviours and outcomes. This was done in a practical manner using a challenging activity to explain the idea.

Day three took place before students went on their overnight expedition or hill day, and involved students highlighting what the group would be thinking, doing and experiencing during the expedition in each of the Mindsets. Consideration was also given to some of the challenges which lay ahead, and what mastery coping strategies could be used to promote success. Instructors consistently emphasised that each Mindset is a choice, and encouraged participants towards a Growth Mindset and the use of mastery coping strategies. A review was carried out post expedition; while these were planned to fit each group, they all returned to the themes of overcoming challenge, application of effort and responses to any setbacks encountered, as well as reinforcing success experiences and contributing factors in this.

The final review and transfer of learning followed the same format for each group. It involved the students completing a written action plan to outline two challenges they would face in the next month (one academic and one non-academic), what strategies they could use to meet these, whose support would be useful and highlighting someone they knew who was already successful at the challenge so they had a role model to refer to.

A structured approach was taken to ensure a level of continuity for the experimental group. While there was a basic written framework for the interventions, and the same models were used, there will have been some differences in the exact methods that instructors used in their delivery. There was also some adaptation from instructors in response to their students' needs and interaction with the intervention. This would happen in most educational settings with young people so while it may be seen as a limitation in terms of scientific research it has a logical sense to it in real-world application (Cohen et al., 2007).

## Participants

Three schools from within the United Kingdom agreed to take part in the study ( $n = 196$ ; male = 104, female = 92). Pupils were in Years Six to Nine at school.<sup>3</sup>

Participants from each school were split equally into the experimental group ( $n = 103$ ) or the control group ( $n = 93$ ) by the centre administrator, meaning that the students were blind to the experimental condition they were part of. Each condition contained roughly equal numbers of students from each school, age group and gender. While there was one control condition and one experimental condition, these were made up from different groups of young people who attended the centre in three different weeks. Participants were given minimal information regarding the study, only that the research was looking at changes in psychological constructs over time. This reduced the subtle effects incurred from the students knowing the details of the experiment, and allowed the study to be carried out under natural conditions, without them altering their behaviour or responses (Cohen et al., 2007).

Ten students from the control group were eliminated from the analysis due to them not filling in the correctly coded questionnaires, therefore their responses for each time point could not be matched.

## Data collection

Three psychology scales were filled in at school the week before students attended the course, on the final day of the course and one month later back in the school environment. The General Self Efficacy scale, with a score range from 10 to 40, measures a sense of personal competence to deal effectively with a selection of stressful situations (Schwarzer & Jerusalem, 1995). Numerous studies have established its validity and reliability with Cronbach's alpha values ranging from 0.76 to 0.9, the majority being in the high 0.8 region (Schwarzer & Jerusalem, 2014). The Resilience Scale—14 (RS—14), with a score range of 14–98, was used to measure resilience because it measures five facets of the construct including perseverance and self-reliance (Wagnild & Young, 1993). It has also previously been used in outdoor adventure studies (Neill & Dias, 2001; Skehill, 2001). The shorter version was selected to suit this younger population, which has alpha values ranging from 0.85 to 0.94 across a range of studies (Wagnild, 2009). The Implicit Self Theories scale, with a score range from 10 to 60, was used to measure the participants' theory of intelligence (Mindset). The scale measures the degree to which participants hold a Growth or a Fixed Mindset. It has high internal reliability with Cronbach's alpha values ranging from 0.94 to 0.98 (Dweck, Chiu, & Hong, 1995). The theory of intelligence scale was selected for measuring Mindset as this is congruent with what is used in educational settings. Because this is the context which the OPD course is linked to, this was the most appropriate measure.

## Results

A one-way analysis of variance (ANOVA) confirmed that Levene's Test for Equality of Variances had not been violated and the baseline for all dependent variables was comparable (see Table 1). Mauchly's test was reviewed, indicating that the assumption of sphericity had not been violated for any of the variables. Data distributions were normal. While gender and participant age may reveal significant results, it is beyond the scope of this article to explore them further here so they were not included as variables in any of the following analyses.

## Self-efficacy

A mixed-factorial  $2 \times 3$  ANOVA was conducted with a within-participants factor of time (T1, T2, T3), a between-participants factor of group (experimental, control) and self-efficacy as the dependent variable. There was a main effect for time,  $F(2,191) = 10.64$ ,  $p < 0.001$ ,  $\eta^2 = 0.10$ , but no interaction with condition,  $F(2,191) = 0.76$ ,  $p = 0.467$ ,  $\eta^2 = 0.008$ .

**Table 1.** Mean scores for self-efficacy, resilience and Mindset at time one.

| Group      | Self-efficacy |      | Resilience |       | Mindset |      |
|------------|---------------|------|------------|-------|---------|------|
|            | Mean          | SD   | Mean       | SD    | Mean    | SD   |
| Control    | 31.77         | 3.79 | 79.24      | 10.26 | 10.19   | 4.35 |
| Experiment | 31.63         | 3.79 | 76.62      | 12.54 | 9.28    | 4.28 |

Follow up pair-wise comparisons using the Bonferroni correction for time indicated that changes in T1–T2 scores reached statistical significance ( $p < 0.001$ ), as did T1–T3 ( $p < 0.001$ ). Changes from T2–T3 were not significant ( $p = 0.73$ ). See [Figure 2](#) for self-efficacy results.

### Resilience

A mixed-factorial  $2 \times 3$  ANOVA was conducted with a within-participants factor of time (T1, T2, T3), a between-participants factor of group (experimental, control) and resilience as the dependent variable. There was a main effect for time,  $F(2,191) = 8.67$ ,  $p < 0.001$ ,  $\eta^2 = 0.08$ . There was also an interaction with condition,  $F(2,191) = 5.83$ ,  $p = 0.003$ ,  $\eta^2 = 0.058$ .

A planned comparison highlighted that the main effect for time was only significant for the experimental group,  $F(2,101) = 12.73$ ,  $p < 0.001$ ,  $\eta^2 = 0.20$ . There is a significant linear ( $p < 0.001$ ) and quadratic component ( $p < 0.001$ ) to this, showing that students in the intervention group significantly increased in resilience, which reduced slightly one month post intervention. The control group did not significantly change their resilience over time,  $F(2,91) = 1.90$ ,  $p = 0.16$ ,  $\eta^2 = 0.04$ .

*Post-hoc* pair-wise comparisons using a Bonferroni correction for time indicated that changes in T1–T2 scores for the experimental group reached statistical significance ( $p < 0.001$ ), as did T1–T3 ( $p < 0.001$ ). Changes from T2–T3 were not significant ( $p = 0.06$ ). See [Figure 3](#) for resilience results.

### Mindset

A mixed-factorial  $2 \times 3$  ANOVA was conducted with a within-participants factor of time (T1, T2, T3), a between-participants factor of group (experimental, control) and Mindset as the dependent variable. There was a main effect for time,  $F(2,193) = 11.05$ ,  $p < 0.001$ ,  $\eta^2 = 0.10$ . There was also an interaction with condition,  $F(2,193) = 3.56$ ,  $p = 0.03$ ,  $\eta^2 = 0.04$ .

A planned comparison highlighted that the main effect for time was only significant for the experimental group,  $F(2,101) = 15.46$ ,  $p < 0.001$ ,  $\eta^2 = 0.24$ . There is a significant linear and quadratic component to this ( $p < 0.001$  for both), showing that students in the intervention group made

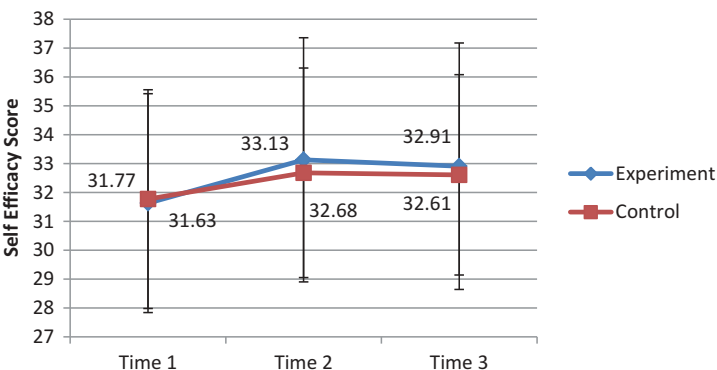


**Figure 2.** Self-efficacy results, with standard deviation bars.

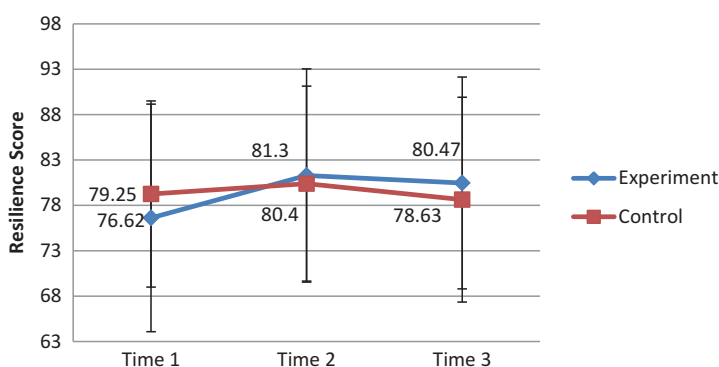


**Figure 3.** Resilience results, with standard deviation bars.

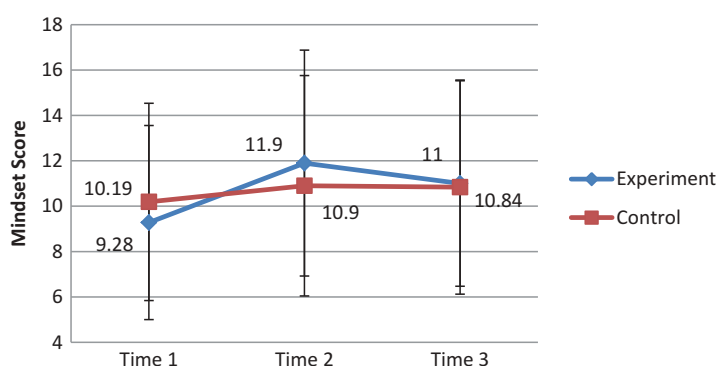


**Figure 4.** Mindset results, with standard deviation bars.

significant progress towards a Growth Mindset over time, which reduced slightly one month post intervention. The control group did not significantly change their Mindset over time,  $F(2,91) = 0.99$ ,  $p = 0.37$ ,  $\eta^2 = 0.02$ .

*Post-hoc* tests with a Bonferroni correction showed that changes within the experimental group were significant at T1–T2 ( $p < 0.01$ ) and T1–T3 ( $p = 0.01$ ), but non-significant from T2–T3 ( $p = 0.09$ ). See Figure 4 for Mindset results.

## Discussion and implications for practice

This study tested two hypotheses. It was hypothesised that the control group would increase in self-efficacy and resilience (H1(a)), but not change Mindset (H1(b)), and that the experimental group would further increase in self-efficacy and resilience (H1(a)), as well as moving towards a Growth Mindset (H2(b)).

For the first time, evidence is provided that combining a Mindset intervention within an OPD course can increase the impact of the course in terms of resilience and change in Mindset. This supports growing evidence to suggest that OPD courses may be enhanced by understanding key psychological theory and may also offer advances in knowledge into the intricacies of the process by which OPD courses are able to impact on certain areas of psychological development.

The Mindset results support both H1(b) and H2(b). As expected, only the group who took part in the Mindset intervention throughout their outdoor course significantly moved towards a Growth Mindset. While this study does not delve beyond self-report, it is possible that students who moved

towards a Growth Mindset could go on to experience the many behavioural and motivational benefits found in the Mindset literature, such as improved motivation to learn, an increase in grades and higher self-esteem (Blackwell et al., 2007). A longitudinal study including behavioural, motivational and achievement measures may offer more insight into this fascinating area.

The resilience results give pause for thought. While resilience showed a significant increase for those who took part in the Mindset intervention during their OPD course, it did not significantly increase for those who participated in the OPD course alone, supporting H2(a) but not H1(a). It is likely that the increase in resilience for the experimental group is linked to these students' move towards a Growth Mindset, as previous research has found strong links between these two areas (Dweck, 2008). If participants are explicitly encouraged towards the belief that they have personal control over their development, gain an understanding of the utility of effort when facing challenges and have built up a bank of transferable strategies to use when facing setbacks, they are more likely to feel resilient and display resilient behaviours in future situations. In this respect, Mindset may offer outdoor practitioners a well-researched and logical framework to use when processing challenging experiences with young people, which can contribute to enhancing resilience.

The study may also contribute to understanding resilience development in a number of ways. Mixed results from previous studies coupled with these results support the previous suggestion that resilience development may not be as straightforward as participants just taking part in a series of progressive outdoor challenges (Hayhurst et al., 2013). Previous outdoor studies discuss Rutter's (1990) idea of 'psychological immunisation', where participants experience manageable doses of adversity and challenge, in order to practice the skills and behaviours required to successfully overcome these (Hayhurst et al., 2013; Neill & Dias, 2001). It has been thought that such experiences can lead to greater resilience in new situations (Rutter, 1987). The results of this study suggest that this alone may not be the case.

Both groups took part in similarly progressive challenging outdoor experiences, yet only the group who engaged with structured processing specific to overcoming challenge with support, application of effort and highlighting transferable strategies for overcoming setbacks showed a significant change in their resilience levels.

The complexities of impacting on young people's resilience are beginning to be considered in more detail in the literature. Hayhurst et al. (2013, p. 2) comment that 'programmes must allow young people to successfully overcome challenges in a manner which increases self efficacy and confidence in one's ability to influence their environment'. This study suggests going a step further than that. The control group may have increased self-efficacy as students experienced success and gained a sense of their personal competence. However, a person may believe that they can create a positive outcome due to fixed, innate traits which they possess. This person would have self-efficacy, but a Fixed Mindset. The Mindset interventions were designed to target beliefs about the malleability of intelligence by also focusing on developing strategies when challenged and changing students' relationship with effort. This is thought to be more transferable to future situations because students have more than just experiences of success, but a tool kit to use in future challenges. Without the intervention, the control group did not develop in this area. Other researchers have also suggested that increasing resilience requires development of tools and strategies which participants can use in a variety of contexts, as well as connecting the adventure experience to appropriate settings such as school or home (Beightol et al., 2012).

It may be that it was the focused processing during the interventions in this study which enabled these young people to increase their resilience (Knapp, 1990). Changes in thinking may be underpinned by their deeper understanding of the process by which success had been achieved during their outdoor programme, coupled with tangible strategies which can be used when facing future challenges or setbacks (Luckner & Nadler, 1997). This is an area of interest which could be pursued further with a qualitative follow-up study.

It is also possible that the existing resilience studies which have found significant results have included considerable processing in these areas, while the others have not. The limited articulation

of a learning process used during outdoor programmes is frequently critiqued in the literature (Fiennes et al., 2015). Results from this study support earlier suggestions that this may be an area worthy of further research (Cason & Gillis, 1994; McKenzie, 2000).

While the structured processing appeared to have an impact on changing Mindset and increasing resilience, it had less of an influence on self-efficacy. Although self-efficacy improved slightly more for the experimental group, this was not found to be statistically significant, supporting H1(a) but not H2(a). It could be expected that participants would develop in this area by engaging with a series of well-planned, facilitated and progressive challenges where they are experiencing mastery. This finding supports previous studies which suggest that OPD courses improve self-efficacy (Beightol et al., 2012; Hattie et al., 1997; Sheard & Golby, 2006), and suggests that further specific intervention had little effect on this construct.

It has been shown that using a series of interventions underpinned by the psychology theory of Mindset can increase the impact of an OPD course in terms of resilience and Mindset. However, there may be drawbacks to focusing considerable attention on one area of processing. While the experimental group made significant gains in resilience and Mindset, they may have missed out in other important areas which were not measured by this study. It is possible that time spent focusing on Mindset may have inadvertently directed attention away from other important course outcomes, which were not linked to resilience, such as teamwork, communication or learning about the natural environment. Similarly, because instructors for the control groups were asked to 'meet the outcomes of the course without explicitly using any Mindset theory or models', they may have spent less time and focus on themes of challenge, effort and setbacks, and more time on the other aforementioned outcomes. This may explain the lack of significant increase in resilience for this group and also presents a possibility that they developed further in areas not measured.

The latter has implications for practitioners because it suggests that the areas of focus chosen by the instructor and how they choose to facilitate these could have a large impact on the outcomes experienced by young people. In many ways this supports current practice of developing targeted courses to suit different populations (The Outward Bound Trust, 2014). This may be built upon and impact may be increased for a range of clients by creating structured and focused interventions underpinned by current psychological research to complement the many benefits which OPD courses have frequently been shown to offer. Further research could include another group, as well as a pure control, who undertake a structured and focused intervention relating to a different course outcome. Inclusion of measures of a variety of outcomes would allow any differences in development to be highlighted, giving further insight into the impact of intentional focus directed by the instructor through processing.

Positive psychology has a growing empirical knowledge base which offers a multitude of opportunities for outdoor practitioners, both in terms of theory and scientifically validated interventions. Equally, OPD programmes use unique environments and methods to engage young people in their personal growth. A 'symbiotic integration' of knowledge from both fields may facilitate development of a common language between youth development practitioners in a variety of contexts, ultimately meaning greater impact in the lives of young people (Mackenzie et al., 2014).

## Limitations

While this study offers a significant contribution to the outdoor literature, particularly regarding development of resilience, there are some limitations and suggested improvements. Unfortunately, the school that was providing the non-outdoor control group was unable to participate, meaning there was no comparison for the effects of time or usual environment on the constructs measured. In future studies this should be included.

Results were gained using self-report. While this may provide the beginnings of understanding into a very complex process, self-perception of each construct is measured, rather than actual behaviour in real situations which may be vastly different (Baumeister, Vohs, & Funder, 2007).

Future studies could build on this to incorporate follow-up measures which aim to consider changes in behaviour, as well as thinking post course—similar to Blackwell et al. (2007).

It is also possible that certain elements of courses and the intervention, or the mix of the two, had a particular impact. It would be useful to undertake qualitative research with a sample of the participants to ascertain which experiences were most salient to them in developing resilience and moving towards a Growth Mindset, and also whether or not self-reported changes have led to any observed behaviour changes in their lives.

## Conclusions

This preliminary study has investigated whether the inclusion of an intervention underpinned by psychological theory and research can increase the impact of an OPD course, in terms of self-efficacy, resilience and Mindset. Findings suggest that interweaving a structured and focused intervention within an OPD course can have a significant impact on participants' Mindset as well as increasing their resilience levels.

Results also suggest that taking part in an outdoor programme alone is not enough to increase resilience and change Mindset. Something deeper is required, arguably a series of progressive challenges undertaken in a supportive environment, combined with structured facilitation which focuses on the psychology of this area of development. Mindset may offer one theoretical model based on extensive research within the psychology field which can provide outdoor practitioners with a framework to use in supporting young people to develop their understanding of the psychological processes involved with overcoming challenges and creating successful outcomes in their lives. This research supports further integration of psychology theories into OPD practice to enhance understanding and subsequently increase practitioners' ability to provide courses which have a lasting impact (Mackenzie et al., 2014).

## Notes

1. OPD is used throughout to highlight focus upon outdoor courses which have the explicit aim of providing personal development outcomes. This may also be referred to as outdoor education, outdoor learning or adventure education in other literature.
2. Mindset is a positive psychology theory. It will be given a capital throughout to emphasise that it is the theory which is being referred to rather than a more generalised conception of the term.
3. Exact ages of the students are unknown because this information was not supplied.

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## Disclosure statement

No potential conflict of interest was reported by the authors.

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**Tim Lomas** is a lecturer at the University of East London, where he is the co-programme leader for the MSc in Applied Positive Psychology and Coaching Psychology. Tim completed his PhD at the University of Westminster in 2012, focusing on the impact of meditation on men's mental health. He is the author of numerous books and papers, covering topics including mindfulness, Buddhism, gender, cross-cultural psychology, and neuroscience. His latest book, entitled *The Positive Power of Negative Emotions* will be published by Piatkus in Autumn 2016.

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