

# **Positive Psychology Journal Paper**

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<sup>1</sup> interventions during a five day Outdoor Personal Development (OPD<sup>2</sup>) course.

Self efficacy, resilience and Mindset were measured pre-course, post-course and one month post-course. It was hypothesized that both groups would increase their self efficacy and resilience, however it was thought 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 randomized, quasi-experimental method. Separate mixed Analysis of Variance (ANOVAs) 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 made no significant gain, and students in the experimental group moved significantly towards a Growth Mindset, while the control group did not.

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<sup>1</sup> 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.

<sup>2</sup> 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.

Mindset theory may provide outdoor practitioners with a model underpinned by extensive empirical research, which supports understanding of some of the many processes associated with overcoming challenges to reach achievement in a variety of contexts. Future directions and implications for practice are discussed.

Keywords: outdoors, personal development, positive psychology, resilience, mindset, self efficacy

## **Introduction and Literature Review**

Outdoor Personal Development (OPD) courses are beginning to gain a reputation for developing desirable personality characteristics which are in keeping with the positive psychology (PP) movement (Sheard & Golby, 2006). However, as yet there is little evidence to support claims that such programs can have an effect on psychological constructs (Niall & Dias, 2001 and Sheard & Golby, 2006), and even less of such research is based on five day residential programmes typically attended by young people in the UK (Scrutton, 2014).

PP is a branch of psychology which seeks to use psychological theory, research and interventions to recognize and develop human potential (Seligman & Csikszentmihali, 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 & Hollenhurst, 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, 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 and 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, therefore these are uncontrollable entities which they can't change (Dweck & Sorich, 1999). This creates a meaning system focussed 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 and Dweck & Repucci, 1973).

Conversely a person with a Growth Mindset believes that intelligence, personality and character are malleable, therefore open to change and development under personal volition (Dweck & Leggett, 1988). 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 and Hong, Chiu, Dweck, Lin & Wan, 1999). This means 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 and Doron, Stephan, Boiche & 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 and 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, 2003; Good, Aronson & Inslicht, 2003; Henderson, 1990 and 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, Trzesniewski & Dweck, 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 and 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, Fried & Good, 2002 and Good, Aronson & Inslight, 2003). The most in-depth recent study followed students aged eleven and twelve 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, Trezniewski & Dweck, 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, Trezniewski & Dweck, 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: p137) 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 & Molden, 2005 and Dweck, 2012). 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: p112) 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 changes to 'self-concept' (Ewert, 1982; Hattie *et al.*, 1997 and 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:p21). Research has shown that the effect of OPD courses on self-concept can be greater than those 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 and Sibthorp, Paisley & Gookin, 2007) This has been described as the "black box" (Ewert, 1989). As 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 an 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, Son & Hollenhorst, 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 and Hattie *et al.*, 1997) and 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 and 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 & Gills, 1994; Hayhurst, Hunter, Kafka, & Boyes, 2013; Marsh, Richards & Barnes, 1997 and OBT 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 and OBT Social Impact Report, 2014), while others have shown null effects (Ewert & Yoshino, 2008 and Skehill, 2001), or limited effects based on non-parametric tests (Beightol *et al.*, 2013). 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 on the three week Australian model of OPD (Neill and Dias, 2001).

Many researchers are highlighting the need for systematic, longitudinal research which gathers empirical evidence using randomised controls and larger sample sizes, to support and understand some of the intricacies of program effects in these areas (Hattie *et al.*, 1997; Gillis, Gass & Russell, 2008; Ewert & Sibthorp, 2009; Neill, 2002 and 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 UK. As there is currently no published academic research investigating the impact of explicitly combining a PP 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 Mindsets intervention with an OPD course. This study found that the intervention had a significant impact on young peoples' Mindset, self efficacy and optimism, although the specifics of the intervention were unclear (The Centre for Confidence, 2009). The following research aims to build on this study in a number of ways, including recruiting a higher numbers of participants, post-course data collection and using similarly trained instructors.

The above synthesis of research has outlined the potential benefits to be gained from interweaving an intervention based on Mindset theory within an OPD course.

Therefore it is hypothesised that:

- **Hypothesis 1 (H1):** *The OPD course (control group) will increase students self reported levels of self efficacy and resilience, but will not change their Mindset.*
- **Hypothesis 2 (H2):** *The OPD course with the Mindsets intervention (experimental group) will further increase students self reported levels of self efficacy and resilience (relative to the control group), as well as moving them towards a Growth Mindset.*

## **Methodology**

### Design

This research has been granted ethical approval (UEL, 2014). It 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 as 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 experiment 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, 1963).

It is recognised that the ideal experiment would also have a control group who experienced no changes during the study period. Unfortunately the school that were providing this were unable to take part at the last minute due to unforeseen circumstances. While this was inconvenient, the absence of a pure control group does not render the study invaluable. There are numerous studies publishing data using similar scales to show the stability of such constructs over time by the use of control groups (e.g. Blackwell, Trzesniewski & Dweck, 2007; Neill & Dias, 2001 and Sheard & Golby, 2006), so this is not thought to be a major issue.

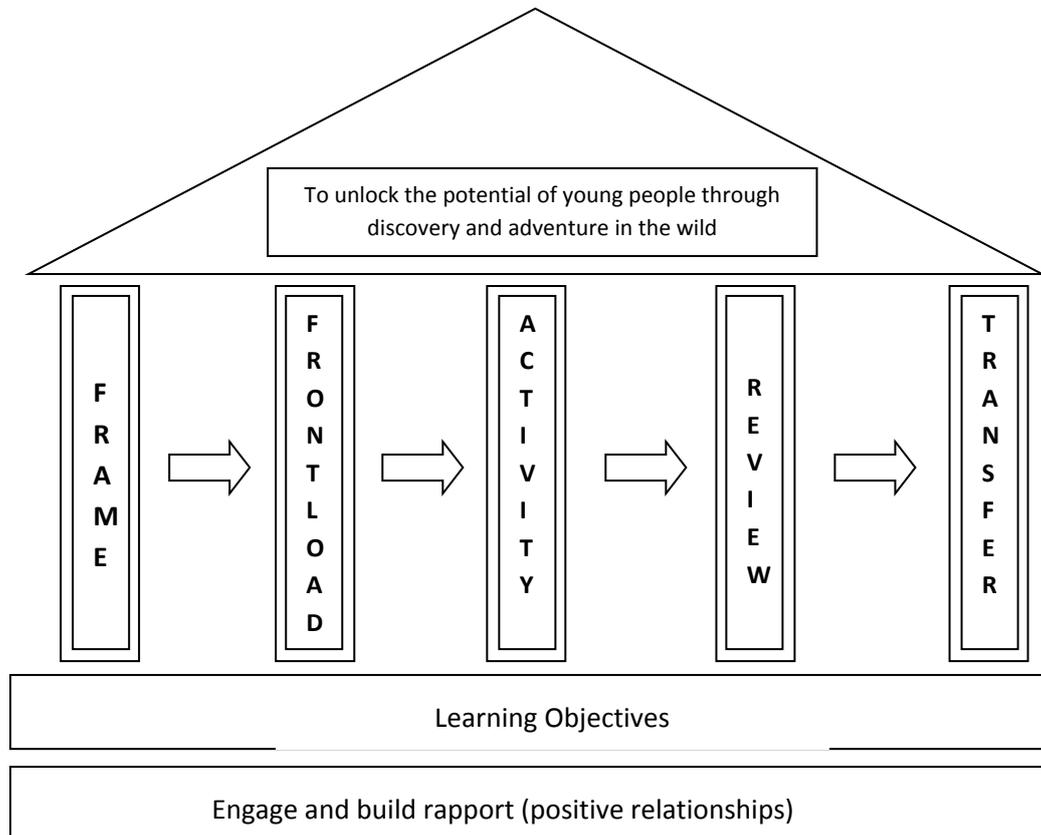
## The OPD Course

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

As 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. As 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 OBT for at least 12 months so had experienced similar training. Their experience in delivering outdoor learning courses varied from 3 to 10 years. However, these factors were the same for the instructors working with both the experiment 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 (Appendix C) and the OBT learning process model was used throughout all of the courses. This is outlined below (OBT, 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. It consisted of four integrated sessions which were spread out throughout the week and delivered using the learning process format above. These can be viewed in Appendix C

A structured approach was taken to ensure a level of continuity for the experimental groups. 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 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, Manion & Morrison, 2007).

## Participants

Three schools from within the UK 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 (n = 103) or control group (n = 93) by the centre administrator, meaning that the students were blind to the experimental condition they were part of. They 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, Manion & Morrison, 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.

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<sup>3</sup> Exact ages of the students are unknown as this information was not supplied.

## 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 (GSE) scale 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 alphas ranging from 0.76 to 0.9, the majority being in the high 0.8's (Schwarzer & Jerusalem, 2014). The Resilience Scale – 14 (RS – 14) was used to measure resilience as 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 and Skehill, 2001). The shorter version was selected to suit this younger population, which has alphas ranging from 0.85 – 0.94 across a range of studies (Wagnild, 2009). The Implicit Self Theories scale 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 alphas ranging from .94 to .98 (Dweck, Chiu & Hong, 1995).

## **Results**

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

**Table 1**

*Mean Scores for Self Efficacy, Resilience and Mindset at Time One*

	<b>Self Efficacy</b>		<b>Resilience</b>		<b>Mindset</b>	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
<b>Control</b>	31.77	3.79	79.24	10.26	10.19	4.35
<b>Experiment</b>	31.63	3.79	76.62	12.54	9.28	4.28

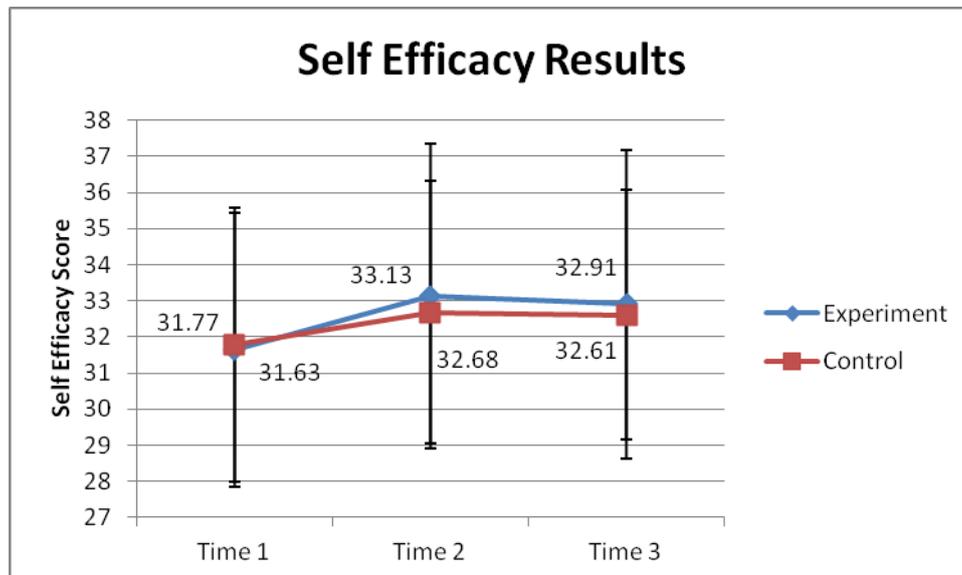
### ***Self Efficacy***

A mixed-factorial 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,  $F(2, 191) = 0.76$ ,  $p = 0.467$ ,  $\eta^2 = 0.008$ . A medium effect size was found (Cohen, 1988).

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 1 below:

Figure 1 – Self Efficacy Results, with Std.Dev bars.



### Resilience

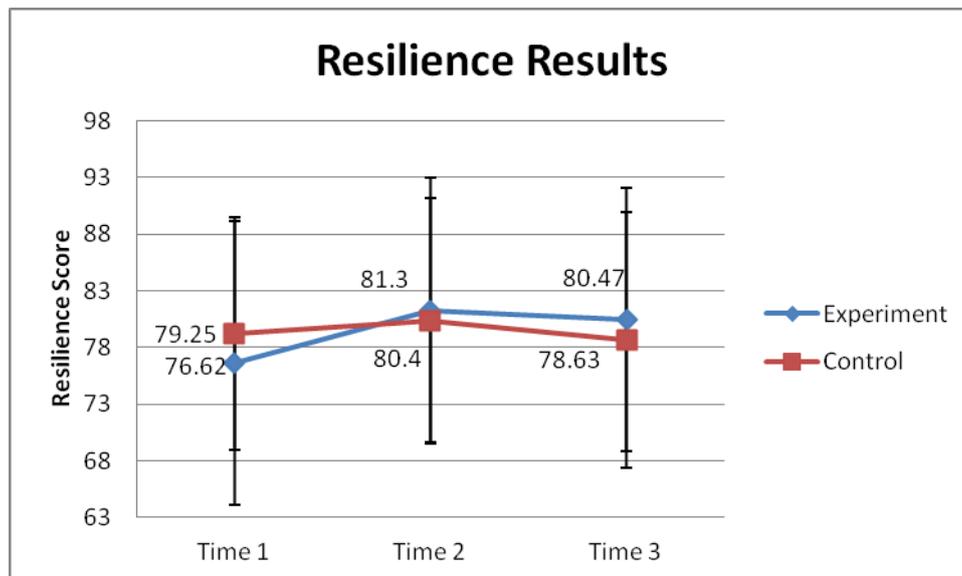
A mixed-factorial ANOVA was conducted with a within-participants factor of time (T1, T2, T3), a between-participants factor of group (experimental, control), and resilience as the dependent variable. There was a main effect for time,  $F(2,191) = 8.67$ ,  $p < 0.001$ ,  $\eta^2 = 0.08$ . There was also 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. A large effect size was found (Cohen, 1988). 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 2 below:

*Figure 2 – Resilience Results, with Std.Dev bars.*



### **Mindset**

A mixed-factorial 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,  $F(2,101) = 15.46, p < 0.001, \eta^2 = 0.24$ . A large effect size was shown (Cohen, 1988) There is a significant linear and quadratic component to this ( $p < 0.001$  for both) showing that students in the intervention group made 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 3 below:

Figure 3 – Mindset Results, with Std.Dev bars.



## **Discussion and Implications for Practice**

For the first time this study provides evidence 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.

At the beginning of the study it was hypothesised that, the control group would increase in self efficacy and resilience, but not change Mindset (H1), and that the experimental group would further increase in self efficacy and resilience, as well as moving towards a Growth Mindset (H2).

The Mindset results support both H1 and H2. 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, increase in grades and higher self esteem (Blackwell, Trzesniewski & Dweck, 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, but not H1. 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 and 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: p2) 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 suggests that structured programming and facilitation is important. Similarly other researchers have highlighted the need for resilience enhancing courses to provide experiences of persevering to overcome challenge in a supportive group, combined with the use of these experiences in discussion and debriefs (Ewert & Yoshino, 2011). It has also been 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.*, 2013).

It may be that it was the focussed 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 learning process used during outdoor programmes is frequently critiqued in the literature (Hattie *et al.*, 1997). Results from this study

support earlier suggestions that this may be an area worthy of further research (Cason & Gills, 1994 and Mackenzie, 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, but not H2. 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 (Hattie *et al.*, 1997; Sheard & Golby, 2006 and Beightol *et al.*, 2012), 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 focussing 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 focussing on Mindset may have inadvertently directed attention away from other important outcomes such as teamwork, communication, or learning about the natural environment. Similarly, as 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 as 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 (OBT, 2014). This may be built upon and impact may be increased for a range of clients by creating structured and focussed 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 focussed 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.

PP 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 programs 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, Son & Hollenhurst, 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. As previously stated, unfortunately the school that were providing the control group were 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, Trzesniewski and Dweck, (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 focussed 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, Son & Hollenhurst, 2014).

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## **Appendix A - Journal Rationale and Submission Guidelines**

### **1) Title of work:**

'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?'

### **2) Title of Journal:**

Journal of Adventure Education and Outdoor Learning

### **3) Editor:**

Barbara Humberstone

### **4) Rationale**

#### **a) Aims and scope of chosen journal**

I have selected to submit my piece of work to this journal based on the aims and scope, for the following reasons:

- I am keen to reach an audience from the outdoor personal development sector.
- It is the official journal for the Institute of Outdoor Learning, the main body for outdoor practitioners in the UK.
- There is current literature and research within the outdoor field suggesting that outdoor learning may benefit from greater integration with positive psychology.
- It provides a central point for publication of works relating to advancing knowledge in disciplines which use the outdoors as a medium for development, as well as recreation.
- It has wide international readership.
- It especially welcomes papers from different theoretical perspectives.
- It has clear guidelines and a suitable word limit of 6000 words (not including references).

#### **b) Examples of similar pieces of work:**

The journal is published 3 times a year and often includes impact studies, more recently those relating to development of positive psychological constructs, for example:

- Neill, J. T., & Dias, K. L. (2001). Adventure education and resilience: The double-edged sword. *Journal of Adventure Education and Outdoor Learning*, 2(1), 35–42.
- Ewert, A., & Yoshino, A. (2011). The influence of short-term adventure-based experiences on levels of resilience. *Journal of Adventure Education and Outdoor Learning*, 11(1), 35-50.
- Scrutton, R. A. (2014). Outdoor adventure education for children in Scotland: quantifying the benefits. *Journal of Adventure Education & Outdoor Learning*, (ahead-of-print), 1-15

**c) Alternative choice(s):**

- **Journal of Experiential Education**

Reasons for not submitting to this journal include:

- Less well known in the UK.
- A lower word limit of 3000 – 6000 words including references.

Submission to this journal will be considered for future work.

## **Submission Guidelines for JAEOL**

The purpose of this international journal is to promote dialogue, research, thinking, understanding, teaching and practice in the field of adventure education and outdoor learning.

*Journal of Adventure Education and Outdoor Learning* considers all manuscripts on the strict condition that

- the manuscript is your own original work, and does not duplicate any other previously published work, including your own previously published work.
- the manuscript is not currently under consideration or peer review or accepted for publication or in press or published elsewhere.
- the manuscript contains nothing that is abusive, defamatory, libellous, obscene, fraudulent, or illegal.

### **Manuscript preparation**

#### **1. General guidelines**

- *JAEOL* will consider original papers written in English, which have not been published already nor submitted simultaneously in another Journal. The Journal welcomes papers that report on research with a wide international interest.
- Any consistent spelling and punctuation styles may be used. Follow the APA manual for punctuation. Please use single quotation marks, except where 'a quotation is "within" a quotation'. Long quotations of 40 words or more should be indented without quotation marks. Always state authors, date and page number.
- A typical manuscript generally ranges from 5000 to 6000 words in length, excluding tables, references, captions, footnotes and endnotes. Manuscripts that greatly exceed this will be critically reviewed with respect to length. Authors should include a word count with their manuscript.
- Manuscripts should be compiled in the following order: title page (including Acknowledgements as well as Funding and grant-awarding bodies); abstract; keywords; main text; references; appendices (as appropriate); table(s) with caption(s) (on individual pages); figure caption(s) (as a list).
- [Abstracts](#) of 150 words are required for all manuscripts submitted. Abstracts should also include the title of the article. No references should appear in the abstract.
- Each manuscript should have 3 to 5 [keywords](#) .

- Search engine optimization (SEO) is a means of making your article more visible to anyone who might be looking for it. Please consult our guidance [here](#) .
- Section headings should be concise.
- All authors of a manuscript should include their full names, affiliations, postal addresses, telephone numbers and email addresses on the cover page of the manuscript. One author should be identified as the corresponding author. Please give the affiliation where the research was conducted. If any of the named co-authors moves affiliation during the peer review process, the new affiliation can be given as a footnote. Please note that no changes to affiliation can be made after the manuscript is accepted. Please note that the email address of the corresponding author will normally be displayed in the article PDF (depending on the journal style) and the online article.
- All persons who have a reasonable claim to authorship must be named in the manuscript as co-authors; the corresponding author must be authorized by all co-authors to act as an agent on their behalf in all matters pertaining to publication of the manuscript, and the order of names should be agreed by all authors.
- Please supply a short biographical note for each author.
- Please supply all details required by any funding and grant-awarding bodies as an acknowledgement in a separate Funding paragraph as follows:
  - *For single agency grants:* "This work was supported by the [Funding Agency] under Grant [number xxxx]."
  - *For multiple agency grants:* "This work was supported by the [Funding Agency 1] under Grant [number xxxx]; [Funding Agency 2] under Grant [number xxxx]; and [Funding Agency 3] under Grant [number xxxx]."
- Authors must also incorporate a [Disclosure Statement](#) which will acknowledge any financial interest or benefit they have arising from the direct applications of their research.
- For all manuscripts non-discriminatory language is mandatory. Sexist or racist terms must not be used. Ensure that writing does not emphasise bias. Beware of treating groups as oddities, exceptional cases and of stereotyping.
- Authors must adhere to [SI units](#) . Units are not italicised.
- When using a word which is or is asserted to be a proprietary term or trade mark, authors must use the symbol ® or TM.
- Authors must not embed [equations](#) or image files within their manuscript.
- **Headings:** Where necessary, the structure of the article should be made clear by sub-headings. The author should indicate in the margin against each sub-heading its rank in the structure.
- **Footnotes** to the text should be kept to an absolute minimum. They should be typed on a separate sheet at the end of the article, numbered 1, 2 etc. and the text reference indicated by the corresponding superscript number.

### 3. Figures

- Please provide the highest quality figure format possible. Please be sure that all imported scanned material is scanned at the appropriate resolution: 1200 dpi for line art, 600 dpi for grayscale and 300 dpi for colour.
- Figures must be saved separate to text. Please do not embed figures in the manuscript file.
- Files should be saved as one of the following formats: TIFF (tagged image file format), PostScript or EPS (encapsulated PostScript), and should contain all the necessary font information and the source file of the application (e.g. CorelDraw/Mac, CorelDraw/PC).

- All figures must be numbered in the order in which they appear in the manuscript (e.g. Figure 1, Figure 2). In multi-part figures, each part should be labelled (e.g. Figure 1(a), Figure 1(b)).
- Figure captions must be saved separately, as part of the file containing the complete text of the manuscript, and numbered correspondingly.
- The filename for a graphic should be descriptive of the graphic, e.g. Figure1, Figure2a.

**Tables:** should be numbered with Arabic numerals and should carry a descriptive title. Vertical rules will be removed.

## Appendix B - Student Questionnaire

*Please answer the following questions by circling your response. There are no right or wrong answers, just circle the box which best represents how you feel about the statement. Your answers will be confidential and will only be seen by the researchers.*

**I can always manage to solve difficult problems if I try hard enough.**

1 = Not at all true      2 = Hardly true      3 = Moderately true      4 = Exactly true

**If someone opposes me, I can find the means and ways to get what I want.**

1 = Not at all true      2 = Hardly true      3 = Moderately true      4 = Exactly true

**It is easy for me to stick to my aims and accomplish my goals.**

1 = Not at all true      2 = Hardly true      3 = Moderately true      4 = Exactly true

**I am confident that I could deal efficiently with unexpected events.**

1 = Not at all true      2 = Hardly true      3 = Moderately true      4 = Exactly true

**Thanks to my resourcefulness, I know how to handle unforeseen situations.**

1 = Not at all true      2 = Hardly true      3 = Moderately true      4 = Exactly true

**I can solve most problems if I invest the necessary effort.**

1 = Not at all true      2 = Hardly true      3 = Moderately true      4 = Exactly true

**I can remain calm when facing difficulties because I can rely on my coping abilities.**

1 = Not at all true      2 = Hardly true      3 = Moderately true      4 = Exactly true

**When I am confronted with a problem, I can usually find several solutions.**

1 = Not at all true      2 = Hardly true      3 = Moderately true      4 = Exactly true

**If I am in trouble, I can usually think of a solution.**

1 = Not at all true      2 = Hardly true      3 = Moderately true      4 = Exactly true

**I can usually handle whatever comes my way.**

1 = Not at all true      2 = Hardly true      3 = Moderately true      4 = Exactly true

*Please read the following statements. Below each you will find seven numbers, ranging from "1" (Strongly Disagree) on the left to "7" (Strongly Agree) on the right. Circle the number which best indicates your feelings about that statement. For example, if you strongly disagree with a statement, circle "1". If you are neutral, circle "4", and if you strongly agree, circle "7", etc.*

1	2	3	4	5	6	7
STRONGLY DISAGREE			NEUTRAL			STRONGLY AGREE

**I usually manage one way or another.**

1	2	3	4	5	6	7
---	---	---	---	---	---	---

**I feel proud that I have accomplished things in life.**

1	2	3	4	5	6	7
---	---	---	---	---	---	---

**I usually take things in my stride.**

1	2	3	4	5	6	7
---	---	---	---	---	---	---

**I am friends with myself.**

1	2	3	4	5	6	7
---	---	---	---	---	---	---

**I feel that I can handle many things at a time.**

1	2	3	4	5	6	7
---	---	---	---	---	---	---

**I am determined.**

1	2	3	4	5	6	7
---	---	---	---	---	---	---

**I can get through difficult times because I've experienced difficulty before.**

1	2	3	4	5	6	7
---	---	---	---	---	---	---

**I have self-discipline.**

1	2	3	4	5	6	7
---	---	---	---	---	---	---

**I keep interested in things.**

1            2            3            4            5            6            7

**I can usually find something to laugh about.**

1            2            3            4            5            6            7

**My belief in myself gets me through hard times.**

1            2            3            4            5            6            7

**In an emergency, I'm someone people can generally rely on.**

1            2            3            4            5            6            7

**My life has meaning.**

1            2            3            4            5            6            7

**When I'm in a difficult situation, I can usually find my way out of it.**

1            2            3            4            5            6            7

*Please indicate the extent to which you agree or disagree with the following statements by circling your answer.*

1 = Strongly Disagree

2= Disagree

3=Mostly Disagree

4=Mostly Agree

5= Agree

6= Strongly Agree

**You have a certain amount of intelligence and you really can't do much to change it.**

1            2            3            4            5            6

**Your intelligence is something about you that you can't change very much.**

1            2            3            4            5            6

**You can learn new things but you can't really change your basic intelligence.**

1            2            3            4            5            6

**A person's moral character is something very basic about them and it can't be**

**changed very much.**

1                      2                      3                      4                      5                      6

**Whether a person is responsible and sincere or not is deeply ingrained in their personality. It cannot be changed very much.**

1                      2                      3                      4                      5                      6

**There is not much that can be done to change a person's moral traits (e.g. honesty).**

1                      2                      3                      4                      5                      6

**The kind of person someone is, is something very basic about them and it can't be changed very much.**

1                      2                      3                      4                      5                      6

**People can do things differently, but the important parts of who they are can't really be changed.**

1                      2                      3                      4                      5                      6

**Everyone is a certain kind of person and there is not much that can be done to really change that.**

1                      2                      3                      4                      5                      6

*Thank you very much for your time.*

## **Appendix C - Project Outline for Instructors**

The project will investigate the impact of using Mindsets Theory within an outdoor learning context. You and two others will be delivering the Mindsets course. Three other group instructors will deliver a standard Adventure and Challenge course, but will not use any mindset theory, ideas or materials on their course.

Measurements of **resilience, self-efficacy and mindset** will be taken using validated psychology scales at three time points. These are areas thought to be influenced by a mindset intervention.

**Time 1** – At school, one week before they arrive at Outward Bound

**Time 2** – The final day of the course. You will facilitate these being filled in as the last thing they do before leaving.

**Time 3** – At school, one month after the course.

### **Your Role**

You will deliver three mindsets sessions during your course (indoors or outdoors). These sessions should also be referred to throughout the activities, as you would normally with any learning. These sessions **must happen**, however you are free to cover other learning to meet the outcomes of the A and C (JMA) course as appropriate for your group.

**Session One - This will take place on day one of the course.**

**THEORY: This session is based on pictorial prompts developed by the Centre for Confidence and Well-Being. They are intended to promote discussion regarding fixed and growth beliefs.**

Students will be split into three groups. Each group will be given a cartoon mindset picture to discuss. They will share what they think it's about and how that relates to them and their course.

Instructor should stress that there are two ways of thinking, and introduce the course as an opportunity to learn new things and develop themselves.

Students should be introduced to their programme and will fill out the first two questions on a shield divided into four:

- Something you will have to work hard at this week? (Discuss effort, pushing self)
- Something you will find easy this week? (Discuss as an area for supporting others)

The other two questions will be filled in at an appropriate point during the week, and will review the above questions.

**Session Two – This will take place on Tuesday**

**THEORY: This session is based on Dweck's (1988) model. It gets the students to consider the implications of fixed and growth beliefs as uncovered in Dweck's research e.g. beliefs – cognition – behaviour – outcome.**

Students will be introduced to The Mindset Cycle and the idea that the beliefs we have impact on how we feel about things, which in turn affects how we behave and the outcomes we experience.

**Session Three - This will take place on Wednesday before you go on expedition.**

**THEORY: This session explores Dweck's (2000) two brain model, looking at the effects of each mindset in more detail, in the specific context of the expedition. It is also based on the finding by Burnette et al., (2012), that development of mastery**

**strategies are one of the key predictors of success. Young people will highlight what strategies they may use to help them in the challenge.**

Students will look at the effects of the two mindsets in greater detail using the two brain model (Dweck, 2000). Students will be asked to consider the first three elements of the model (“embracing challenges”, “persist in the face of setbacks” and “see effort as the path to mastery”) in relation to their expedition. They will brainstorm what the team will be saying and doing in a fixed versus a growth mindset. They will also highlight what strategies the team could use when they find things difficult. This will be returned to after the expedition to look at real examples of when people showed each mindset, and what strategies were most successful. They will also begin to consider how these strategies could be generalised to future situations.

**Session Four – This will take place towards the end of the course (Thursday/Friday).**

Students will discuss and fill out the end of course transfer action plan. This is directly related to the two brain model which they will have learnt about on the course and will consider how they can take their learning forward into new situations, both academic and non-academic.

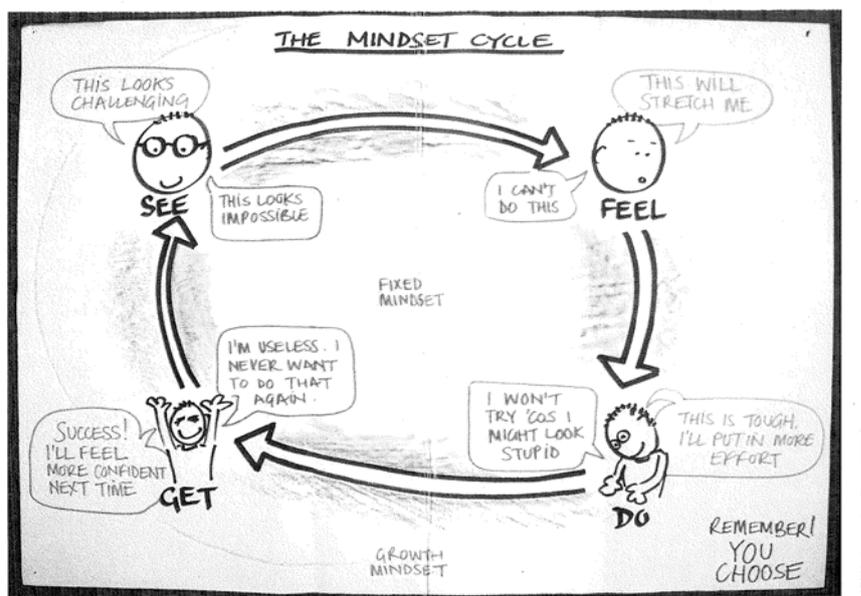
**Resources will be provided at the course briefing (e.g. cartoon laminates, mindset cycle and transfer sheet for students.)**

### Intervention Models and Resources

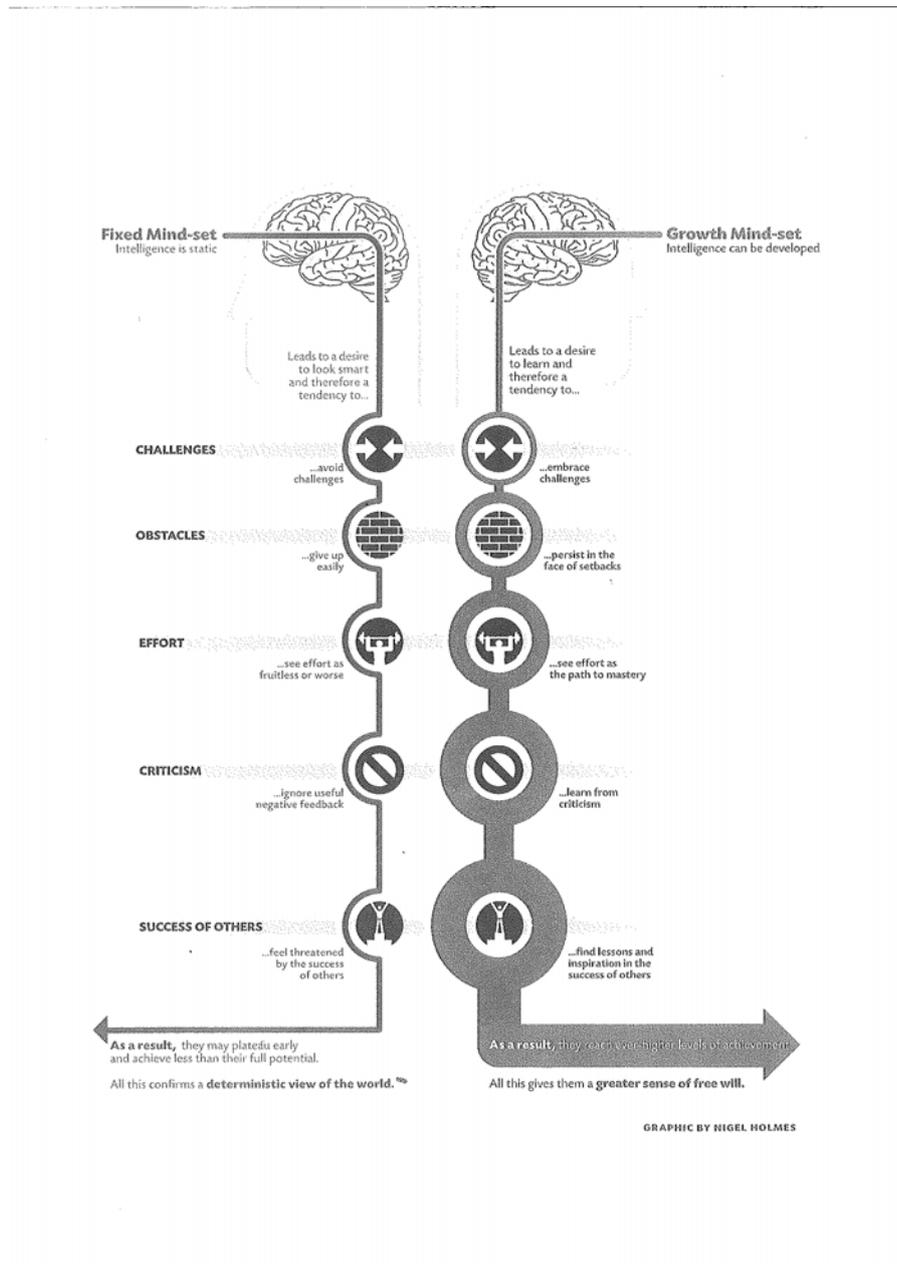
#### Cartoon pictures example for Session One:



#### Mindset Cycle used in Session Two:



Two Brain model used in Session Three:



**Transfer of Learning Action Plan Questions for Session Four:**

# Grow your Mindset

Choose a challenge you will face in the next 3 months?

What setbacks/difficulties might you encounter with this challenge?

What strategies/efforts could you use to overcome these?

Whose advice/feedback/support will be useful to you?

Think of someone you admire who is/has been successful at the challenge you will face?

### **Research Project Outline for Visiting Staff**

The research will investigate the impact of using Mindsets Theory within an outdoor learning context. You may be aware of Mindsets, but here is a brief summary in case you are not.

Mindset in this context relates to our beliefs regarding our intelligence and character. A person with a fixed mindset believes that everything they have within them is fixed from birth, therefore if they aren't good at something they never will be. This leads to a desire to prove themselves only in areas they can easily achieve success, a negative view of effort and avoidance of challenge.

Conversely a person with a growth mindset believes that they can grow, develop and change in all areas of their life. Effort is seen as a necessary ingredient for success, failure is viewed as an opportunity to learn and they are keen to challenge themselves. This project will consider the impact of *explicitly* teaching the growth mindset in an outdoor context.

Three of your groups will experience an outward bound course with a Mindsets theme. This will include four sessions designed to teach students about the two mindsets and encourage them towards a growth mindset.

If you have any questions, concerns or feedback regarding the project please come and speak to me throughout the week.

Thank you very much for your help.

**Kate O'Brien**  
Senior Instructor

The Outward Bound Trust  
Watermillock, Penrith, CA11 0JL  
Tel: 01768 485001

[www.outwardbound.org.uk](http://www.outwardbound.org.uk)

## **Appendix D – Consent Form and Information Sheet**

Dear Parent/Guardian,

### **UNIVERSITY OF EAST LONDON**

School of Psychology

Stratford Campus

Water Lane

London E15 4LZ

### **The Principal Investigator(s)**

Name: Kate O'Brien

Email: [katherine.obrien@outwardbound.org.uk](mailto:katherine.obrien@outwardbound.org.uk)

Phone: +447765221373

### **Consent to Participate in a Research Study**

The purpose of this letter is to provide you with the information that you need to consent for your child to participate in a research study. The study is being conducted as part of my Applied Positive Psychology Masters at the University of East London, in conjunction with The Outward Bound Trust where I am employed.

### **Project Description**

The research aims to investigate the impact of incorporating mindset theory into an outdoor course. Mindsets are our beliefs regarding whether or not intelligence, personality and character can be developed over time. Research shows that developing a growth mindset, which is the belief that we have the potential to develop, has many benefits including increased resilience, motivation to learn and improved academic grades throughout a school year. Half the students will experience a standard Outward Bound course. The other half will do this course, but will also learn more about the two different mindsets and be encouraged towards a growth mindset. This intervention will involve 5 x 15 minute sessions which will include group discussions, peer feedback and self reflection particularly focusing on attitudes to challenge, application of effort and response to setbacks. This will be interwoven within the Outward Bound programme and will not affect any time spent taking part in activities. It is expected that the intervention will enhance the young people's personal development. Students in the control group (i.e., who only do the standard Outward Bound course, and who did not undertake the mindset sessions) will be offered the opportunity to participate in a mindsets workshop back at school at a later date. Participants will be asked to fill out a questionnaire including the RS-14 resilience scale (Wagnild and Young, 1993), the general self efficacy scale (Schwarzer and Jerusalem, 1983) and a mindsets scale (Dweck, Chui and Hong, 1995). These will be administered at three time points during the study. This will take around 15 minutes. Time one will be one week

before their Outward Bound course, time two will be directly after their Outward Bound course and time three will be one month after their course.

Participant confidentiality and anonymity will be maintained by allocating each student a code for questionnaire identification. All information will be stored in a locked filing cabinet. After the study data will be kept for up to one year in case of publication. The researcher will be the only person with access to the data.

The study will be carried out both in school and at the Outward Bound Trust's Howtown Centre.

Students will be entered into a prize draw to win an Outward Bound hooded jumper.

You are not obliged to consent to your child taking part in this study and should not feel coerced. You are free to withdraw them at any time. Should you choose to withdraw your child from the study you may do so without disadvantage to yourself and without any obligation to give a reason. In the event of withdrawal, data for your child will not be included in the study.

Please feel free to ask me any questions. If you are happy to continue you will be asked to sign a consent form prior to your child's participation. Please retain this invitation letter for reference. If you have any questions or concerns about how the study has been conducted, please contact the study's supervisor Dr Tim Lomas, School of Psychology, University of East London, Water Lane, London E15 4LZ. Email address: [t.lomas@uel.ac.uk](mailto:t.lomas@uel.ac.uk)]

**or**

Chair of the School of Psychology Research Ethics Sub-committee: Dr. Mark Finn, School of Psychology, University of East London, Water Lane, London E15 4LZ.

(Tel: 020 8223 4493. Email: [m.finn@uel.ac.uk](mailto:m.finn@uel.ac.uk))

Thank you in anticipation.

**UNIVERSITY OF EAST LONDON**

**Consent to participate in a research study**

An investigation into the impact of teaching mindsets theory within an outdoor personal development course.

I have the read the information sheet relating to the above research study and have been given a copy to keep. The nature and purposes of the research have been explained to me, and I have had the opportunity to discuss the details and ask questions about this information. I understand what is being proposed.

I understand that my child’s involvement in this study, and particular data from this research, will remain strictly confidential. Only the researcher(s) involved in the study will have access to identifying data. It has been explained to me what will happen once the research study has been completed.

I hereby freely and fully consent for my child to participate in the study which has been fully explained to me. Having given this consent I understand that I have the right to withdraw my child from the study at any time without disadvantage to myself and without being obliged to give any reason. In the event of this, no data will be used.

Participant’s Name (BLOCK CAPITALS)

.....

Participant’s Signature

.....

Parent’s Name (BLOCK CAPITALS)

.....

Parent/Guardian Signature

.....

Researcher’s Name (BLOCK CAPITALS)

.....

Researcher’s Signature

.....

Date: .....

## **Appendix E – Debrief Letter**

### **UNIVERSITY OF EAST LONDON**

School of Psychology

Stratford Campus

Water Lane

London E15 4LZ

#### **The Principal Investigator(s)**

Name: Kate O'Brien

Email: [katherine.obrien@outwardbound.org.uk](mailto:katherine.obrien@outwardbound.org.uk)

Phone: +447765221373

#### **Thank-You**

Thank-you very much for participating in this research study. Your information has been very useful to gain further insight into the impact of outdoor personal development courses, and in particular the impact of using mindset theory within them.

#### **Project Information**

The research aims to investigate the impact of incorporating mindset theory into an outdoor course. Mindsets are our beliefs regarding whether or not intelligence, personality and character can be developed over time. Research shows that developing a growth mindset, which is the belief that we have the potential to develop, has many benefits including increased resilience, motivation to learn and improved academic grades throughout a school year. Discovering the effectiveness of teaching this within an outdoor personal development context has implications for increasing our impact on future Outward Bound courses, benefitting may other young people in the UK.

### **What will happen to your data?**

Your data will be used, combined with that of all the participants, to give an overview of the impact of the course on resilience, self efficacy and mindset. Various statistical tests will be carried out in order to write the final report. This report will be made available to you within the school. Participant confidentiality and anonymity will be maintained in any reports which are written. All information will be stored in a locked filing cabinet. After the study data will be kept for up to one year in case of publication. The researcher will be the only person with access to the data.

### **Contact Details**

If you are in any way troubled by taking part in the research please get in contact with your school counsellor. Contact can initially be made by asking your form tutor for information.

If you have any questions or concerns about how the study has been conducted, please contact the study's supervisor Dr Tim Lomas, School of Psychology, University of East London, Water Lane, London E15 4LZ. Email address: [t.lomas@uel.ac.uk](mailto:t.lomas@uel.ac.uk)]

**or**

Chair of the School of Psychology Research Ethics Sub-committee: Dr. Mark Finn, School of Psychology, University of East London, Water Lane, London E15 4LZ.

(Tel: 020 8223 4493. Email: [m.finn@uel.ac.uk](mailto:m.finn@uel.ac.uk))

Thank you very much for your time.

Yours sincerely,

Kate O'Brien

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Figure 2: Resilience Results, with Std.Dev Bars 21

Figure 3: Mindset Results, with Std.Dev Bars 22