

Outdoor education an actual reality experience.

Matt Barker, Auckland University of Technology, New Zealand

Abstract

Are 21st century students are being brought up in a world where fantasy and virtual reality predominate and personal responsibility is declining? Is their diet one of false realities, insulated from meaningful experiences by layers of cotton wool? Widespread risk aversion is leading us to a society of risk illiterates where outdoor educational experiences, with real consequences for their actions, real risks, and where reality is actual, are too far from the norm, out of bounds of perceived acceptable and reasonable risk and behaviour. Traditional Outdoor Education with these experiential novices invokes stress responses that make the experience one where survival and endurance are the only things that remain where self-reflection and learning used to reside. Will Outdoor Education decline towards 'virtual' experiences where realities and consequences are further diluted and shielded? This paper examines research into self-efficacy augmentation in providing positive learning and teaching environments through outdoor experiences.

21st century students are being brought up in a world where fantasy and virtual reality predominate and personal responsibility is declining.

Marlborough college students are being deprived of a full and holistic education by risk averse teachers, principals and boards of trustees (New Zealand Herald 28/11/2003), we have to ask if it is the risks of the activity that have the adults worried or the risks of what will happen to them if it goes awry; they are unwilling to shoulder the risk of litigation; the risk of having to put their hand up and say it was my responsibility; to state I got it wrong; my supervision or skills were not, in hindsight, up to the job; I hadn't foreseen that scenario unfolding. Their boards of trustees as well as the public at large are becoming risk-illiterate, they have become so out of touch with real risks that they have a false understanding of the relative risks of outdoor education compared with life in general (New Zealand Herald 07/01/2003). Outdoor education is declining because the powers that control students exposure to it are concentrating on the negatives and are too frightened of the possible consequences instead of looking for the possible benefits and weighing these in the pro/con balance. Teachers and their boards of trustees are unwilling to take personal responsibility; what role model does this foster in our students who are being subjected to risk averse and personal responsibility shirking behaviours? These individuals should be setting an example by firmly shouldering the weighty rucksack of personal responsibility. In a recent Sunday Star Times (21/03/04) article the opening line says it all, "Anxious principles are banning school camps". School camps are becoming a farce with kayaking at a local swimming pool, rock climbing at an indoor wall, pitching your tent in the "wild environs" of the footy field and sending out for a fish and chip supper rather than conjuring up (to the children at any rate) gourmet meals, on personal stoves, all in the name of safety.

Young people are now getting their kicks more and more from sedentary activities. Many of these are virtual reality of simulations, the better the simulations become the more they absorb the person into an alternative world, adrenalin rushes, increased heart beat, sweaty palms and all. However these “games” have no consequences, no effects in the real world, no link to reality, no useful by-products, but yet they invoke responses as if they were real, as if there were consequences.

This pushes the participant further from the skills of coping when they meet real situations that do have personal responsibility and consequences, where they do have to be accountable for their own actions.

There is a desperate need to teach children to develop responsible attitudes towards risk and foster decision making skills rather than avoiding the subject, or allowing them to teach themselves to take empty risks, risks with no consequence or responsibility, if we are going to adequately prepare them for positive and fully functional lives.

There is no doubt about it life is a risky business. From the moment we are conceived everything can seem intent on recycling us into our composite elements, to turn us back to the stardust from whence we came. Every day we are at risk of injury from tiny unseen bacteria and viruses trying to meet their own needs. There are risks involved in what we eat and drink, in going to work, in being at work and at play. We are all surrounded by risk. The only thing actively trying to keep you alive and in one piece is yourself (with a little help from medical staff on occasion). A recent article in the New Zealand Herald (07/01/2003) based on the research by Grant Davidson would have it that life in general is just as risky as doing outdoor education. So do we swap the day to day risks, (three people drown each week and more than one person dies on the roads per day on average in New Zealand) for the inherent and some would say unnecessary risks that are involved, and are part and parcel of, outdoor education? We swap one for the other, like for like. Or do we? Surely the outdoor educator does not expose their charges to risk carelessly, lightly, or selfishly, but reverently, responsibly and after serious thought; (apologies to the marriage vows) with some great purpose in mind and because of the great good that will come of it. We are involved with and use outdoor education because we believe that through using the outdoors as a tool or vehicle we can achieve great, meaningful and lasting learning about ourselves, our relationship to others, and our interaction with the world around us. It is because of the degree of impact that some risks may be justified, but we still must understand that we have to be sure with ourselves that the risks taken are necessary for that learning to happen. Only educators who have not weighed up the pros and cons, or not managed the situation properly, enter into unnecessary risks.

Exposure to real risk can teach our charges so much if it is handled in an appropriate way and used as a tool to enable meaningful learning to take place. The activity is only a means to an end, in our case an educational one, but is this risk really the best way to achieve this learning? In many cases yes but in some cases no. We must strive to achieve the maximum learning from every situation we take our students to, and not to lose the great potential for learning that these situations can offer the skilled outdoor educator. The

question, “Does the end justify the means?” should always be in the forefront of our thinking. Are you really exposing them to greater risk than they would meet in everyday life? We all take on risk everyday in all sorts of ways for our own means, from a simple kiss to driving to work. We are never immune to risk, it is all around us every day. Let us at least use that risk for the greater good. In years to come will society wonder if our efforts would have been better spent fostering good judgement, common sense and the management of risk rather than trying to make the world a safer place through risk avoidance. Wrapping our children in cotton wool will not serve them well. It will not prepare them for the real world where real dangers exist and where real decisions have to be made that cannot be avoided. All outdoor educators must remember that with great power comes great responsibility.

Children’s diet today seems to be full of false realities, insulated from meaningful experiences by layers of cotton wool. Parents, un-willing to let their children have the experiences that they had put society in danger of not only becoming risk averse but also risk naïve this reduces the next generation’s ability to become risk resilient. Many in society today have a false view of risk, where the risk is built to greater proportions than it really is. Schools are unwilling to take part in seemingly high-risk activities even when research has shown that outdoor education is no more risky than every day life (New Zealand Herald 07/01/2003). Outdoor education has so much more potential benefits than an everyday 21st century life.

With the rise in disposable incomes and the increases in leisure time made possible by labour saving devices since the last war, we should have seen an increase in meaningful outdoor experiences by our children, however this has not happened. Children have been given the options of sedentary virtual reality pursuits as children have wanted them and parents have been able to purchase them with their greater spending power. Parents have also taken parenting up as a career and instead of letting their own children explore and experience life at the sharp end, as they themselves did, instead they have mollycoddled, cosseted, metaphorically as well as literally held their hands every step of the way, resulting in depriving them of the explorations, experiences, problem solving opportunities and opportunities to weigh up the risk/reward/consequence balance for their actions in positions where the children have to personally deal with the consequences. This leads to them being socially inept, not being experienced enough to deal with adult life, not having adequate perceptions of self-efficacy for dealing with the situations born through a lack of experience. Parenting runs the risk of becoming too invasive on the experiential education of our next generation of society. Have the streets and bush really become more dangerous places? Maybe it is just in our minds that they have. Parents have more time and money to devote to and dote upon their children but instead of helping this takes away the child’s choices, their experiences, their options, and their future! Real outdoor education that builds the participants self-efficacy for dealing with life’s rich tapestry of events and challenges is more important now for our society’s future and for personal well being, than it has ever been.

Widespread risk aversion is leading us to a society of risk illiterates and people ill equipped to cope with the stressors in life and to a position where outdoor educational

experiences, with real consequences for their actions, real risks, and where reality is actual, are too far from the norm, out of bounds of perceived acceptable and reasonable risk and behaviour. Traditional Outdoor Education with these experiential novices invokes stress responses that make the experience one where survival and endurance are the only things that remain where self-reflection and learning used to reside.

Will Outdoor Education continue to decline towards 'virtual' experiences where realities and consequences are further diluted and shielded? We have seen a movement away from extended meaningful journeys and a movement towards controllable, unnatural, contrived experiences. The growth in high ropes courses and climbing gyms (5 high-ropes and 4 climbing gyms in the Auckland area alone in the last few years) and their use for so called outdoor education experiences while outdoor education in general and certainly in schools (New Zealand Herald 31/01/2001) is declining, is indicative of this shift, it could be argued that you are taking the 'outdoor' out of outdoor education by using these manufactured experiences. It may be possible to easily create situations that have pretty certain educational outcomes using such manufactured environments and as such they have their place but they cannot replace the true outdoor experience. The vagaries of the outdoors, the weather, the natural setting, the unknown elements, interaction with the environment is the "jus", the "X factor", that makes outdoor education one of the most powerful and transferable teaching vehicles. The lack of non-slip matting and the unmarked handholds all add to the sense of personal responsibility. If a climbing hold breaks off on an outside wild crag who can we blame for the consequences but ourselves, if one breaks at a gym we can devolve the blame to the proprietor, but which is the greater teacher? True outdoor education experiences are strongly based around personal responsibility, if your gear gets wet you have to live with the consequences, if you burn your dinner you can't simply buy another one, if you let your map blow away, if you capsize on this rapid and lose your shoes... no one else can carry your pack, no one else can shoulder your responsibility, you have to shoulder it yourself.

Why is it that the high rope elements are so attractive to students at an outdoor education centre when we know that they may get a more holistic education via an overnight tramp through the wild bush? Is it that they have been brought up on a diet of big thrill, no consequence, no personal responsibility experiences and they will naturally be drawn to what they know, what they have self-efficacy for, rather than the potentially more rewarding experiences? In a world such as this the actual reality of outdoor education is more important now than it has ever been.

This brings us to a position where schools are unwilling to teach children the cognitive skills of real risk management, problem solving and taking personal responsibility for ones actions. Parents are unwilling to allow children to have meaningful experiences on their own with out supervision or the ability to defer the responsibility of their actions or inactions onto others; and where Computer simulation games give children the rush and adrenalin of risk taking with no responsibility or consequence. They learn to take risks but do not learn how to deal with them. Outdoor education has a vital role in redressing this balance. We must ensure future outdoor education experiences for our next generation develop and augment self-efficacy for problem solving; decision-making and most

importantly risk resilience. To make outdoor education work most effectively with our present young people we must develop the level of self-efficacy for the skills that have been shirked, avoided and allowed to atrophy. We must augment the perceptions of self-efficacy through structured and carefully exposed outdoor education before we redress the balance and look to not letting the ineptness of today effect tomorrow's outdoor experiences.

Research into self-efficacy augmentation is a step we can take to enable positive learning and teaching environments to be created through outdoor experiences. We must then use self-efficacy augmentation techniques with our present charges to get the most positive benefits from our 'real' outdoor education experiences.

Self-efficacy beliefs (Bandura 1977) are the perceptions of personal competence for a given task in a given situation. These feelings or perceptions are influenced by feedback from four main sources, vicarious experience, performance accomplishment, verbal persuasion, and physiological state. Maddux (1995) added to this list of sources of self-efficacy beliefs with imaginal [sic] experiences and Schunk (1995) added emotional state, these further refine Bandura's notion of physiological state and vicarious experience respectively. The strength of these self-efficacy beliefs have been shown by many authors to have a great effect on the ability of people to carry out various stressful and phobia related tasks (Lloyd Williams, 1995; Maddux, 1991). Self-efficacy augmentation has also been shown to increase academic achievement (Manstead & van Eekelen, 1998)

If exposed to risks, their personal management and resolution, in small regular sessions over a lengthy period of time the learner goes through a process of habituation (Ferrero 1998) or systemic desensitisation (Ewert 1989) whereby they become gradually used to the anxiety inducing factors and develop strategies to cope and ameliorate their effects. Through prolonged exposure, they become less affected by these anxiety inducing factors and can slowly become efficacious at their own pace, as they are able to control the effects of the environmental stimuli on them and their psyche. However without exposure to risk and anxiety inducing stimuli and their management, they do not develop this, with the resultant effect of high anxiety and low perceptions of self-efficacy for tasks and situations, leading to compromised rates of learning. The outdoor educator must therefore monitor and manage the learner's exposure and responses to a far greater degree. It is proposed here that the student learning through outdoor education techniques could also benefit from training in self regulation techniques in order to increase perceptions of self-efficacy and therefore improve performance and rate of learning.

The environments, in which rock climbing and white water kayaking are undertaken, are often found to be highly stress inducing environments for the learners within outdoor education settings (Bunting et al 2000). Students are often in the position of having their learning compromised by the levels of anxiety that they are experiencing. Students' ability to learn becomes impaired by their own physiological reactions to cognitive anxiety levels evoked by stressing stimuli. If the students were able to self-regulate their anxiety, and outdoor educators could provide practical steps to monitor and support this self-regulation, the educational potential of these sessions should increase.

In studies of self-efficacy related to test anxieties there has been found strong negative correlations (Pintrich & DeGroot, 1990; Smith et al., 1990). Several authors have found inverse relationships between self-efficacy and state anxiety in stressful environments (Bandura, 1983; Litt, 1988) and that low self-efficacy is a characteristic of anxiety disorders and phobias (Maddux, 1991). The extent to which an individual believes they can exert a controlling influence over a stressful situation has been shown to vary directly with arousal and performance (Averill, 1973; Bandura, 1983; Folkman, 1984), while perceptions of a lack of control have been associated with increased anxiety (Endler, Speer, Johnson, & Flett, 2000; Glass et al., 1973; Geer & Maisel, 1972). Perceived control in stressful situations and level of self-efficacy has been found to be strong predictors of academic achievement (Manstead & van Eekelen, 1998). While Endler et al. (2001) suggest that control and self-efficacy are separate constructs derived from separate sources and effect behaviour in differing ways, both have strong influences on performance and accomplishment. Self-efficacy beliefs can be used to predict learning performances, which can be positively affected by a teacher to student intervention designed to enhance self-efficacy (Jackson 2002, Schunk & Ertmer 2000). Linnenbrink & Pintrich (2003) state that students who have high and positive self-efficacy beliefs will be engaged in academic processes to a higher degree in terms of their behaviour, cognition and motivation for the educational tasks.

The body's reaction to stressing stimuli, the release of hormones, and reaction of the parasympathetic nervous system seem to be focussed on the fight or flight response, a situation where historically learning was not a high priority, attack, escape and evasion were the main focus.

Today's outdoor education teaching and learning environments can evoke similar physiological responses, but the opportunities for young people to develop strategies and levels of self-efficacy for dealing with these situations has been eroded in such a way as they are no longer able to cope with, and act appropriately, when faced with these challenges, these responses must therefore be dealt with in a suitable way. Cognitive state affects the ability to think, learn and process information, so this would suggest that learning would be impaired under conditions where cognitive state is heightened beyond specific limits. Likewise, somatic arousal (one's perception of state of arousal/anxiety) must influence perceptions of self-efficacy. These three factors (cognitive, physiological, and somatic arousal) are probably linked in their feedback loops and partly or fully dependant upon each other. Certainly the author's own studies into somatic and physiological anxiety values during white water kayaking classes have shown strong positive correlations between verbalised somatic anxiety values and physiological arousal levels derived from heart rate measuring devices and highly inverse correlations between verbalised somatic anxiety values and performance accomplishment.

Self-efficacy is linked to arousal in that arousal/physiological state (Bandura 1977) is one of the four 'corner-stone' variables around which our perceptions of self-efficacy are made. Stress reactions occur after 'primary appraisal' (Lazarus 1991) where the person focuses on what is at stake and what they have to lose, where as perceptions of self-

efficacy are related to the 'secondary appraisal' (O'Leary and Brown 1995) where the person assesses the resources they have to deal with the stressor. When a student assesses and discovers that a new situation is beyond their experience and that they do not have the resources to meet the challenge this further escalates the primary stress response and leads to a downward spiral of lessening cognitive and physiological function.

The degree of self-efficacy for a task has been found by several authors (Bandura, 1977; Salomon, 1984; Berry, 1987; Schunk, Hanson and Cox, 1987) to effect motivation for, level of effort and persistence in, educational tasks. The rank order for, and the relative strengths of the factors influencing self-efficacy will need to be investigated further in order to establish where best to target interventions. For beginning kayakers it could be proposed that imaginal [sic] experiences would have greatest influence, since these kayakers have little performance accomplishment or vicarious experience upon which to draw. For intermediate kayakers, performance accomplishment would, perhaps, be the most influential. However, if role models or other kayakers are available, then vicarious experience may have an equal or greater effect. The success or failure of another's performance, as well as their status, (relative ability/ degree of influence) in relation to the learner, may also influence the strength of this experience in changing the perception of self-efficacy.

The skill of the outdoor educator may be best used in the verbal persuasion field of influence. Saying the 'right' things at the 'right' time or not saying the 'wrong' thing, is a skill that can have a huge influence on augmenting self-efficacy that is further strengthened when success leads to positive re-enforcement through the performance accomplishment domain.

Taking Bandura's model of self-efficacy and its dependant factors, it is proposed that the following processes can happen if physiological arousal is used as the starting point or the factor that is influenced by the circumstances to the greatest degree.

Increased physiological arousal above the optimum level is associated with decreased self-efficacy which is associated with decreased performance accomplishments which is associated with further increases in physiological arousal which leads to further decreases in self-efficacy and so forth and so on, in a downward spiral of decreasing function.

Decreased physiological arousal from above the optimum is associated with increased self-efficacy which can lead to increased performance accomplishments which is associated with further decreases in physiological arousal which leads to further increases self efficacy and so forth and so on, in an upward spiral of increasing function.

Many valuable outdoor education experiences today find it necessary to include a wow factor to entice participation, it is used as a carrot to get young people involved but unfortunately the reality of the situation is too much for their over sensitive senses, so long have they been deprived of real stressors in this modern world.

An ex all black was asked recently how he managed to remain calm and outwardly collected even in the most stressful of matches, he replied that even the biggest game was nothing, a mere drop in the ocean relative to being in a spitfire with a Messerschmitt on your tail and all his buddies gone. Becoming outwardly immune to stress, developing self-efficacy for life's situations, is about knowing what stress is and how the current situations demands compare in relation to the most stress you have ever known from your own bank of performance accomplishments.

The lower our perception of self-efficacy for a particular situation or intended action, the more removed it is from our normality, the further from perceived risk and the distant it is from our previous experience. We need to spend our time working to augment students self-efficacy before we can gain most benefit from the outdoor experience. The further from our experience the more fertile our minds are at creating fabulous 'what if' scenarios that we will play out. As we are absorbed into them, the vision becomes stronger and stronger and we build a self-fulfilling prophecy of ever-greater intensity until it is the only reality that we can see and the only way we can play it out. The virtual reality that we have created in our minds becomes actual reality as we let it happen the way we imagined, we make reality fit with our image, self doubt forces us to project our image in a negative way with the obvious results, because we have no successful performance accomplishment experiences with which to balance our natural negativity. We, as outdoor educators, must therefore provide opportunities for experience based perceptions and beliefs to be positively fostered through real, transferable, outdoor activities.

Five studies have been undertaken by the author to test equipment, protocols and interventions focusing on augmentation of self-efficacy.

The first investigation looked at levels of anxiety evoked by repeated runs of the same rapid. Cognitive function was monitored before during and after the event. The results from these tests indicated that the student had an extremely raised resting heart rate (after 30 minutes sitting still) in the range 119 to 140 beats per minute raising to a maximum in excess of 190 during run one and three. These heart rates were while the student was kayaking but were not in any way paddling hard so therefore this is an anxiety induced heart rate and not one produced as a result of work load. The recall of number sequences was impaired for the duration of the test compared with scores the day before and the day after, suggesting that cognitive ability is impaired when under duress of this nature.

In the stopper experiments the potential for the reduction of anxiety and muscular tension was investigated. Kayaker's performance should be improved if their anxiety level and muscle tone is appropriate. Participants were asked to side surf a stopper and to verbalize a number from 1 to 10 to indicate their anxiety level. After 5 trials, most kayakers were slumped onto their front deck with their arms very relaxed, usually their eyes closed, mumbling one or two. Verbalisation of their level of anxiety perhaps brings it into a higher level of consciousness where they can then monitor it and exert a greater degree of control upon it.

The third test investigated the physiological and somatic anxiety response to stressful situations, and the recovery between stressful periods for a whole day white water kayaking for both males and females. This would help to indicate where the teachable and learnable periods are. Heart rates were monitored via continuous electronic measuring devices and the perceptions of anxiety/ confidence were recorded from periodic oral questioning. It was found there was strong correlation between heart rate and reported somatic anxiety levels. The female participants reacted more strongly than the males to stress inducing stimuli, but both groups returned to a similar value between rapids, suggesting that both groups could relax and therefore be in a teachable state at specific points during the day.

The fourth study was designed to observe the period of time an individual is in a state of high anxiety before and after a specific anxiety-inducing event. A student was monitored before, during and after kayaking over a waterfall. It was observed that the heart rate took in excess of 30 minutes to return to a steady state after the anxiety-inducing event. The same participant could reduce their heart rate to a similar level in 7 minutes after a maximal physical exertion event. This would suggest that teaching and learning might be most efficient at least 15 minutes before and 30 minutes after stress events.

In the fifth study it was necessary to observe the heart rate response to maximal paddling effort. In order to isolate the response due to effort, a kayak ergometer (kayak version of a rowing machine) was used. Participants were asked, after a short technique training session, to paddle as hard as they could on the machine for a period of one minute. Maximal heart rates were recorded in the range of 170 to 180 beats per minute but reduced down to resting values after 5-7 minutes.

The author has trialled intervention techniques that cover all Bandura's four cornerstone sources around which self-efficacy beliefs are formed. In the physiological arousal variable useful techniques have been verbalisation as in the stopper riding experiments above, and using a technique called a moment of stillness. In this technique the learner, just before they are about to perform or start to learn, is asked to take a moment where they empty their minds of thought and action usually associated with an exhalation and then to immediately jump into the activity. This takes away any extraneous thoughts and worries and focuses the mind and body on the task at hand. Students have also been made aware of their physiological arousal through the use of heart rate monitors and like the verbalisation technique once it is in the conscious sphere it can be influenced and brought under control.

For the verbal persuasion source the following strategies have been used to good effect. Self-talk, in this approach the students are encouraged to talk to themselves in a positive manner. The use of positive peer pressure and the use of a significant other telling them that they have the skills and more importantly the control to succeed are useful strategies. To influence vicarious experience, visualisation has been used, in this the student imagines themselves doing a perfect performance, and sensualisation where they imagine what it feels like doing a perfect performance, as well as watching good or significant role models have been used to good effect.

For the performance accomplishment factor, successful performances are important; in order to achieve this it is important to foster perceptions of control rather than mastery. The moving up the scale of task difficulty must be motivated by the student with feedback given to the student on where they have come from and where they are going.

In a changing world of differing and diluted norms it is important that we outdoor educationalists embrace new ways of working such as self-efficacy augmentation, to enable our powerful medium to reach young people from all social groups. We must sell ourselves as having the skills and resources to refocus society and generate the much needed risk resilience and personal responsibility that are so sadly in decline. It is vital that research is carried out into the exact nature of the stressors, the interplay between them, and their effects on the student when working in the outdoor setting. This must then be followed by an investigation of practical steps to enhance monitoring, intervention and self-regulation techniques to build self-efficacy and provide more optimum teaching and learning conditions for powerful, meaningful, and much needed, outdoor education to ensue in today's world. Outdoor education can then take its place as the "ultimate reality experience".

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About the author

Matt Barker Outdoor Stream Leader and Senior Lecturer in the Division of Sport and Recreation at Auckland University of Technology. He lectures to both diploma and

degree level programmes. Current research projects are involved with augmenting self-efficacy to reduce anxiety in outdoor learning environments and equipment and technique testing for white water safety and rescue. He is a contributing editor to the New Zealand Journal of Outdoor Education and a regular contributor to New Zealand Kayak magazine.

Division of Sport and Recreation
Auckland University of Technology
Private Bag 92006
Auckland 1020
New Zealand

Phone: 0064 9 9179999x7147
Fax: 0064 9 9179960
Email: matt.barker@aut.ac.nz