

Efficacy of Outdoor Adventure Education in Developing Emotional Intelligence During Adolescence

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This study was an efficacy evaluation of an outdoor adventure intervention to facilitate emotional intelligence (EI) among early adolescents. A pre-post-test design was used. Participants were a convenience sample of 76 Grade 10 learners from a private high school for boys in a major South African city. They completed the Bar-On EQ-i:YV at pre-intervention, post-intervention and follow-up. The results indicated that participation in outdoor intervention led to a sustainable increase in the overall EQ scores of participants as well as in certain subskills of EQ, namely intrapersonal skills, adaptability and general mood but not in interpersonal skills and stress management.

Keywords: emotional intelligence; outdoor adventure education; experiential learning; adolescence; “The Journey”; rites of passage; sustainability

Youths experience life situations for which EI is a critical resource for thriving. According to Bar-On (2007), emotionally intelligent people are able to manage personal, social and environmental change effectively by being realistic and flexible in coping with the immediate situation and solving problems of an interpersonal nature. They need to be sufficiently optimistic, positive and self-motivated, and should be able to effectively manage their emotions. The presence of these skills will have a direct impact on life adjustment and success. Bar-On (2007) further narrows the impact of EI down to the following: physical

health; psychological health; social interaction; school performance; workplace performance; self-actualisation; and subjective well-being.

Patrikakou and Weissberg (2007) were of the view that life development needs are helped when schools work together with families to address children's academic, social, emotional and character development. Outdoor adventure education has prospects to facilitate EI skills in the short-term (Brookes, 2003) or longer-term (Barwick, 2004).

Outdoor adventure education is a process during which participants are exposed to a variety of physically and/or psychologically demanding outdoor activities in a remote and unfamiliar setting to create learning in individuals or groups, often with the goal of improving society or communities (Bosch & Oswald, 2010). Goldenburg, McAvoy and Klenosky (2005) found that outdoor adventure experiences provide participants with opportunities to achieve personal goals, gain self-confidence and be more independent, and to build warm relationships with others, which contributes to a sense of community and a sense of belonging.

In the South African education system, room has been made for the inclusion of more engaging and experiential instructional strategies that use the outdoors and adventure to facilitate learning and is encouraged (Stremba & Bisson, 2009).

Outdoor adventure education can be viewed as a form of experiential learning based on the assumption that personal growth takes place through reflection on experiences. However, since the above-mentioned theory of experiential learning is currently being treated as a separate aspect of education, the real challenge would be to ensure that it is allowed to have a greater impact on learning and instruction in schools. "The Journey", is a 23-day outdoor adventure education programme, and is a metaphor for, which constitutes outdoor adventure education. It is a process in which learners participate in specific activities and then reflect on their participation in those activities (Hopkins & Putman, 1993; Martin, Franc & Zounková, 2004; Priest & Gass, 1997). This learner-centred form of learning focuses on the role of experience in education as proposed by stretch-zone theory (Panicucci, 2007), optimal arousal theory (Duffy, 1957), social cognitive theory (Bandura, 1986) and attribution theory (Heider, 1958). Structured programmes such as "The Journey" can thus be used to create experiences that provide participants with opportunities to grow and develop (individually and as a group).

Developing Emotional Intelligence during Adolescence

EI can be improved (Bar-On, 2007), and several EI programmes claiming improvement have been designed, although only a few have been shown to work empirically (Chang, 2008). Many of these programmes still need to be evaluated and replicated using actual EI measures (Bar-On, 2007). “The Journey” is an outdoor adventure education programme that facilitates the development of emotional intelligence. It is a rite of passage intervention for addressing issues such as identity through the use of experiential learning in a group and individual setting. Its processes and outcomes are illustrated in Figure 1.

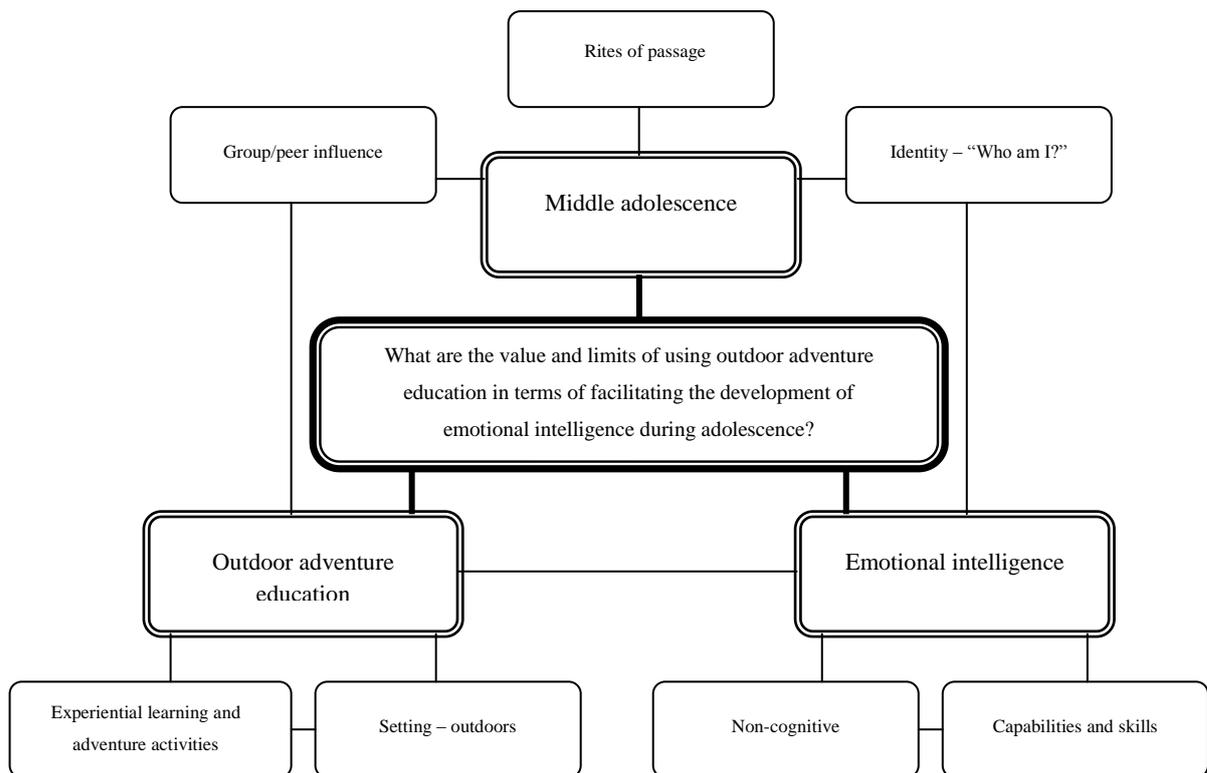


Figure 1: The Journey: processes and outcomes

This figure illustrates the interrelationships between various concepts and how participation in outdoor adventure education can facilitate the acquisition of certain skills (EI) by adolescent participants.

Goals of the Study

The goal of the study was to determine whether emotional intelligence can be facilitated through the use of outdoor adventure education and, if so, whether the perceived impact is

sustainable (will the skills acquired remain stable and consistent over a period of three months). The study sought to answer the following two questions:

- a. How does learners' participation in the outdoor adventure education programme facilitate EI development among early adolescent boys?
- b. How sustainable are EI gains from facilitation through outdoor adventure education on teenage boys?

Method

Research design and procedure

A pre-post experimental design with follow-up was used for the study. The administration of the *Bar-On Emotional Quotient Inventory (Bar-On EQ-i:YV)* (Bar-On, 2007) formed part of a 'classical' experiment that involved pre- and post-testing. The participants completed the Inventory before embarking on "The Journey", as well as at its completion. This was followed by another post-test three months later.

Participants who attended a private boys only school in a large South African city completed the *Bar-On EQ-i:YV* questionnaire (Bar-On, 2007) in 2011 both before embarking on "The Journey" and after its completion. This was followed by another post-test three months later. Attrition ($n=11$) resulted in a final sample of 76.

Measuring Instrument

Emotional intelligence (EI) was measured by using the *Bar-On Emotional Quotient Inventory: Youth Version* (Bar-On, 1997; Bar-On & Parker, 2000). It measures the EI components of interpersonal and intrapersonal abilities, stress management, adaptability and general mood.

Cronbach's alpha for the various *Bar-On EQ-i:YV* (Bar-On, 2007) scales ranged from 0.81 to 0.90 for 13–18-year-olds. Furthermore, Bar-On and Parker (2000) report excellent test-retest reliabilities for the various *Bar-On EQ-i:YV* (Bar-On, 2007) scales. In the current study, EQ sub-scale Cronbach alpha coefficients ranged from 0.79 – 0.86.

Data Analysis

Pre-post test data were compared using analysis of variance procedures to determine programme effects at post-test and follow-up against baseline. From the results of the repeated measures MANOVA, shown in Table 1, it was evident that no statistically significant differences occurred between subjects with regard to boarding ($(F(7, 68) = 0.341,$

Outdoor Adventure Education and Emotional Intelligence

$p = 0.932$) and mother tongue (English vs. Afrikaans vs. African languages) ($F(14, 124) = 0.597, p = 0.863$). Multivariate tests were conducted to avoid an inflated Type 1 error.

Ethical Issues

Permission to conduct the study was granted by the University of Pretoria's research Ethics Committee. Informed consent and assent were formally obtained from the school, participants and their parents. Participation was voluntary. Procedures were explained orally and in writing to both parents and learners. Participants were informed of their right to withdraw from the study at any time and that their disclosures would be treated with the strictest confidence. Confidentiality was ensured in that no identifying information was given out at any time during the study.

Results

The results of the MANOVA univariate tests show that all EQ facets differ significantly over time ($p < 0.05$). Twelve of the fourteen hypotheses were rejected on the 5% level of significance as seen in Tables 1 and 2 below.

Table 1

Within-subjects pre-post1 test comparisons over time periods

EQ subfields: M pre-M post	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
TEQPost1 – TEQPre	6534.017	1	6534.017	46.394	<.001*	.385***
IntraPost1 – IntraPre	3570.747	1	3570.747	23.189	<.001*	.239***
InterPost1 – InterPre	2153.899	1	2153.899	9.019	.004*	.109**
StressPost1 – StressPre	918.331	1	918.331	7.043	.010*	.087**
AdaptPost1 – AdaptPre	7106.121	1	7106.121	31.876	<.001*	.301***
MoodPost1 – MoodPre	2775.015	1	2775.015	15.122	<.001*	.170**

Outdoor Adventure Education and Emotional Intelligence

Table 2

Within subjects pre-post2 (Follow-up) test comparisons over time periods

TEQPost2 – TEQPre	2472.105	1	2472.105	19.349	<.001*	.207***
IntraPost2 – IntraPre	2599.601	1	2599.601	17.049	<.001*	.187**
InterPost2 – InterPre	684.675	1	684.675	2.896	.093	
StressPost2 – StressPre	.905	1	.905	.010	.920	
AdaptPost2 – AdaptPre	2635.620	1	2635.620	23.266	<.001*	.239***
MoodPost2 – MoodPre	1471.263	1	1471.263	8.764	.004*	.106**

*p<0.05 (significant at the a 5% level of significance)

Small effect (0.00 – 0.2),*Medium effect (0.2 – 0.5),****Large effect (0.5 – 0.8)

(Cohen, 1988).

Abbreviations used: Pre – refers to directly before “The Journey”; Post1 – refers to directly after “The Journey” and Post2 – refers to 3 months after “The Journey”.

Comparing pre- and post1- and pre- and post2-“Journey” EQ scores

The results indicate a significant difference in total “Journey” EQ scores from pre- to post1- (medium effect size), and from pre- to post2- (medium effect size), which suggests that participation in “The Journey” results in an increase in the overall EI skills of participants (Table 1) and the increases observed appear to be sustainable (Table 2). Looking at the individual subskills, when pre- and post1-“Journey” scores were compared, results suggest that participation in “The Journey” results in an increase in all EI subskills: intrapersonal skills (medium effect size); interpersonal skills (small effect size); stress management skills (small effect size); adaptability (medium effect size); and general mood (small effect size). At follow-up (post2), “Journey” scores were compared, suggests an increase in only three of the five subskills mentioned, namely intrapersonal skills (small effect size); adaptability (medium effect size); and general mood (small effect size).

Discussion

The results of the research indicate that participation in “The Journey” results in a sustainable increase in overall EI, but with regard to the sustainability of the subskills acquired, the effect

on certain skills is more lasting (i.e. intrapersonal skills, adaptability and general mood) than on others (i.e. interpersonal skills and stress management).

In a study by Hoye (2009), adolescent males who participated in a 10 day adventure therapy showed a positive effect on overall emotional intelligence.

Our findings suggest that increases were maintained in only three of the five subskills mentioned, namely intrapersonal skills (small-effect size); adaptability (medium effect size); and general mood (small effect size). Thus it appears that the initial increase in interpersonal and stress management skills did not have a sustainable effect.

Hindes, Thorne, Schwean and McKeough (2008) also found a positive impact on intrapersonal skills, interpersonal skills and adaptability.

Limitations of the study

Only one (private, boys only) school was involved and only boys (mainly white, English-speaking) participated in the study. The inferential potential is thus limited. Since all the Grade 10 boys at the school took part in “The Journey”, it was not possible to have a control group. However, the results do mirror previous research findings with regard to the issue of sustainability, where certain subskills of EI gained seem to be more sustainable than others. Thus, at best one can possibly say that a certain trend is observed with regard to sustainability.

Conclusion

“The Journey” appears to have sustainable effects on the development of certain subskills of EI (intrapersonal skills, adaptability and general mood), than on others (interpersonal skills and stress management). Thus outdoor adventure education programmes can be used as a vehicle to develop certain EI skills that are crucial in dealing effectively with everyday challenges and demands. The implementation of programmes such as “The Journey” at school level makes it possible to facilitate the development of emotional intelligence from a young age, making school a place where emphasis can be placed on EI development.

References

- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Upper Saddle River, NJ: Prentice-Hall.
- Bar-On, R. (1997). *Bar-On Emotional Quotient Inventory: Technical manual*. Toronto, Canada: Multi-Health Systems.

Outdoor Adventure Education and Emotional Intelligence

- Bar-On, R. (2007). How important is it to educate people to be emotionally intelligent, and can it be done? In: R. Bar-On., J. G. Maree, & M.J. Elias (Eds), *Educating people to be emotionally intelligent* (pp. 1-16). Johannesburg, South Africa: Heinemann.
- Bar-On, R., & Parker, J.D.A. (2000). *Bar-On Emotional Quotient Inventory: Youth version. technical manual*. Toronto, Canada: Multi-Health Systems.
- Barwick, H. (2004). *Young males: Strengths-based and male focused approaches*. Wellington, New Zealand: Ministry of Youth Development.
- Bosch, R., & Oswald, M. (2010). Adolescents' perception of adventure-based programme. *Perspectives in Education*, 28(1), 64-76.
- Brooks, A. (2003). A critique of neo-Hahnian outdoor education theory. Part one: Challenges to the concept of "character building". *Journal of Adventure Education & Outdoor Learning*, 3(1), 49-62.
- Chang, K. B. T. (2008). Can we improve emotional intelligence? In: J. C. Cassady, & M. A. Eissa (Eds). *Emotional intelligence: Perspectives on educational and positive psychology* (pp. 25-45). New York: Peter Lang.
- Duffy, E. (1957). The psychological significance of the concept of "arousal" or "activation". *Psychological Review*, 64(5), 265-275.
- Goldenburg, M., McAvoy, L., & Klenosky, D.B. (2005). Outcomes from the components of an outward bound experience. *The Journal of Experiential Education*, 28, 123-146.
- Heider, F. (1958). *The psychology of interpersonal relations*. New York, NY: Wiley.
- Hindes, Y. L., Thorne, K. J., Schwean, V. L., & McKeough. (2008). Promoting intrapersonal qualities in adolescents: Evaluation of Rapport's Teen Leadership Breakthrough Program. *Canadian Journal of School Psychology*, 23(206), 206-222.
- Hopkins, D., & Putnam, R. (1993). *Personal growth through adventure*. London, England: David Fulton.
- Hoye, T. L. (2009). *An investigation of the effect of an adventure based youth development program on emotional intelligence and life skills*. Unpublished dissertation, University of Canberra.
- Martin, A., Franc, D., & Zounková, D. (2004). *Outdoor and experiential Learning: An holistic and creative approach to programme design*. London, England: Aldershot.
- Panicucci, J. (2007). Cornerstones of adventure education. In: R. G. Poutry., J. Panicucci, & R. Collinson, *Adventure education: theory and application* (pp. 33-48). London, England: Human Kinetics.
- Patrikakou, E. N., & Weissberg, R. P. (2007). School-family partnership to enhance children's social, emotional and academic learning. In: R. Bar-On, J. G. Maree & M. J. Elias (Eds), *Educating people to be emotionally intelligent* (pp. 55-68). Johannesburg, South Africa: Heinemann.
- Priest, S., & Gass, M. A. (1997). *Effective leadership in adventure programming*. Champaign, IL: Human Kinetics.
- Stremba, B., & Bisson, C. A. (2009). Teaching theory, facts and abstract concepts effectively. In B. Stremba, & C. A. Bisson (Eds), *Teaching adventure education: best practices*. Champaign, IL: Human Kinetics.