

The impact of an adventure based experiential learning programme on the life effectiveness of black high school learners

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(Received 22 March 2011; Revision Accepted 6 November 2011)

Abstract

The aim of this study was to determine the effect of an adventure based experiential learning programme (AEP) in developing the life effectiveness of black high school learners. “Life Effectiveness” reflects the psychological and behavioural aspects of human functioning which determine the proficiency of a person in society. A total of eighty learners (forty boys and forty girls) aged between 12 and 17 years participated in this programme. They were categorized into an experimental (n = 40) and control group (n = 40). The experimental group participated in a five day AEP in the Vredefort Dome in the North-West Province. “The Life Effectiveness Questionnaire” (LEQ-H) was administered before, directly after and six months after the intervention programme to determine the immediate and long term effects of the AEP. Results for total life effectiveness for the short and long term for the experimental group indicated effect sizes of $d = 0.03$ and $d = -0.03$, respectively, while for the control group $d = 0.12$ and $d = -0.06$ was, respectively obtained. The intergroup results for the experimental and control categories, yielded overall medium effect sizes of $d = 0.35$ and $d = 0.49$ over the short and long term respectively, after comparing the adjusted means. The AEP promoted beneficial short and long term changes in the experimental group in contrast to the control category.

Keywords: Adventure, life effectiveness, adolescents, experiential learning, self confidence, students.

How to cite this article:

Louw, P.J., Meyer, C.D., Strydom, G.L., Kotze, H.N. & Ellis, S. (2012). The impact of an adventure based experiential learning programme on the life effectiveness of black high school learners. *African Journal for Physical, Health Education, Recreation and Dance*, 18(1), 55-64.

Introduction

Adventure based experiential learning programmes (AEPs) are nothing new and can be traced back as far as Plato’s era (Louw, Strydom, Meyer & Kotze, 2007). During the 20th century a revival of this concept occurred when educationists like Kurt Hahn as well as international organisations like *Outward Bound* used AEPs to curb the social deterioration of the youth (Hattie, Marsh, Neill & Richards, 1997; Priest & Gass, 2005). Witt and Crompton

(1996) indicated that AEPs are globally recognized as a scientific method to support the development of life effectiveness in the adolescent and adult. In this study life effectiveness was regarded as the psychological and behavioural aspects of human functioning which determine the proficiency of a person in society (Niell, Marsh & Richards, 1997). Adventure based experiential learning can also be described as a mode of education and/or intervention where adventurous and risky activities which are physically and psychologically challenging, are implemented within a safe and skills developing environment, aimed at intra- and interpersonal development (Wurdinger, 1995; Nadler & Luckner, 1992).

In contrast to the traditional intervention regimes, Gray and Perusco (1993), Gass (1993) and Kimball and Bacon (1993) recommended an outdoor AEP to serve as therapeuticum against the negative impact of society and educational system. According to Kimball and Bacon (1993) adventure therapy challenges the feeling of helplessness and perception of low self-esteem of participants. It also guides them to discover to use inner sources of strength by means of the successful mastering of adventure challenges. Howard and Peniston (2002) as well as Driver (1992) also claimed that an AEP may have psycho-emotional benefits like the enhancement of inter alia, feeling of freedom, independence, self-management, inner security and self-confidence. The enhancement of abovementioned parameters is of paramount importance for high school learners in order to support/guide their behaviour, as well as motivational and emotional perception (Kimball & Bacon, 1993). This may also enhance patience and respect for others, and offers opportunities to learners to develop decision-making skills (Howard & Peniston, 2002; Gass, Garvey & Sugerman, 2003).

Findings from Hattie *et al.* (1997), however, indicated that AEPs or components thereof are not necessarily beneficial to all participants. In this respect Neill (1999) postulated that especially the 15-year old learners may react in contrast due to their hesitance to evaluate themselves positively. According to Neill and Flory (2000), a critical challenge in the 21st century will be the development of AEPs aimed at capacity building and empowerment of underprivileged people. This is presently especially important, because high school learners are posing greater demands to educational institutions. The scenario in school settings in South Africa has changed over the last decade and includes learners of different age, culture, socio-economic status, family support, attitudes and values (Upcraft, 1993).

In South Africa no research could be found regarding the participation of black high school learners in AEPs. The research question posed for this study, therefore, is what the short and long term impact will be of an AEP on the life effectiveness of black high school learners. Results from this study could contribute to the implementation of intervention programmes for deprived populations in order to empower the adolescents.

Method and Materials

Research design

The research design for this study was a pre- and test-post test quasi-experimental design.

Participants

A total of 40 boys and 40 girls were randomly selected from the grade 9 learners of an urbanized black school from which permission was granted to undertake this study. From this group 20 boys and 20 girls were randomly selected to form the experimental group while the other 40 comprised the control group. The age of the learners were 12-17 years (\bar{x} = 14.5 years). This school was selected due to the fact that it was situated in an urbanized community with learners coming from low socio-economic background and none of the learners had any exposure to AEP prior to this study. The official language of tuition in the school was English, however, it was not the mother tongue of any of the participants.

Procedure

After the necessary consent was obtained from the school management the selected learners received a letter outlining the research project addressed to their parents/guardians so that they could give permission to carry out the study. It was clearly stated that participation in this research was optional and that they could terminate their children's participation at any stage. It also requested the parents/guardians to sign the informed consent letter as well as medical declaration. A list of personal items to be taken on the AEP was also supplied.

After all the administrative requirements were completed, the selected learners were asked to complete the Life Effectiveness Questionnaire (LEQ-H) (Test 1) under the supervision of the researcher. Two teachers were also present to assist learners who experienced some difficulties in understanding the questions so it can be interpreted to them in their mother tongue. Therefore, T1 (Test 1) provided the baseline data for this research. After completion of the 5th day of AEP intervention the LEQ-H was again administered to the learners in order to determine the short term effect of the AEP (Test 2). A third assessment (Test 3) was done 6 months after completion of the intervention in order to determine the long term impact of the AEP. In all 3 assessment periods both the experimental and control groups completed the LEQ-H.

- Adventure based experiential learning programme (AEP)

The AEP which was compiled for this research was based on the principles of the GRABBS assessment as suggested by Schoel and Maizell (2002) and the TRAM-model as described by Stumbo and Peterson (2004). The compilation of the AEP activities were done after developing the baseline effects (Test 1) of the group selecting activities and metaphors to be used in the intervention programme and process (Schoel & Maizell, 2002). Activities selected for this study included the following: problem-solving activities, camping, abseiling, canoeing, mountain and rock climbing, map and compass reading and a solo experience. This was conducted at the Venterskroon camping site and the surrounding wilderness area – part of the officially recognized world heritage site.

The AEP was carried out over 5 days as it was financially and logistically the optimal duration which could be accommodated within the school holidays. Experienced Outward Bound instructors were supervised the programme while the principal researcher monitored all activities in order to ensure consistency. The experimental group was divided into three

equal sized groups in order to give ample opportunity for participation and personal input from the instructor. On completion of each activity the facilitating process was conducted.

Measuring instrument

- Life Effectiveness Questionnaire (LEQ-H) (Neill *et al.*, 1997)

The LEQ-H (Neill *et al.*, 1997) was used to assess the impact of the AEP on the following characteristics which are associated within life effectiveness namely; achievement motivation, action initiative, emotional control, intellectual flexibility, self-confidence, social competence, task leadership and time management (Neill *et al.*, 1997). According to Neill *et al.* (1997), the LEQ-H demonstrated Cronbach alpha's coefficient of 0.75-0.93 and can be used on diverse groups regardless of age and gender alphas.

Statistical analysis

Statistical analysis was done by the Statistics Consultation Services of the North-West University (Potchefstroom Campus) using the Statistica programme (Statsoft, 2006).

Inter-(experimental vs control) and intra-group (experimental vs experimental and control vs control) differences were determined and the significance of the differences interpreted by calculating the effect size (Thomas & Nelson, 2001). Effect size (ES) of greater than 0.8 and around 0.5 is regarded as a big and moderate practical significance, respectively, while an ES of <0.2 can be interpreted as a small practical significance and can be ignored. Due to the baseline differences (T_1) between the experimental and control groups the means for the various variables of the LEQ-H were statistically adjusted in T_2 and T_3 in order to correct for the initial differences.

Results

Only 38 of the questionnaires were usable in each group. In order to determine the reliability of the questions the Cronbach alpha was determined. In this respect Field (2005) indicated that a Cronbach alpha (CA) of ≥ 0.8 indicates reliability where a CA of ≥ 0.5 is still acceptable but suggests that the results should be interpreted with caution. After analyses it seems that except for active initiative (CA=0.46) and self-confidence (CA=0.48), all parameters showed a CA of >0.5 but none of them exceeding 0.8 (Table 1). Therefore, the results should be interpreted with the necessary discretion.

In Table 1 the results of the AEP on the intra-group differences for the short (T_1 vs T_2) as well as the long term (T_1 vs T_3) are presented. In the case of the experimental group the only parameter showing a moderate practical significance in the short term was time management ($d=0.32$). In the case of the control group time management and task oriented leadership also showed small improvements ($d=0.26$). In all other parameters the difference was of little practical significance.

Regarding the long term effect (T_1 vs T_3) the experimental group showed no practical significant changes except for active initiative where a negative moderate practical significant change was noted. In the control group achievement motivation also indicated a

negative moderate practical significance ($d = -0.39$), while task oriented leadership showed a moderate practical significant ($d = 0.42$) improvement. In Table 2 the intergroup differences of the AEP intervention in black high school learners over the short term (T1 vs T2) as well as the long term (T1 vs T3) are presented. In order to ensure reliability statistical procedures were applied to compensate for differences during the baseline assessment (T1), therefore T2 and T3 will refer to “adjustments means” for the various parameters

Table 1: The effect of an AEP on the life effectiveness (LEQ) of black high school learners (intra-group differences)

Life Effectiveness parameters	CA	n		\bar{x}		SD		Short term effect (T1→T2)			Long term effect (T1→T3)					
		E	C	E	C	E	C	E	C	E	C	E	C			
Time management	0.72	38	38	16.8	15.9	3.98	4.53	0.136	0.145	0.32	0.26	0.943	0.421	0.01	0.17	
		Test 2														
		Test 3														
Social competence	0.63	38	38	18.1	16.7	3.73	3.69	0.495	0.587	0.14	0.11	0.160	0.719	0.24	0.06	
		Test 2														
		Test 3														
Achievement motivation	0.72	38	38	21.1	20.8	2.61	2.95	0.485	0.450	-0.14	-0.11	0.504	0.040	-0.13	-0.39	
		Test 2														
		Test 3														
Intellectual flexibility	0.56	38	38	19.5	18.3	3.14	3.65	0.876	0.379	-0.03	0.20	0.905	0.365	-0.03	-0.22	
		Test 2														
		Test 3														
Task leadership	0.52	38	38	16.0	14.1	4.99	3.71	0.532	0.104	0.15	0.26	0.253	0.025	0.23	0.42	
		Test 2														
		Test 3														
Emotional control	0.58	38	38	17.9	16.1	3.72	4.61	0.288	0.265	-0.18	-0.19	0.580	0.183	-0.11	-0.23	
		Test 2														
		Test 3														
Active initiative	0.46	38	38	20.7	18.8	2.99	2.95	0.772	0.722	-0.05	-0.06	0.061	0.299	-0.34	-0.17	
		Test 2														
		Test 3														
Self confidence	0.48	38	38	21.8	19.6	2.33	3.23	0.543	0.481	-0.11	0.12	0.633	0.768	-0.12	0.06	
		Test 2														
		Test 3														
Total life effectiveness		38	38	19.0	17.8	2.00	2.05	0.879	0.486	0.03	0.12	0.885	0.690	-0.03	-0.06	
		Test 2														
		Test 3														

E= Experimental group; C = Control group; CA = Cronbach Alpha; AEP = Adventure based experiential learning programme

Table 2: The effect of an AEP on the life effectiveness (LE) of black high school learners (inter-group differences)

Life effectiveness parameters	Adjusted means			Short term effect (T1 → T2)		Adjusted means			Long term effect (T1 → T3)	
	E – T2 \bar{x}	C T2 \bar{x}	–	p-value	Effect size (d)	E – T3 \bar{x}	C T3 \bar{x}	–	p-value	Effect size (d)
Time management	17.73	17.06		0.384	0.200	16.68	16.6		0.919	0.024
Social competence	18.26	17.24		0.133	0.356	18.49	17.25		0.097	0.390
Achievement motivation	20.7	20.56		0.820	0.054	20.98	19.3		0.054	0.450
Intellectual flexibility	19.28	18.99		0.683	0.096	19.36	17.77		0.009	0.630
Task leadership	16.21	15.63		0.526	0.149	16.56	16.15		0.634	0.110
Emotional control	16.76	15.64		0.206	0.300	17.16	15.36		0.040	0.490
Active initiative	20.06	19.02		0.178	0.327	19.05	18.47		0.522	0.155
Self confidence	21.08	20.5		0.318	0.245	21.44	19.95		0.015	0.620
Total life Effectiveness	150.24	144.47		0.153	0.353	149.36	141.03		0.045	0.496

E= Experimental group; C = Control group; AEP = Adventure based experiential learning programme

Regarding the total life effectiveness a moderate practical significance (d=0.35) occurred in favour of the experimental group (150.24 vs 144.47) over the short time (T1 vs T2). In three of the eight parameters assessed the experimental group showed a moderate practical significant difference compared to the control group viz: social competence (d=0.39), emotional control (d=0.30) and initiative (d=0.33). These findings suggest that compared to the control group, the experimental groups will, to a moderate degree, have more confidence and self-perceived ability in social situations, be more capable to maintain emotional control in stressful situations and more likely to take initiative and initiate action in new situations.

With regard to the long term impact of the AEP on the life effectiveness of high school learners, it seems that in 5 of the 8 parameters the experimental group showed higher scores which can be regarded as moderate practical significance, viz, social competence (d=0.39), achievement motivation (d=0.45), intellectual flexibility (d=0.63), emotional control (d=0.49) and self-confidence (d=0.62). Total life effectiveness also showed a moderate practical significance (d=0.49).

Discussion

Time management reflects the ability of an individual to plan and use the available time effectively and is regarded as a most valuable characteristic for success in life (Neill *et al.*, 1997;Stenger, 2001). Effective time management, therefore, not only increases productivity but also minimizes stress, resulting from always being in a hurry (Whetton & Cameron, 1995).

According to research literature AEP may impact positively on time management. In the studies of Eagle, Gordon, and Lewis (2005) and Ho Choon Mei (2003) a small practical significant difference was found after AEP intervention (d=0.23 & d=0.24 respectively).

The age of their participants was also relatively in line with that of this study on high school learners (12.7, 10.6 and 14.5 years). However, the duration of their AEP intervention was shorter than the 5 days of this study (1 and 3 days). According to Louw (2008), it seems that the duration of an AEP may be a critical factor in determining its impact on its various parameters.

When the long term effect of the AEP on high school learners was determined (T_3) it seems that the positive results ($d = 0.32$) determined immediately after the programme, vanished (Table 1). Possible reasons for this are that due to logistical implications, no follow-up activities could be done. Meyer and Wenger (1998) have stated that follow-up sessions may be most valuable to reinforce positive changes resulting from an AEP intervention. In the experimental and control groups the parameters of active initiative ($d=-0.34$) and achievement motivation ($d=-0.39$) showed a moderate practical significant decline. No clear cut explanation for this could be given as the school learners may experience some difficulties in understanding the questions properly (Louw, 2008). The control group also indicated a moderate practical significant increase in leadership during the final (T_3) assessment ($d=0.42$) which may also be linked to the above-mentioned point.

Another possibility for the conflicting data in this study may be the fact that the learners were in the developmental phase in their life (Neill, 1999) and that they sometimes may experience some difficulties to improve their self-perception. Therefore, the typical outcome as expected and endorsed by other researchers is not always found in the age group around 15 years of age.

From Table 2 it is clear that a moderate practical significant difference occurred in favour of the experimental group in the parameters viz, social competence, emotional control, active initiative and total life effectiveness. It is also clear that when the long term effect is compared, the experimental group showed a moderate practical significant difference in 5 of the eight parameters. Total life effectiveness also indicated a moderate practical significant difference. It was only in time management, task leadership and active initiative that no practical significance occurred in the long term impact of AEP on the learners. In terms of the impact of AEP, these findings suggest that, apart from time management, task leadership and active initiative, the experimental group will in the long term be to a moderate degree more effective in areas of personal skills which determine the extent to which they will be able to achieve their goals in life, compared to the control group.

From the above it seems that participation in an AEP benefited the experimental group over the short and long term in various parameters of life effectiveness. However, as stated earlier, some of the results were contradictory to those reported in some previous studies or what was expected. Reasons for this may be that the age of the population studied fell into the 15 year age group who are in the development phase of their life, who typically find it sometimes difficult to evaluate themselves. Contributing to the above-mentioned the language barriers may further contribute to the conflicting results and should be addressed in future research in South Africa.

Conclusion

From the results it is clear that an AEP can be used effectively as a way of empowering black high school learners. However, various considerations should be kept in mind. From observation as well as interviews with the participants it became clear that the language barrier posed a big problem. More attention should also be given to the facilitation process and to make sure that the participants understand the questions properly. Furthermore, when AEP is used within the context of black high school learners, efforts should be made to repeat the activities of the AEP in order to ensure its long term impact.

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