

Effectiveness of Outdoor Education Program on Physical Education Student Resilience

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Outdoor education programs are used as a medium for the learning process in secondary and tertiary educational institutions in Malaysia. Resilience is a characteristic and capacity that can overcome the impact of biological, psychological and social factors that threaten an individual's health. The lack of research in Malaysia is one of many reasons for the perception that an outdoor education program is not a necessary inclusion in the curriculum. This perception can be changed by providing evidence which proves that outdoor education is important for students in fostering resilience when facing an extreme condition. This study provided an insight on the psychological resilience of the participant when engaged in an outdoor education program. A two week outdoor program was evaluated in the context of student psychological resilience. Bachelor of Education students studying Physical Education (N = 46 students) were involved in the study. In this study, there are 5 parts of evaluation that need to be answered by the students to evaluate their reaction to the outdoor education program before and after delivery. The 4 parts were divided into: Respondent Background; Resilience Scale (RS); Ego-resilience Scale (ERS); Review of Personal Effectiveness (ROPE); and Social Support (SS). The study results showed that there is a significant difference before and after the program in terms of the scale of resilience [$t(45) = 2.65, p = 0.01$]; Self-Description [$t(45) = 3.48, p = 0.01$], Personal Effectiveness [$t(45) = 4.70, p = 0.01$] and social supports [$t(45) = -3.73, p = 0.01$]. Therefore, there is a significant relationship between: Resilience and Self-Description ($r = 0.55, p = 0.01$); Personal Effectiveness ($r = 0.65, p = 0.01$) and Social Support ($r = 0.40, p = 0.01$). Overall, student participation in outdoor education programs in UPM has a positive impact on their psychological resilience.

Key words: *Program Evaluation, Outdoor Education Program, Resilience.*



Introduction

Program evaluation was used to examine the strength and weakness of the programs and it can be conducted at the early stage or the end stage of the program (Higgins, 2007). Evaluation is important to a program as stated by Metz, (2007) who stated that the important role of evaluation in the long-term is building credibility toward meeting goals and answering basic questions about program effectiveness and that evaluation data can then be used to improve the program. Programs are the object of evaluation which derives from the idea that social programs should have demonstrable merits and a goal on success or failure of the program (Heimlich, 2010). Evaluation systemically investigates characteristics and merits of the program where it provides information on the effectiveness of the programs to optimize outcomes, quality and efficiency (Spiel, Schober & Bergsmann, 2015).

An outdoor education program can be defined as one of the educational philosophy programs which, based on experiential learning method, uses nature as learning places that involve participants in challenging environments to develop their interpersonal skills (Marzuki, 2016). Outdoor education programs can have positive impact on students in improving their cooperation skills, leadership, communication, management and loyalty towards their peer (Shellman & Hill, 20017). Many studies have been conducted to examine the effect of an outdoor education program on participant personal and social development (Mackenzie, Son & Eitel, 2018). Outdoor education programs involves structured exposure to adventurous activity in outdoor environments to help facilitate intrapersonal and interpersonal growth (Booth & Neill, 2018). Outdoor education programs usually come with predetermined goals and objectives in relation to helping participants understand their weaknesses, strengths and personal values (Neill, 2008). The unfamiliar outdoor environments can develop the resilience skills of the participants because being in a challenging situation can create a state of constructive anxiety (Ewert & Yoshino, 2011).

Resilience is the process of successfully adapting to difficult or challenging life experience and can be considered as the characteristic and capacity that can overcome the impact of biological, psychological and social factors that threaten an individual's health (Ungar, Dumond & McDonald, 2005). Resilience can be built through gradual exposure to experiences that challenge feelings of safety and competence (Ewert & Yoshino, 2011). Resilience can be learned and developed and is different for each individual. There are multiple ways to build psychological resilience including community connection, goal setting, self-challenge, positive psychology and acceptance of change and debriefing; reflection and learning from past experience are also important (American Psychological Association, 2010). Resilience can be gained through life experience, some which does not necessarily occur inside the classroom.



Resiliency in adolescence is the capacity of those who are exposed to identifiable risk factors to overcome those risks and avoid negative outcomes such as delinquency and behavioural problems, psychological maladjustment, academic difficulties and physical complications. Since the mid 1980s, a number of investigations have focused on the question of why some children cope successfully with major adversities in their lives while others develop serious behaviour-disorders (Werner, 2005).

One of the trends in the field of outdoor education programs is evaluation of program effectiveness (Johnson, 2012). A number of groups are increasingly interested in having program outcomes measured through evidence-based evaluation (Sibthord, 2009). Since outdoor education programs claim to be a powerful learning process medium, many studies have been conducted that examine the effects of outdoor education programs, especially on participant personal and development (American Institute for Research, 2005; Boyle, 2002 & Baker 2003) behaviours.

However, the effectiveness of outdoor education programs in improving resilience has not been acknowledged and is even criticized by many researchers (Cunneen & White, 2011). There are various studies which radically questioned such influences by requesting empirical evidences to prove assertions of positive outcomes. Bogner (2002), for instance judged any demonstrable positive effects of outdoor education program as ill-founded. Yet, the evidence that supported the positive impacts of outdoor education experience are often incomplete, anecdotal and based on studies involving small and restricted populations. This lack of sufficient and rigorously derived data has been particularly evident in the case of impacts of outdoor education programs on resilience (Walker & Shinn, 2002). The purpose of this study is to determine the effects of outdoor education programs on student resilience and the relationship between resilience scale and respectively: ego, personal effectiveness and social support.

Outdoor Education Programs in the Malaysia Universities

The development of outdoor education programs in the Malaysian educational system is said have begun in the 1960's with the inclusion of an outdoor education program as an informal syllabus for co-curricular activities in Maktab Perguruan Ilmu Khas (MPIK-now, known as Teacher Education Institutions of Malaysia, Ilmu Khas Campus). The main focus of the program was to gain personal and social development (Asperon, 2010; Eys et al., 2008 & Scholer & Teoh, 1980). During this four-year course, students of Physical Education courses were required to participate in several outdoor education camp programs conducted in remote area settings. Outdoor activities such as kayaking, trekking, orienteering, abseiling and survival are among the activities conducted in the programs. Outdoor education program continued to grow and officially were incorporated as part of curriculum in Bachelor Degree Physical Education programs offered in 1980's. The establishment of the National Educational



Philosophy in 1998 aimed to develop students who were well-balanced in terms of physical, emotional, spiritual, intellectual and social development and this further influenced the growth of the outdoor education program.

Apart from being offered in Teachers Education Institutions in Malaysia, the outdoor education program is a compulsory subject for the Sports Science and Physical Education students at Universiti Pendidikan Sultan Idris. It is a three-credit subject which is compulsory for first semester Sports Science and Physical Education students. The subject is divided into three parts; weekly theoretical class; weekly practical session; participation in outdoor education camping program. The outdoor education camping program is normally conducted in remote settings such as the mountain region or islands. The outcome of the program is expected to increase student personal and social development, management skills and outdoor pursuit skills. Normally, weekly theoretical classes cover outdoor education topics, such as philosophy, history, leadership, management strategies and current issues in outdoor education. Weekly practical classes exposes students to various outdoor pursuit skills ranging from basic camping skills to land and water based adventure activities such as kayaking, orienteering, abseiling, survival and trekking. By the end of the semester, the students will have participated 12 days of the outdoor education camping program.

The traditional camping basis in the on campus approach is used, where the students sleep in tents and prepare their own meals. During the camp, the students participate in several outdoor pursuit expeditions such as kayaking, tracking, boating, orienteering and rope activities which are completed on a daily rotation basis. At night, they will be geared for a series of group discussion, games and group presentations. These activities are conducted to reinforce their outdoor education camp learning experience. This camping program emphasizes positive affective values and promotes behavioural change such as resilience, group cohesion, self-confident, interpersonal and intrapersonal with adventure activities as a medium of learning.

Resilience

Resilience has been conceptualized as experiencing growth through a disruptive event (Richardson, 2002). The popularity of the resilience construct marked a qualitative change in the psychology literature in terms of a movement from a deficit-based paradigm toward focus on positive qualities and their acquisition (Lam & McBride-Chang, 2007). Richardson (2002), traced the development of our understanding of resiliency in what he termed the “Meta-theory of Resilience and Resiliency”. Richardson divided resilience research into three waves with the first wave focusing primarily on the qualities of people who had been deemed resilient. The second wave moved beyond description to explore how resilience is acquired and the third wave emphasized how certain experiences would enhance or create resiliency.



An individual may reintegrate resiliently, reintegrate back homeostasis or baseline, reintegrate with loss or dysfunctional reintegrate. Resilient reintegration represents the experience of growth or insight through the disruption rather than simply getting through the experience or experiencing some sort of loss. While much of the work on resilience focuses on traumatic situations or recovery from highly stressful life experiences, it has also been acknowledged that resilience is a common trait that can arise from everyday situations (Masten, 2009). Recently, a number of researchers have been interested in the development of specific interventions to build on increased resiliency. These interventions include work training (Waite & Richardson, 2004), clinical interventions for youth (Waaktaar, Christie, Borge & Torgersen, 2004) and adventure programming for military soldiers and veterans (Ewert, Van Puymbroeck, Frankel & Overholt, 2011).

The idea of utilizing specific training or experiences to enhance resiliency is of particular interest to the Outdoor Education field. Outdoor Education programs often utilize a variety of activities, such as peak ascents, high ropes courses or rock climbing that can be challenging and stressful to participants. In addition, social and emotional aspects of participation such as living and working in a group or being away from home, may also be stressful. The idea that these experiences can ultimately result in positive growth and development has been a cornerstone of research and theorizing in the outdoor education literature for several decades (Neill & Dias, 2001). This line of thought has led to a handful of studies that have sought to specifically demonstrate a relationship between participants in outdoor education programs and enhanced resilience (Ewert & Yashino, 2011; Neill & Dias, 2001).

Outdoor Education Program and Resilience

The major research question of this study is whether an outdoor education program can increase the resilience of university students. The study involved a 22-day Outward Bound adventure education program and its effect on resilience on 41 young adult participants. The research used a 15-item version of the original 25 item Resilience Scale (Wagnild & Young, 1993) and found a four item Social Support Scale and found that all participants reported positive changes in their resilience and the overall effect size was very large ($ES = 1.10$). It should be noted however that participants in the program were not considered at-risk and did not show any emotional, adjustment, addiction or psychological problems. Neill and Dias (2001), noted that “it would be very useful to know more about the effectiveness of other intervention techniques for enhancing psychological resilience”.

Another study by Skehill (2001) also used the 15-item Resilience Scale along with measures of coping styles and their perceived effectiveness, stress appraisals and measures of psychological well-being and distress. Skehill evaluated the effect that attending an extended stay outdoor education program had on adolescent male and female students, which had a

general focus on adventure activities. The study found no increase in resilience following the program. The outdoor education program that is the focus of this study is camping and adventure activities for educational undergraduate students emphasize Physical Education program between 20 to 24 years old.

Methodology

This study is an experimental research that uses descriptive approach to determine the pre and post perceptions of the participants on the issue, content, and input of the outdoor education program. The main instrument in this study is the questionnaire which evaluates the perception and learning process of each participant to determine their level of resilience in the context of the outdoor education camp program. The research population consists of students from Bachelor of Education (Physical Education), UPSI intake 2018/2019 from Faculty of Sports Science. This population was selected because outdoor education is one of the subjects in their academic course list. A total of 94 students, both male and female were the participants of this study; they underwent an education camping program for 12 days and were instructed to answer the questionnaire both before and after the camping program.

The questionnaire was used as an instrument in this study. In this study, there are four variables of evaluation that were answered by the students to evaluate their resilience before and after the outdoor education camping program. In this questionnaire, the four variables were divided as displayed below in Table 1:

Table 1: Variables and author source

| Variable | Authors |
|---|---|
| The Resilience Scale (RS) (<i>likert-scale 7</i>) | Wagnild & Young, 1993, Block & Kremen, 1999 & Connor & Davidson, 2003 |
| Ego-resilience Scale (ERS) (<i>likert-scale 5</i>) | Marsh & Hocever, 1986 |
| Personal Effectiveness (<i>likert-scale 5</i>) | Neill & Dias, 2001 |
| Social Support (<i>likert-scale 5</i>) | Sheldon & Battencourt's, 2002; Neill & Dias, 2001 |

Results and Discussion

In the research instruments, part A consisted of respondent backgrounds including gender, hometown, and outdoor education experience. Data analysis for all respondents is descriptive. Overall, there were 94 students from the 2018/2019 Bachelor of Physical Education intake who data was collected for this study. Table 2 displays descriptive analysis of the resilient, self-

description, personal effectiveness and social supports before and after the outdoor education camping program. Table 2 presents the following data: mean resilience before the program is 5.08 (SD = .44) and increase to 5.39 (SD = .56) after the program; ego resiliency mean was 4.20 (SD = .41) before the program and 4.29 (SD = .38) after the program was implemented; personal effectiveness before the program showed mean 4.09 (SD = .42) and 4.22 (SD = .36) after the students were engaged with the camping program and finally, for social supports mean before show 4.27 (SD = .39) and 4.45 (SD = .36) after the program. Overall, all of the variables studied in this research have increased in mean due to the positive impacts of the program, except for the social supports.

Table 2: Mean Distribution Before and After for Variables toward Outdoor Education Camp Program

| Variable | Before | | After | |
|------------------------|--------|-----|-------|-----|
| | Mean | SD | Mean | SD |
| Resilience Scale | 5.08 | .44 | 5.39 | .56 |
| Ego Resiliency Scale | 4.20 | .41 | 4.29 | .38 |
| Personal Effectiveness | 4.09 | .42 | 4.22 | .36 |
| Social Supports | 4.27 | .39 | 4.45 | .36 |

To analyze the relationship between resilience, self-description, personal effectiveness and social supports, Pearson correlation was used as the data are normally distributed. The result were that the variables of the instrument are significantly related to each other. Table 2 below shows the relationship between resilience and ego resiliency ($r = .48, p = .01$), personal effectiveness ($r = .51, p = .01$) and social supports ($r = .41, p = .01$).

Table 2: Relationship between Resilience, Self-Description, Personal Effectiveness and Social Support

| Relationship with | Resilience | r | p | Interpretation of relationship |
|------------------------|------------|-----|-----|--------------------------------|
| Ego-resilience | | .48 | .01 | Moderate |
| Personal Effectiveness | | .51 | .01 | Moderate |
| Social Supports | | .41 | .01 | Moderate |

Table 3 below shows that there is a significant difference toward resilience mean score before the program (M = 5.08, SD = .44) and after the program (M = 5.39, SD = .56), $t(93) = 4.90, p = 0.01$. While pre-post-test for Ego resiliency tests showed significant differences with the mean score before attending the program (M = 4.20, SD = .41) and after the program (M = 4.29, SD = .38) = $t(93) = 1.92, p = 0.05$. This data shows that there is a more positive change in resilience among respondents after participating in the outdoor education camp program. For the variables of personal effectiveness the study also found increase in effectiveness after

program participation with $t(93) = 2.78, p = 0.01$. The data showed that there was significant difference before and after the program on social support with the score before the program ($M = 4.27, SD = .39$) and after ($M = 4.45, SD = .36$), $t(93) = 3.81, p = .01$.

Table 3: Differences Before and After the Outdoor Education Camp Program towards Variables

| Variable | Before | | After | | t | df | p |
|------------------------|--------|-----|-------|-----|------|----|-----|
| | M | SD | M | SD | | | |
| Resilience | 5.08 | .44 | 5.39 | .56 | 4.90 | 93 | .01 |
| Ego-resilience | 4.20 | .41 | 4.29 | .38 | 1.92 | 93 | .05 |
| Personal Effectiveness | 4.09 | .42 | 4.22 | .36 | 2.78 | 93 | .01 |
| Social Supports | 4.27 | .39 | 4.45 | .36 | 3.81 | 93 | .01 |

Discussion, Conclusion and Recommendations

The effectiveness of a program depends on the evaluation of past programs. There is much research, that appropriate and effective planning and management succeed in achieving program objectives (Robson, Shannon, Goldenhar, & Hale, 2001). The effectiveness of a program depends on the content and the delivery of the content to the students. The content and delivery could affect the level of resilience of an individual either positively or negatively.

Results of this study are in agreement with findings from existing research (Shellman & Hill, 2017; Gamba, 2017). Their research has demonstrated the positive effect of an outdoor education program on participant resilience. Even though this study used different assessment measures, similar domains were examined. Data analyses have shown that there is a significant positive gain in level of resilience during the 14 days of outdoor education camping program. It should be noted that resilience is fostered in environments where one has strong will to survive and social support surrounds them.

All of the items tested in the instrument show positive correlation except for social support. Many students tended to agree with the items which showed that their level of resilience was improving. The researcher used resilience scale, self-description scale and a review of personal and social effectiveness to examine the level of resilience and the effectiveness of the program for the students. The results show that all items were correlated. The concept of resilience provides useful information in the essential foundation and building of individual strength because as this is a behaviour and attitude that can be learnt. Continuous training exposure and learning can effectively improve the aspects of resilience.



Students became more confident in themselves and in addition tend to give support to others which helps develop their resilience levels throughout the program. These study results can assist outdoor education program organizers and facilitators to analyze how to ensure improvement in pedagogy and delivery that will afford students maximal resilience scale achievement through participation. If this is the result, then the program will have the desired impact student self-development. Further, the results of this study can be used by the other outdoor education programs so that they can achieve better results by gleaning from the objectives and findings of this study. It is suggested that future research continue from this study with a longitudinal approach since some researchers have suggested that behaviour changes may take a long time to occur and manifest and studies of this nature to date have been restricted to a limited time frame (one year after camp). Future researchers are also encouraged to assess the influence of a longer duration outdoor education camp on the development of resilience as there is still lack of research in this area.



REFERENCES

- American Institute for Research. (2005). Effect of outdoor education programs for children in California. American Institute for Research Retrieved from www.seer.org/pages/research/AIROutdoorSchool2005.pdf
- Aspenson, J. L. (2010). The influence of outdoor education to improve the quality of life for individuals with dementia thesis proposal. (Master Thesis), University of Minnesota, Duluth.
- Bogner, F. X. (2002). The influence of a residential outdoor education programme to pupil's environmental perception. *European Journal of Psychology of Education*, 17(1). 19- 34
- Booth, J. W., & Neill, J. T. (2018). Coping strategies and the development of psychological resilience. *Journal of Outdoor and Environmental Education*. 20(1), 47-54
- Boyle, I. T. (2002). The impact of adventure-based training on team cohesion and psychological skill development in elite sporting team. (Phd Dissertation), University of Wollongong, Sydney.
- Ewert, A., & Yoshino, A. (2008). An initial exploration of the influence of short-term adventure-based experiences on levels of resilience Paper presented at the Coalition for Education in the Outdoors, Indiana University's Outdoor Center.
- Eys, M. A., Ritchie, S., Little, J., Slade, H., & Oddson, B. (2008). Leadership status congruency and cohesion in outdoor expedition groups. *The Journal of Experiential Education*, 31(1), 78-94.
- Gamba, F. J. (2017). Social capital in selected business associations of food processing SMEs in Tanzania and Rwanda: A synthetic-based approach. *International Journal of Asian Social Science*, 7(1), 63-84.
- Heimlich, J. E. (2010). Environmental education evaluation: Reinterpreting education as a strategy for meeting mission. *Evaluation and Program Planning*, 33(2), 180–185.
- Higgins, P. (2007). Toward consensus on the nature of outdoor education. *Journal of Adventure Education and Outdoor Leadership*, 13(4), 2-3
- Johnson, J. W. (2012). The effect of high school outdoor-based adventure leadership programs in independent schools on personal effectiveness and locus of control (Master Thesis), Prescott College, Arizona



- Mackenzie, S. H., Son, J. S., & Eitel, K. (2018). Using outdoor adventure to enhance intrinsic motivation and engagement in science and physical activity: An exploratory study. *Journal of Outdoor Recreation and Tourism*, 21(October 34 2017), 76–86.
- Masten, A. S. (2009). Ordinary Magic: Lessons from Research on Resilience in Human Development. *Education Canada*, 49(3), 28-32.
- Metz, A. J. R. (2007). Why conduct a program evaluation? Five reasons why evaluation can help an out-of-school time program part 1 in a Series on Practical Evaluation Methods, (October), 1–4. Retrieved from <https://cyfar.org/sites/default/files/Child.pdf>
- Neill, J. T., & Dias, K. L. (2001). Adventure education and resilience: The double-edged sword. *Journal of Adventure Education & Outdoor Learning*, 1(2), 35– 42.
- Neill, J. (2008). *Enhancing Life Effectiveness: The impacts of outdoor education*. Unpublished Doctoral Dissertation, University of Western Sydney, Australia.
- Richardson, G.E. (2002). The metatheory of resilience and resiliency. *Journal of Clinical Psychology* 58, 307-321.
- Robson, L. S., Shannon, H. S., Goldenhar, L. M., & Hale, A. R. (2001). *Guide to Evaluating the Effectiveness of Strategies for Preventing Work Injuries*, National Institute for Occupational Safety and Health : Cincinnati,
- Scholer, E. A., & Teoh, T. L. (1980). Teacher training in Physical Education in Malaysia. *Journal of Physical Education and Recreation*, 51(1), 74-77.
- Shellman, A., & Hill, E. (2017). Flourishing through Resilience: The Impact of a College Outdoor Education Program. *Journal of Park and Recreation Administration*, 35(4), 59–68
- Sibthorp, J. (2009). Making a difference with experiential education research: Quality and focus. *Journal of Experiential Education*, 31(3), 456-459.
- Skehill, C., M. (2001). Resilience, coping with an extended stay outdoor education program, and adolescent mental health. *University of Canberra*.
- Spiel, C., Schober, B., & Bergsmann, E. (2015). *Program Evaluation. International Encyclopedia of the Social & Behavioral Sciences: (2nd ed.)*, Elsevier.



The American Psychological Association (2002). Road to Resilience. American Psychological Association. Retrieved from <https://www.apa.org/helpcenter/road-resilience> & <https://www.apa.org/monitor/oct02/pp>

Ungar, M., Dumond, C., & McDonald, W. (2005). Risk, Resilience and Outdoor Programmed for At-risk Children. *Journal of Social Work*, 5(3), 319–338.

Wagnild, G., & Young, H. (1993). Development and psychometric evaluation of the Resilience Scale. *Journal of Nursing Measurement*, 1(2), 165–178.

Werner, E. E. (2005). What can we learn about resilience from large-scale longitudinal studies? In S. Goldstein & R. B. Brooks (Eds.), *Handbook of resilience in children* (pp. 91-106). New York: Kluwer Academic/Plenum