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**AN ANALYSIS OF MENTAL TOUGHNESS IN
OUTDOOR ADVENTURE PROGRAM AMONG
DIPLOMA LEVEL INTERVARSITY
ATHLETES**



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MOHD SHARIMAN SHAFIE

UNIVERSITI PENDIDIKAN SULTAN IDRIS

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ABSTRACT

This study addressed four main purposes, which are: (1) to examine the effects of outdoor adventure program towards participants' mental toughness; (2) to investigate the influence of socio demographic variables on the improvement of mental toughness; (3) to identify which of the psychological factors of Model of Mental Toughness (Loehr, 1986) that are mostly affected by outdoor adventure program; and (4) to determine the primary outdoor activity that affects participant mental toughness. This study utilized pre and post quasi experimental with control group design. The 42 items of Psychological Performance Inventory (PPI; Loehr, 1986) was administered among 265 ($n = 165$, experimental group; $n = 100$, control group) diploma level intervarsity athletes and age in a range of 17-30 years old. The primary finding of this study supported that outdoor adventure camp is effective in improving participants' mental toughness. This study found that only the socio demographic variables of: (1) types of sports; (2) category of sports; and (3) level of participation had significant influences on participant's mental toughness improvement. The study also highlighted three psychological factors of: (1) self confidence; (2) negative energy control; and (3) attention control indicated significant improvement as a result of the camp. Survival activity was ranked as the most influential activity toward mental toughness improvement. Implications of the findings provide evidences on the effectiveness of outdoor adventure program in improving participants' mental toughness. This study also addressed the importance of specific design outdoor adventure program for improving mental toughness. The study also provides an empirical data for future study in this field.





Analisis Ketahanan Mental Dalam Program Rekreasi Luar Dikalangan Atlet-atlet Intervasiti Peringkat Diploma

ABSTRAK

Kajian ini menyasarkan empat tujuan utama, iaitu: (1) menilai keberkesanan program rekreasi luar terhadap ketahanan mental peserta; (2) menyiasat kesan program rekreasi luar terhadap ketahanan mental dan kaitannya dengan sosio demografi peserta; (3) mengenal pasti faktor-faktor psikologi berdasarkan “Mental Toughness Theory” (Loehr, 1986) yang paling terkesan oleh program rekreasi luar; dan (4) mengenal pasti aktiviti rekreasi luar yang paling memberi kesan terhadap ketahanan mental peserta. Kajian ini menggunakan kaedah pra dan pasca dengan kumpulan kawalan. Data kajian dikumpul menggunakan 42 soalan kaji selidik “Psychological Performance Inventory” (PPI; Loehr, 1986) daripada 265 orang ($n=165$, kumpulan eksperimen; $n=100$, kumpulan kawalan) atlet intervarsiti peringkat diploma dan berumur diantara 17-30 tahun. Dapatan utama kajian ini menyokong bahawa program rekreasi luar efektif terhadap pembinaan ketahanan mental peserta. Kajian ini menyatakan hanya sosio demografi peserta seperti: (1) jenis sukan; (2) kategori sukan; dan (3) peringkat penyertaan sukan yang mempengaruhi peningkatan ketahanan mental. Kajian ini turut menjelaskan bahawa tiga faktor psikologi iaitu: (1) keyakinan diri; (2) kawalan tenaga negatif; dan (3) kawalan konsentrasi mencatatkan peningkatan yang signifikan kesan daripada program ini. Aktiviti ikhtiar hidup dipilih sebagai aktiviti yang paling mempengaruhi peningkatan ketahanan mental. Implikasi daripada dapatan kajian ini menyediakan bukti terhadap keberkesanan program rekreasi luar dalam meningkatkan ketahanan mental peserta. Kajian ini juga menekankan kepentingan program rekreasi luar yang spesifik bagi meningkatkan ketahanan mental. Kajian ini juga menyediakan data empirikal untuk kajian masa hadapan dalam bidang ini.



TABLE OF CONTENT

	Page
ACKNOWLEDGEMENTS	iv
ABSTRACT	v
ABSTRAK	vi
TABLE OF CONTENTS	vii
LIST OF TABLES	xiv
LIST OF FIGURES	xvi
LIST OF ABBREVIATIONS	xvii

CHAPTER 1 INTRODUCTION

1.1	Background of Study	1
	1.1.1 Mental Toughness	2
	1.1.2 Outdoor Adventure	3
	1.1.3 Intervention of outdoor adventure program	4
1.2	Problem Statement	5
1.3	Significant of Study	7
1.4	Purpose of Study	8
1.5	Research Question	9
1.6	Limitation	11
	1.6.1 Previous outdoor adventure experiences and knowledge	11

1.6.2	Methodology	12
1.6.3	Pre and post design	12
1.6.4	The implementation of the camp	12
1.7	Definition of Terms	13

CHAPTER 2 LITERATURE REVIEW

2.1	Mental Toughness	16
2.2	The Psychological Attributes of Mental Toughness	17
2.3	Mental Toughness Theory	23
2.3.1	Self Confidence	24
2.3.2	Negative Energy Control	25
2.3.3	Attention Control	26
2.3.4	Visualization/Imagery Control	26
2.3.5	Motivation	27
2.3.6	Positive Energy Control	28
2.3.7	Attitude Control	28
2.4	Demographic Influence on Mental Toughness	29
2.4.1	Gender	29
2.4.2	Type of Sports	30
2.4.3	Level of Participation	31
2.5	Mental Toughness studies	32
2.5.1	Mental Toughness studies in Malaysia	35
2.6	Outdoor Adventure	37
2.7	Outdoor Adventure studies	39
2.8	Chapter Summary: Conclusion	46

**CHAPTER 3 METHODOLOGY**

3.1	Quantitative Method	48
3.2	Methodological Rationale	49
3.3	Quasi Experimental with Control Group	50
3.3.1	Pre-Test and Post-Test	51
3.4	Assumption of Study Population	52
3.4.1	Universiti Teknologi MARA (UiTM)	54
3.4.2	UiTM Perlis	54
3.4.3	UiTM Pahang	55
3.5	The Study Population	55
3.5.1	Rationales of Study Population Selection	56
3.5.2	The Experimental Group	56
3.5.3	The Control Group	57
3.6	Setting	59
3.6.1	Duration of Outdoor Adventure Program	60
3.6.2	Element of Competition	61
3.6.3	Facilitator	62
3.7	Instrumentation	64
3.7.1	Instrumentation Rationales	64
3.7.2	Pilot Study	65
3.7.3	Reliability and Validity	67
3.7.4	Student's Demographic Inventory	67
3.7.5	Psychology Performance Inventory	67
3.7.6	Score	70



3.8	Procedure Employed	70
3.8.1	Initial Contact	70
3.8.2	Administering Pre-test	71
3.8.3	Camp Participation	71
3.8.4	Administering Post-test	72
3.9	Data Analysis	73

CHAPTER 4 RESULTS

4.1	Result and Interpretation	74
4.2	Socio-Demographics variables of the participants	75
4.2.1	Experimental Group	76
i.	Gender	76
ii.	Type of Sports	77
iii.	Category of Sports	77
iv.	Level of Participation	77
4.2.2	Control Group	77
i.	Gender	78
ii.	Types of Sport	78
iii.	Category of Sports	78
iv.	Level of Participation	78
4.2.3	Summary of Demographics Analysis	79
4.3	Research Question 1	80
4.3.1	Overall Effects of the Camp on Mental Toughness	80
4.3.2	Summary of Research Question 1	82
i.	Paired Sample t-test	82
ii.	Independent t-test	83

4.4	Research Question 2	84
4.4.1	Step of Data Analysis	84
4.4.2	Gender	85
4.4.3	Summary of Gender	87
	i. Paired Sample t-test	87
	ii. Independent t-test	87
4.4.4	Types of Sport	88
4.4.5	Summary of Types of Sport	90
	i. Paired Sample t-test	90
	ii. Independent t-test	91
4.4.6	Category of Sports	92
4.4.7	Summary of Category of Sport	94
	i. Paired Sample t-test	94
	ii. Independent t-test	94
4.4.8	Level of Participation	95
4.4.9	Summary of Level of Participation	96
	i. Paired Sample t-test	96
	ii. ANOVA	97
4.4.10	Research Question 3	98
4.4.11	Summary of Research Question 3	100
4.4.12	Research Question 4	101
4.4.13	Summary of Question 4	102
4.4.14	Summary of Key Findings	102
	i. Overall Result	102
	ii. Gender Differences	102

iii.	Types of Sport	103
iv.	Category of Sport	103
v.	Level of Participation	103
vi.	Psychological Factors	104
vii.	Outdoor Adventure Activity	104

CHAPTER 5 DISCUSSION

5.1	Research Question 1	105
5.1.1	Overall Findings	106
i.	Influence of Camp's Activities	107
ii.	Influence of Camp's Environment	109
iii.	Influence of Camp's Facilitators	111
iv.	Influence of Element of Competition	113
5.1.6	Summary of Research Question 1	114
5.2	Research Question 2	116
5.2.1	Gender	116
5.2.2.	Type of Sport	119
5.2.3	Category of Sport	122
5.2.4	Level of Participation	124
5.2.5	Summary Research Question 2	128
5.3	Research Question 3	129
5.3.1	Self Confidence	131
5.3.2	Negative Energy Control	132
5.3.3	Attention Control	133
5.3.4	Summary of Research Question 3	134

5.4	Research Question 4	136
5.4.1	Summary	139
5.5	Summary, Recommendation and Conclusion	140
5.5.1	The Study Contribution	140
5.5.2	Pre Camp	143
5.5.3	The Camp	143
5.5.4	Post Camp	146
5.5.6	Suggestion for Future Research	147
5.5.7	Conclusion	148

REFERENCES 150

APPENDIXES

Appendix A: Students Verification	155
Appendix B: Questionnaire (PPI)	158
Appendix C: UiTM Pahang; Camp Unit Plan	161
Appendix D: UiTM Perlis; Camp Unit Plan	165
Appendix E: Notification of Paper Acceptance	169
Appendix F: Notification of Paper Acceptance	170
Appendix G: Notification of Paper Acceptance	171

LIST OF TABLES

Table	Page	
2.1	Benefits of outdoor adventure	45
2.2	Similarities between psychological attributes towards mental toughness development and outdoor adventure positive effects on psychological	47
3.1	PPI Internal Consistency	66
3.2	The detail of panel of experts	69
3.3	Data analysis techniques	73
4.1	Socio-demographic variables	76
4.2	Results of Paired Sample t-test comparing overall PPI's pre-test and post-test scores of experimental and control group	80
4.3	Results of Independent t-test comparing overall PPI's pre-test and post-test scores of experimental and control group	81
4.4	Results of Paired Sample t-test comparing PPI's pre-test and post-test scores based on gender	85
4.5	Results of Independent t-test comparing PPI's pre-test and post-test scores based on gender	86
4.6	Results of Paired Sample t-test comparing PPI's pre-test and post-test scores based on types of sport	88
4.7	Results of Independent t-test comparing PPI's pre-test and post-test scores based on types of sport	90
4.8	Results of Paired Sample t-test comparing PPI's pre-test and post-test scores based on category of sport	92
4.9	Results of Independent t-test comparing PPI's pre-test and post-test scores based on category of sport	93

4.10	Results of Paired Sample t-test comparing PPI's pre-test and post-test scores based on level of participation	95
4.11	Results of ANOVA comparing PPI's pre-test and post-test score based on level of participation	96
4.12	Results of Paired Sample t-test comparing PPI's pre-test and post-test scores based on seven psychological factor of PPI	98
4.13	Rank order of mean score for pre and post test	99
4.14	Results of descriptive analysis on the activities that affects mental toughness	101

LIST OF FIGURES

Figure	Page
2.1 Mental Toughness Theory	23
2.2 The differences between Outdoor Recreation and Outdoor Adventure	38
3.1 Designs for evaluating guideline implementation strategies	50
3.2 Pre, post test and setting	51
3.3 Distribution of students for experimental and control group	58
3.4 Setting: SPS133 Final Camp 2011	59
3.5 Element of competition: Group arrangement	61
3.6 Loehr's Psychology Performance Inventory (PPI)	68
3.7 Scoring categories of PPI	70
3.8 The flow of collecting data procedures	72
5.1 Dimensions of Mental Toughness (Loehr, 1986) that mostly affects by outdoor adventure program	129

LIST OF ABBREVIATIONS

NSC	National Sport Council
PPI	Psychology Performance Inventory
UiTM	Universiti Teknologi MARA
UPSI	Universiti Pendidikan Sultan Idris
SR113	Diploma in Sport Studies
SPS133	Subject of Outdoor Recreation
MORA	Malaysian Outdoor Recreation Association
PJRM	Malaysian Outdoor Recreation Instructors
KBS	Ministry of Youth and Sport
NSI	National Sport Institute

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Issues on athletes' mental toughness in sporting performance are popular topic among general public (Mohamad, Omar, & Fauzi, 2009). Peoples believe that mental toughness is crucial in order to achieve excellent sporting performance. Supporting the idea, Norris (1999) highlighted that sport practitioners, coaches, athletes and sport fans all around the world acknowledge the importance of mental toughness in sporting performance. However, despite the awareness on the issues, mental toughness remains a relatively growing area of sport psychology research.



1.1.1 Mental Toughness

Middleton, Marsh, Martin, Richards and Perry (2004b) claimed that “mental toughness is remaining inadequately defined and conceptualize” (p.2). Middleton et al. (2004a) defined mental toughness as a consistency or persistency to achieve the goal despite in the tough, pressure or difficult situation. Expanding the definition, Middleton et al. (2004b) also stated that mental toughness is “unshakeable perseverance and conviction towards some goals despite pressure or adversity” (p.1). Supporting the idea, Gucciardi, Gordon, and Dimmock (2008) described mental toughness as a superior mental quality of an athletes and it is one of the important psychological constructs for performance in athletics context.



In Malaysia, issues on athletes’ mental toughness are not rare to be heard. As reported in our local newspaper (Harian Metro, 2011), National Sport Council (NSC) and National Sport Institute (NSI) are working hard to improve Malaysian athletes’ tough character for Olympics London 2012. Based on these scenarios, arguably mental toughness today is becoming a focus by the sports practitioners in sporting performance. Several previous researchers also stated that in achieving excellent sporting performance, athletes could not only rely on skills and strategies, but must be complemented with excellent emotionally, spiritually and psychologically skills (Loehr, 1986; Middleton et al., 2004a,b; Gucciardi et al., 2008).





In the fields of sport psychology, mental toughness is one of the character buildings that have been focused by NSC and NSI particularly among youth athletes. Numerous programs have been organized by NSC and NSI with the purpose of improving youth athletes' mental toughness. Interestingly, several programs were conducted based on outdoor adventure program. For an example, NSC has organized several outdoor adventure camps aiming at developing youth athletes' mental toughness. However, there is lack of studies relating outdoor adventure program and athletes' mental toughness.

1.1.2 Outdoor adventure



On the other hand, outdoor adventure programs are greatly participated by peoples all around the world including athletes (Simmons, 2004). Virden (2006) defined outdoor recreation as a "recreation behavior, activities and experiences that occur or depend on natural setting" (p.310).

Specific to the study, Priest and Gass (2004) and Virden (2006) stated that the use of outdoor for recreation is called outdoor recreation pursuit or human powered outdoor adventure. They also defined outdoor adventure as self propelled activities performed in outdoor settings, and involved the elements of: (1) danger; (2) risk taking; (3) challenge (4) sensation seeking (5) achievement (6) competence; and (7) one's skills.





Over decades, outdoor recreation researchers found recreation programs such as outdoor adventure camps effect positively on participants' psychological aspects (e.g. Darst & Armstrong 1980; Webb, 1999; Ewert, 1989; Taylor, 1989; Boyle, 2002; Allain, 2006; Sheard & Golby, 2006; Wang, Liu & Kahlid, 2006; Gatzemann, Schweizer & Hummel, 2008; Godfrey, 2009). Most of the studies focused on common psychological constructs such as: (1) self esteem; (2) self confidence; (3) team cohesion; (4) leadership; (5) self actualization; (4) team trust; (5) communication; and (6) self efficacy.

1.1.3 Intervention of outdoor adventure in enhancing mental toughness



The researcher found relationship between outdoor adventure and mental toughness definitions. In brief, outdoor adventure commonly defined as the act of engaging in any adventure activities that perform in outdoor setting and involve element of challenge, risk, pressure, competence and one's skill.

On the other side, mental toughness commonly defined as the ability to stay calm despite in a tough, pressure or difficult situation. Several definitions also stressed that mental toughness exist in any kind of difficulties, hardiness or tough situation (Middleton et al., 2004b; Gucciardi et al., 2008). By reviewing both definitions, the researcher believed that the outdoor adventure program able to produces physical and mental pressures as well the activities exposed participants to the rough and open weather condition. As a result, mental toughness can be trained and improves in outdoor adventure program.





Unfortunately, there is an absence of study that specifically relates to mental toughness and outdoor adventure program. Previous studies on mental toughness were conducted based on sport itself. In addition, it is also difficult to find a study that specifically examines the effects of outdoor adventure program on participants' mental toughness. After all, the effectiveness of outdoor adventure program on participants' mental toughness is remains to be questioned.

1.2 Problem Statement

There are numerous programs have been organized by local sports body (e.g. school, college, university and national sport body) with purpose to improve mental toughness. Several programs reported have been implemented with the intervention of outdoor adventure program. However, yet, there are no evidences on the effectiveness of outdoor adventure program towards mental toughness improvement.

Several issues arises from the program's outcomes, such as: (1) the effectiveness of the intervention of outdoor adventure program in mental toughness improvement; (2) the effectiveness of the program design; (3) and the effectiveness of outdoor adventure activities in improving mental toughness. As result, these issues become sensational and frequently been highlighted in local media reports (Bernama, 2012).

Moreover, Malaysian government had released RM365 million (Malaysian Budget 2011) to Ministry of Youth and Sport (KBS). This budget allows National Sport Council (NSC) and National Sport Institute (NSI) to administer a high level





sport development program. According to the report, expectation of RM300 thousand have been spend annually for organizing an outdoor adventure camp with purpose to improve athletes mental toughness. A huge sum of money was spent in order to implement this kind of program, although the effectiveness remained been questioned. These issues also caused negative public perception on the effectiveness of government's spending.

In further investigation to the issues, several local universities also organized outdoor adventure program with purposes to improve athletes' mental toughness. Each university was expected to allocate around RM100 thousand per year for this kind of program. However, the effectiveness of these programs remains unknown.



To date, there are lacks of information regarding the effect of outdoor adventure program in improving mental toughness. As a result, outdoor recreation and sports practitioners have limited information and knowledge to implementing the effective outdoor adventure program with purpose to improve mental toughness.

As a conclusion, there are still no evidences on the effectiveness of outdoor adventure program in improving mental toughness. Given this situation, a study that specifically investigates the effectiveness of outdoor adventure program on improving participants' mental toughness should be conducted.





1.3 Significance of the Study

This study is the first kind in attempt in Malaysia to investigate and provide evidences on the effectiveness of the intervention of outdoor adventure program in improving mental toughness. The study findings provides evidences for several issues, such as: (1) the effectiveness of outdoor adventure program in improving mental toughness; (2) effective program design; (3) effective outdoor adventure activities in improving mental toughness; and (4) allocation of money for the program.

The study findings study can be utilized as guidance in order to design an outdoor adventure program with clearly-defined objective to improve participants' mental toughness. Information gathered in this study might assist in the design of essential outdoor adventure program. At the same time, the study might also enhance the effectiveness of outdoor adventure program.

Furthermore, the study findings expand the existing knowledge on mental toughness and outdoor adventure program. Even though several studies related with outdoor adventure have been conducted by local researcher (Md Taff, 2010; Zakaria, 2008), most of local studies were conducted based on other focuses (e.g. cohesion, environmental education, motivation, self confidence). This study serves another view on effects of outdoor adventure program rather than common psychological aspects.



Relatively, this study provide support for amount of money spent for organizing this kind of program are worthy enough with an accurate and effective program. This study also helps to eliminate negative public perception on the effectiveness of government's spending in outdoor adventure programs.

In the field of outdoor recreational studies, this study provides useful starting point for further research in this area of interest. The findings of this study provide some form of empirical data as a guide for future research in this area.

1.4 Purpose of the Study

The purposes of the study are fourfold:

1. To examine the effects of outdoor adventure program towards participants' mental toughness.
2. To investigate the influence of socio-demographic variables participants' mental toughness during outdoor adventure program;

2.1 Gender

- 2.1.1 Male
- 2.1.2 Female

2.2 Types of Sport

- 2.2.1 Individual Sport
- 2.2.2 Team Sport

- 2.2.3 Contact Sport
- 2.2.4 Non-contact Sport

2.3 Level of sport participation

- 2.3.1 District level
- 2.3.2 State level
- 2.3.3 University level
- 2.3.4 National level

3. To identify which of the psychological factor of Mental Toughness Theory (Loehr, 1986) that is mostly affected by outdoor adventure program?
4. To determine the primary outdoor adventure activity that affects participants' mental toughness development.

1.5 Research Questions

The research questions that will be answered through this study are:

1. Does the outdoor adventure program affect on participants' mental toughness?
2. Does outdoor adventure program affect on participants' mental toughness and influence by the socio demographic variables of;

2.1 Gender

- 2.1.1 Male
- 2.1.2 Female

2.2 Type of Sports

- 2.2.1 Individual Sport
- 2.2.2 Team Sport
- 2.2.3 Contact Sport
- 2.2.4 Non-contact Sport

2.3 Level of sport participation

- 2.3.1 District-level
- 2.3.2 State-level
- 2.3.3 University-level
- 2.3.4 National-level

3. What is the psychological factor of Mental Toughness Theory (Loehr, 1986) that mostly affected by outdoor adventure program?

4. Which of the outdoor adventure activity that had influenced participants' mental toughness mostly?

In order to answer the research questions, this study utilized quasi-experimental with control group design. Based on this design, the numerical data collected was “analyzed statistically in order to determine whether relationship existed between the two” (Gratton & Jones, 2004, p.21). Quantitative research met the aim of the study, in getting the thoughts, perception and opinion of large population regarding particular issues (Singh, Fook & Sidhu, 2006).

Psychology Performance Inventory (PPI: Loehr, 1986) was selected as study instrumentation for pre and post test. The questionnaire was divided into two sections: (1) the first section was a socio-demographic questionnaire, to assess participant's demographic background; (2) the second section was a 42 items of 7 psychological



factors (PPI: Loehr, 1986), to determine the effects of outdoor adventure program on mental toughness. Further explanation on research methodology was discussed in the third chapter.

The researcher recruited 265 first year students of Universiti Teknologi MARA (UiTM) from Pahang and Perlis campuses (intake of November-March 2010/2011). Most of the students are intervarsity athletes. They were selected for this study because the researcher faced some difficulties to recruit national athletes (e.g. those presented at Olympic, international circuits or world top ranked athletes) as they were busy preparing themselves for London Olympics 2012. Some of national athletes also were reported as having their training overseas. The chosen subjects were relevant to the context of the study since most of the UiTM's intervarsity athletes came from national sport schools and are considered as future Malaysian athletes.

1.6 Study Limitations

This study was subjected to the following limitations:

1.6.1 Previous outdoor adventure experiences and knowledge

The previous outdoor adventure experiences and knowledge of the participants were beyond the researcher's scope although they enrolled in the same academic courses. To minimize this effect, the researcher selected only first semester students from the



same course. They were assumed to have relatively equivalent experiences and level of knowledge.

1.6.2 Methodology

This study investigated participant's mental toughness based only on structured questionnaires. Though every effort was made to ensure participants gave true and honest responses, the validity of their views cannot be established. It was difficult to find out whether each of the participants was able to articulate their feelings honestly and accurately. To minimize the effect, the researcher explained and requested the participants to answer the questionnaire as accurately and truthfully as possible.

1.6.3 Pre and post design

This design was exposed to central tendency effects where the participants may try to score lower in the pre-test in order to score maximum changes in the post test-scores (Thomas & Nelson, 1999). To minimize this effects, no mention of the post-test was made at the pre-test session.

1.6.4 The implementation of outdoor adventure camp

The data was collected from two different camps organized by two different campuses of UiTM. Hence, the result might vary depending on personnel administering the



camps, teaching strategies and the extent of task completion. In order to reconcile these differences, the researcher attended all camps and made notes of the differences.

1.7 Definition of Terms

i. Mental toughness

Mental toughness refers to a consistency or persistency to achieve the goal despite in the tough, pressure or difficult situation (Middleton et al., 2004a).



ii. Outdoor adventure

Outdoor adventure refers to a self propelled activities performed in outdoor settings and involved element of danger, risk taking, challenge, sensation seeking, achievement, competence and one's skills (Viriden, 2006, p.310).

iii. Outdoor Recreation (SPS133) Final Camp 2011

Outdoor Recreation (SPS133) Final Camp 2011 refers to outdoor adventure program, where participants spend at least seven days outdoors. It is a subject's (SPS133) final project and requires compulsory participation by students.



iv. Diploma in Sport Studies

Diploma in Sport Studies refers to the academic course offered by UiTM. It primarily focuses on the scientific study of sports, games, leisure and recreation.

v. First year undergraduate students

First year undergraduate students refer to the first year undergraduate diploma students (intake of November-March 2010/2011) who are enrolled in UiTM.