

EFFECTS OF PRETESTING WITH THE ADVENTURE RECREATION MODEL INSTRUMENT

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Abstract: The Adventure Recreation Model, first proposed and tested by Ewert and Hollenhorst (1989), attempts to describe participant characteristics and patterns of use in adventure recreation activities. The Adventure Recreation Model is based on the relationship of level of engagement in an outdoor recreation activity (ranging from beginner, to development, to commitment) with the variables of personal attributes of the participant (i.e., frequency of participation, skill/experience level, decision-making locus of control, and motivation factors) and activity/setting attributes (i.e., level of risk, social orientation, and environmental orientation). Because the Adventure Recreation Model is based on a developmental approach (i.e., movement from beginner to commitment), it would be desirable to use the Adventure Recreation Model instrument to measure changes in groups of participants before and after outdoor experiences. However, the instrument needs to be tested to determine the effects of exposure to the pretest. The purpose of this study was to determine if exposure to the Adventure Recreation Model instrument as a pretest had an effect on posttest scores on the instrument. Results showed that, overall, the instrument did not appear to have a pretest effect, with the exception of four out of 30 of the variables measured.

Introduction

The Adventure Recreation Model, first proposed and tested by Ewert and Hollenhorst (1989), attempts to describe participant characteristics and patterns of use in adventure recreation activities. According to Ewert (1989), the adventure model is based on the notion that the "seeking of risk and uncertainty of outcome" (p. 8) differentiate adventure recreation pursuits (e.g., rock climbing and backpacking) from other forms of outdoor recreation (e.g., hunting and fishing). The Adventure Recreation Model is based on the relationship of level of engagement in an outdoor recreation activity (ranging from beginner, to development, to commitment) with the variables of personal attributes of the participant (i.e., frequency of participation, skill/experience level, decision-making locus of control, and motivation factors) and activity/setting

attributes (i.e., level of risk, social orientation, and environmental orientation). Because the Adventure Recreation Model is based on a developmental approach (i.e., movement from beginner to commitment), it would be desirable to use the Adventure Recreation Model instrument to measure changes in groups of participants before and after outdoor experiences. However, the instrument needs to be tested to determine the effects of exposure to the pretest. The purpose of this study was to determine if exposure to the Adventure Recreation Model instrument as a pretest had an effect on posttest scores on the instrument.

Overview of the Adventure Recreation Model

According to Ewert and Hollenhorst (1989), the Adventure Recreation Model is based on the personal attributes of the participant, such as frequency of participation, skill/experience level, decision-making locus of control, and motivation factors, and on the activity/setting attributes, such as level of risk, social orientation, and environmental orientation. The model is reconstructed in Figure 1 to show how the participant and activity/setting attributes relate to each other. As can be seen in the model, participants are divided into categories of Introduction, Development, or Commitment based on their level of engagement in outdoor adventure. The Adventure Model suggests that as engagement level increases:

- skill level increases
- frequency of participation increases
- locus of control becomes more individualized
- preferred risk level increases
- preferences for natural conditions increase
- social context moves to solitary or expert-only groupings
- motivations of challenge, achievement, and risk taking increase or prevail.

The model allows for classification of participants based on their experience level. This classification, in turn, is related to the level that users experience, perceive, or desire in other elements of the outdoor adventure experience. The model, in theory, could help managers more closely target and/or manage programs and resources that are suitable for the participant. On a more theoretical level, the model could help researchers understand adventure recreation behavior.

Testing the Adventure Recreation Model

Attempts to more fully understand adventure recreation behavior have been a consistent theme in the research literature in the recreation field. Although Ewert and Hollenhorst first published the Adventure Recreation Model in 1989, earlier research had led to its development. In an earlier study, Ewert (1985) examined the relationship between participant motivations for mountaineering and their level of experience. He found that type of motivation (intrinsic or extrinsic) differed for participants, depending on their self-reported level of experience in the activity. More experienced participants tended to have more

intrinsic motivations and inexperienced participants more extrinsic motivations for mountaineering. The results of this study led to the development of a more complex model, in which type of motivation was one variable among several others associated with adventure recreation. This model, the Adventure Recreation Model, was presented by Ewert (1989), and tested by Ewert and Hollenhorst (1989). According to Ewert (1989), the adventure model was based on the notion that the "seeking of risk and uncertainty of outcome" (p. 8) differentiates adventure recreation pursuits (e.g., rock climbing and

backpacking) from other forms of outdoor recreation (e.g., hunting and fishing). Further, Ewert and Hollenhorst (1989) contended that models addressing recreation or outdoor recreation participation inadequately explained or even addressed the *risk-seeking* dimensions adventure experience and adventure activities (p. 127). Their 1989 study found support for the proposed adventure recreation model (Figure 1). The model was effective in identifying components of the outdoor adventure experience that were highly correlated to level of engagement in the adventure activity (described in more detail below).

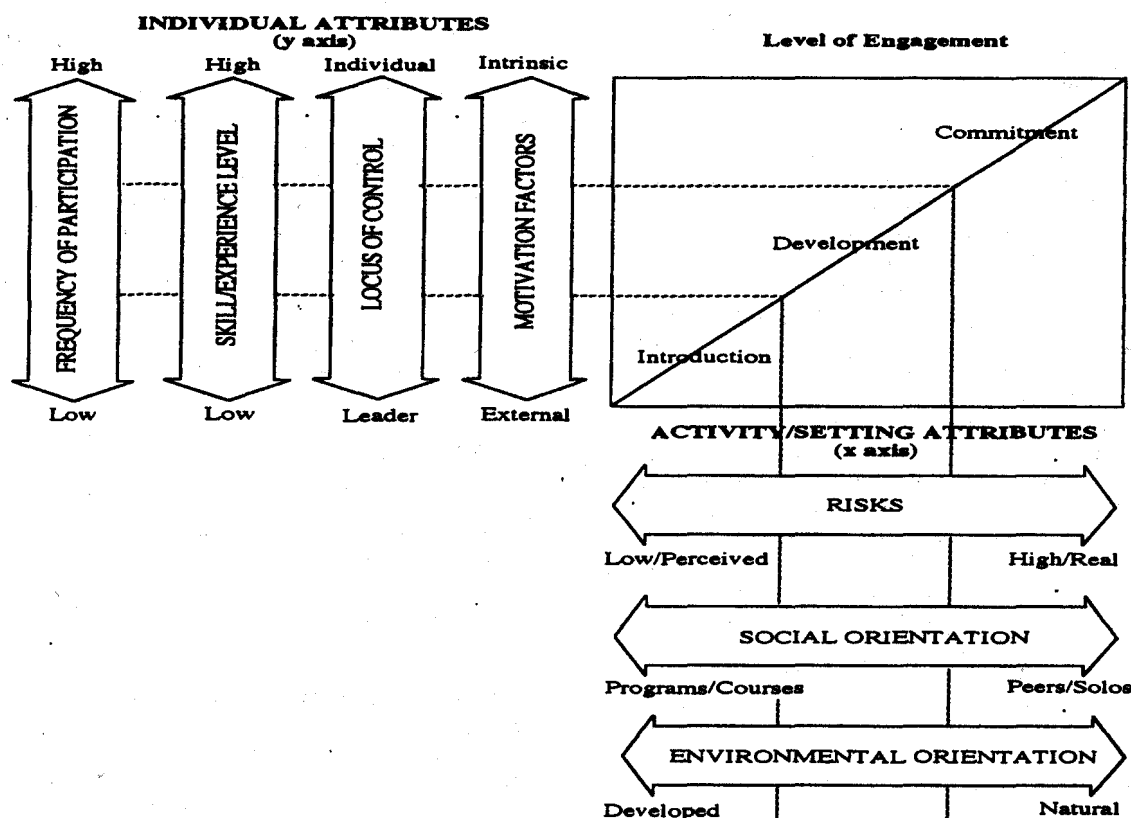


Figure 1. The Adventure Recreation Model by Ewert & Hollenhorst (1989)

Though strong support for the model was found, continued testing of its validity was suggested. Subsequent assessments have generally, but not identically supported the model. Schuett (1992) tested a revised adventure model, using slightly different variables, and reported support for that model. Priest (1992) proposed and tested an alternative model, "The Adventure Experience Paradigm," (p. 128), based on the concepts of risk and competence. His findings also provided support for the concepts in Ewert and Hollenhorst's (1989) original model. The most thorough follow-up study was done by Anderson, Anderson, and Young (2000). Using Ewert and Hollenhorst's model and instrument, the original study was

replicated with a group of subjects who were more diverse in their motivations to participate in outdoor adventure and in their professed levels of engagement. Like the original study, more recent study found relationships between engagement level and all user attributes and between level of engagement and the setting attributes of risk level and type of environment. Unlike the original study, Anderson, Anderson, and Young found nine, not two motivations for participation to correlate with level of engagement.

Through continuing replication efforts, the building of a viable adventure model may be achieved. There are several benefits of having a viable adventure model. First, it would

provide a clarified conceptual understanding of adventure recreation. Second, the model could help resource managers to understand and justify the need to provide a diversity of recreation and adventure recreation opportunity settings. Third, a sound adventure model could guide adventure programmers in tailoring their programs' settings, social contexts, and risk levels to participants' level of engagement in the activities. According to Priest (1992), resource managers and other outdoor recreation service providers could provide a spectrum of recreation opportunities, which would accommodate varying levels of skill and ability. Being able to match users to the settings and programs that best meet their needs would assist managers in providing higher quality experiences and environments. Fourth, as the model undergoes validation and refinement, a new possibility emerges—using the instrument to measure changes or differences in participants over time or stemming from programmatic interventions. Adventure educators might use the Adventure Recreation Model instrument in various quasi-experimental designs to determine the effects of their programs. Because such uses of the instrument will often involve repeated testing of participants, it is important to determine whether the simple exposure to the instrument as a “pretest” affects posttest responses. Hence determining if there are “testing effects” is the purpose of the present study.

Methods

The purpose of this study was to determine if exposure to the Adventure Recreation Model instrument as a pretest had any effects on posttest scores on the instrument. The null hypothesis stated that there would be no significant difference between those students who completed both the pre- and posttest and those who completed the posttest only on the Adventure Recreation Model instrument.

Subjects for this study were 129 undergraduate recreation majors from two separate, but similar summer session Outdoor Education Practicum courses. The subjects ranged in age from 19 to 42 with an average age of 22.5. Fifty-six percent were females, 44% males.

For this study, the required course taken by these subjects was simply a context and not treatment variable. Still, a few words about that context might be helpful. The thirteen-day course included seven days in a camp-like resident outdoor education setting, with amenities, dining facilities, and a structured program. The course also included a six-day wilderness canoe trip in New York State's Adirondack Park.

This study employed the true experimental posttest only control group design (Gay, 1992). In each summer session, half the students were randomly chosen to complete the Adventure Recreation Model instrument at the beginning of the outdoor education practicum. All students completed the posttest administration of the instrument. As depicted in Figure 2, the “treatment” in this experiment was completing the Adventure Recreation Model Instrument as a pretest.

Figure 2. Posttest-only Control Group Design

R	X	O
R		O

R = Random Assignment

X = Adventure Recreation Model Instrument before course

O = Adventure Recreation Model Instrument taken post course

The instrument includes items to measure the variables of level of engagement, user attributes (skill level, locus of decision-making), setting attributes (type of environment, preferred level of risk, social orientation), and 18 motivations for participation. The questionnaire used a nine point Likert scale, to which subjects responded for each item on the questionnaire. These items are presented in Table 1.

The data were analyzed with SPSS 9.0. The two groups, those who were pre- and posttested, and those who were posttested only, were compared on each variable using independent t-tests for interval data and Chi Square for nominal data. A .10 level of significance was chosen because in this type of study, Type II (beta) errors are more worrisome. The conventional .05 level might prompt the claim of no pretest effects when, in fact, there are such effects.

Results

As can be seen in Table 2, there were no significant differences between the experimental and control group in relation to age, gender, and their frequency of participation in outdoor adventure experiences. Given the lack of difference between the experimental and control groups, it can be assumed that extraneous variables were controlled for by randomization, and that if there are any differences on the dependent variable, they would be due to the pretesting, or experimental condition.

As can be seen in Table 3, the results showed that for 26 variables measured on the Adventure Recreation Model questionnaire, there were no significant differences found between the group that was pretested and the group that was not. Four variables, level of engagement, skill level, participation with friends, and skill development motivation, were significant at the .1 level (but not at the .05 level). The pretested group had a slightly higher mean score (5.8) on level of engagement than the nonpretested group (5.2). The pretested group also had a higher score on skill level (5.5) than the nonpretested group (5.0). The nonpretested group had a slightly higher score on the social orientation/friends variable (7.5) than the pretested group (6.9). On the motivation variable to develop skills, the pretested group scored higher (7.2) than the nonpretested group (6.7).

Table 1. Items on the Adventure Recreation Model Instrument (Ewert & Hollenhorst, 1989)

1. As an outdoor adventurer, I would consider myself to have had....(little or no experience a great deal of experience)
2. As an outdoor adventurer, I would consider myself to be a(n) ... (beginner with little or no skill expert, highly skilled)
3. How many adventure experiences have you had in the last two years? (none ... more than 10)
4. Regarding most of your outdoor adventure experiences, decisions are usually made by... (others myself)
5. Regarding your recent outdoor adventure experiences, the level of risk you preferred in the activity was ... (low ... high)
6. Regarding your recent adventure experiences, most of the risks in these experiences have been primarily... (social ... physical)
7. Regarding your recent outdoor adventure experiences, the environment in which they occurred was ... (man-made ... natural)

Regarding most of your adventure experiences, with whom do you participate?

1. Friends
2. Programs/Classes
3. By myself
4. Peers of similar skill/experience
5. Teachers/mentors

Regarding your adventure experiences, how important are the following reasons for participating?

- | | |
|---|--------------------------------------|
| 1. to develop skills | 11. to enhance my feelings of myself |
| 2. to make friends | 12. because of requests by others |
| 3. for my image in society | 13. to socialize |
| 4. to do something new/different | 14. to take risks |
| 5. for physical fitness | 15. for excitement and stimulation |
| 6. for the personal challenge | 16. to experience a sense of control |
| 7. for the competition (with others or environment) | 17. for feelings of achievement |
| 8. to experience nature | 18. for status among my peers |
| 9. for fun and enjoyment | 19. to express my creativity |
| 10. for my career/job | |

Table 2. Comparison of Characteristics of the Experimental (Pretest/Posttest) Group with the Control (Posttest Only) Group

Variable	Test Used	Descriptive Statistics	Statistic	Significance
Age	Independent t-test	<u>Pretest/Posttest Group:</u> Mean = 22.9; SD = 4.9 <u>Posttest Only Group:</u> Mean = 21.9; SD = 4.1	t = 1.233	p = .22
Gender	Chi-Square	<u>Pretest/Posttest Group:</u> Female = 39; Male = 34 <u>Posttest Only Group:</u> Female = 35; Male = 23	$\chi^2 = .630$	p = .43
Frequency of participation	Chi-Square	<u>Pretest/Posttest Group:</u> No trips = 1 1-2 trips = 15 3-6 trips = 25 7-10 trips = 10 More than 10 trips = 9 <u>Posttest Only Group:</u> No trips = 1 1-2 trips = 14 3-6 trips = 20 7-10 trips = 9 More than 10 trips = 11	$\chi^2 = .626$	p = .96

Table 3. Comparisons of the Experimental (Pretest/Posttest) Group with the Control (Posttest-Only) Group on Each Variable in the Adventure Recreation Model Instrument

Variable	Pretest/Posttest Group		Posttest Only Group		t value	Significance (*.1 level)
	Mean	SD	Mean	SD		
User Attributes:						
Level of engagement	5.8	1.8	5.2	2.0	1.790	.076*
Skill level	5.5	1.6	5.0	1.8	1.679	.096*
Locus of decision-making	5.5	1.4	5.4	1.8	.664	.508
Setting Attributes:						
Level of risk	6.1	1.5	5.9	1.8	.928	.355
Type of risk	5.5	1.6	5.5	1.3	.155	.877
Type of environment	7.1	1.7	6.7	1.6	1.468	.145
Social orientation – friends	6.9	1.7	7.5	1.9	-1.872	.064*
Social orientation – classes	5.4	1.9	5.0	2.1	1.254	.212
Social orientation – self	3.8	2.3	3.6	2.3	.382	.703
Social orientation – peers	6.1	1.8	5.6	1.9	1.576	.117
Social orientation – teachers	4.4	2.0	4.0	2.3	1.064	.289
Motivations for Participation:						
To develop skills	7.2	1.5	6.7	1.6	1.808	.073*
To make friends	6.6	1.9	6.7	1.6	-.386	.700
For the image	3.2	2.0	3.1	2.1	.073	.942
For novelty	7.5	1.1	7.3	1.6	.924	.357
For physical fitness	7.0	1.6	7.1	1.5	-.347	.729
For the challenge	7.7	1.3	7.8	1.3	-.296	.768
For the competition	4.9	2.2	5.2	2.5	-.877	.382
To experience nature	7.4	1.4	7.2	1.8	.647	.519
For fun and enjoyment	8.1	1.1	8.4	.9	-1.570	.119
For career/job	6.0	2.3	6.3	2.0	-.864	.389
For feelings of self-esteem	6.6	1.9	6.8	1.9	-.642	.522
Requested by others	4.0	1.9	3.6	2.1	1.210	.228
To socialize	5.9	2.0	5.8	1.8	.476	.635
To take risks	6.4	1.8	6.1	1.8	.939	.349
For the excitement	7.5	1.3	7.1	1.6	1.266	.208
To experience control	5.8	1.8	5.4	2.1	1.058	.292
For a sense of achievement	7.4	1.3	7.3	1.5	.365	.716
For status	3.2	1.8	3.3	2.0	-.140	.889
To express creativity	6.2	2.0	5.8	2.1	1.055	.293

Discussion and Recommendations

This study found that exposure to the pretest did not appear to influence resultant scores on the posttest with the exception of the four variables identified above. For these four out of 30 variables, there is a greater probability for pretest effects. Three of these four variables were related to skill level or skill development. Subjects who take the pretest may be made more aware of their skill level as a result of the questions on the pretest.

Based on these findings, it is recommended that the Adventure Recreation Model instrument be used to measure changes in participants using pretesting. By using the instrument in this manner, more rigorous testing of the Adventure Model can occur, due to its developmental approach. However, further study of pretesting effects is in order, particularly with the variables that assess skill. The pretest may cause a sensitization of skill assessment on the part of subjects. In the meantime, using the instrument in pretest/posttest studies may proceed, but with caution in interpreting at least these four items in the instrument.

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