

Summative Evaluation of  
*Everest*

*An IMAX<sup>®</sup> Dome Film and Associated Educational Resources*

Adult Audience Study

Report for

**McGillivray Freeman Films**

Laguna Beach, California

by

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# Summative Evaluation of *Everest*

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### Introduction

With major funding from the National Science Foundation and sponsorship by the Everest Film Network, MacGillivray Freeman Films has produced an IMAX® Dome film titled, *Everest*. The film, with a runtime of approximately 40-minute, follows a team of world-class mountain climbers as they journey to the summit of Mt. Everest. The summative evaluation reported here focused on the following major outcomes:

- To what extent did the film appeal to adult viewers?
- To what extent did the film achieve its intended viewing goals?
- What did viewers perceive that they learned from the film, if anything?
- Did viewing the film influence the audience beyond the museum visit?

### Summative Evaluation Design

A quasi-experimental separate-sample pretest/posttest design was used to evaluate the film in its natural theater setting. Over a period of six days at the Boston Museum of Science's Mugar OMNI Theater, researchers asked randomly chosen adults, stratified by gender, to complete questionnaires. A random sample was surveyed prior to viewing the film and a different random sample was surveyed after viewing. Several characteristics of the population and treatment (i.e., the IMAX® film) led to the decision to use this design, which Campbell and Stanley (1963) refer to as Design 12.

First, the population to which we wish to generalize are self-selected museum visitors whose intention is to view an IMAX® Dome film. Locating an equivalent control group who would not view the film was virtually impossible. There were no comparable museum visitors from whom the treatment (the film) could be withheld. The best control group was a sample of museum visitors who intended to view the film but had not yet done so.

Secondly, we could not assume that the scientifically predisposed museum visitors would be unfamiliar with the film content, thus it was important to include a pretest that established what the audience knew prior to seeing the film. Pre-testing and post-testing the same sample, however, was not an acceptable procedure, because the pretest almost certainly would sensitize the audience to the content of the film and affect their posttest results. The separate-sample design controls for the main and interactive effects of testing. One group is tested prior to seeing the film and a randomized equivalent group tested after seeing the film.

Third, random sampling was logistically simple in the theater environment where the audience lines up before show time. Randomization was used to eliminate systematic bias between the pre-viewing sample and the post-viewing sample. As argued by Campbell and Stanley (1963), "the most adequate all-purpose assurance of lack of initial biases between groups is randomization" (Page 25).

Finally, the drawbacks of this design, in general, are its failure to control for history, maturation, mortality and the interaction of these. However, in this specific case, where the film treatment is only 40 minutes long and the adult audience is virtually captive, there is little chance of changes in groups due to history, maturation, or mortality; thus, these are non-issues for this evaluation.

In conclusion, the separate-sample pretest-posttest design was considered the strongest approach for evaluating the IMAX® Dome film in the natural theater setting with a random sampling of the population of movie-goers. This research design was found effective in evaluating the IMAX® Dome films *Stormchasers* (Flagg & Johnson, 1996) and *Special Effects* (Flagg & Johnson, 1997), and was applied to *Everest* to add to our baseline knowledge about effects of large format films.

## Method

### Sample

The population from which the sample was randomly chosen was comprised of audience members 18 years of age or older who stood in the waiting line to view *Everest* during a period of six days in April, 1998. Single adults accompanied by children below the age of five and adults who were part of a group of five or more were excluded.

Of the 441 adults who were randomly selected to participate in the evaluation, 5 people declined responding to the pre-viewing questionnaire because of ongoing conversations with spouse/friends or attending to a child. Additionally, 11 people declined responding to the post-viewing questionnaire because of prior commitments. Another 14 adults initially agreed to participate but did not carry through after viewing; they slipped by the researchers on their way out, even though bright orange labels were placed on their clothing in order to aid identification. Thus, about 6.8% of the adults who were approached did not participate in the evaluation.

Additionally, of the questionnaires collected, 8 (1.8%) were not included in the analysis for a number of reasons: either the respondents were not over 18, elicited answers from another person or left most of the questionnaire blank. Thus, the total number of usable questionnaires (N=403) included 204 pre-viewing questionnaires and 199 post-viewing questionnaires.

Researchers recruited over a period of 5 non-holiday weekdays and 1 weekend day, eliciting questionnaires during 15 weekday shows and 3 weekend shows. Weekend respondents represented 40.6% of the final sample. Information from demographic and background questions was used to determine whether the randomization worked well in equalizing the pre and post-viewing groups and whether the two independent samples should be looked at as having come from the same population. Chi-square analyses revealed that the Viewing Groups (pre and post) did not differ significantly with respect to the classifications of gender, ethnicity, age group, education, and the number of IMAX® films ever seen. The distribution of the sample on these classification variables is presented in Table 1, on the following page.

For the sample as a whole, the classification variables of gender, age group, education, occupation, and number of IMAX® films seen were fairly equally distributed across the categories. The sample was overwhelmingly white, so ethnicity was not analyzed further in the data analyses.

Table 1. Non-significant Demographic and Background Variables

Variable	N	Categories	Percent
Gender	403	Female	50.6%
		Male	49.4%
Ethnicity	403	White	98.0%
		Minority	2.0%
Age Group	401	18-27	9.7%
		28-37	23.3%
		38-47	30.9%
		48+	35.4%
Education	401	Some high school	1.0%
		High school	16.8%
		College graduate	40.6%
		Post graduate	36.9%
		Technical/Trade	4.1%
Occupation	403	Related to science	36.2%
		Not related to science	64.0%
Number of IMAX® films ever seen	402	This is my first film.	25.0%
		One other film.	19.3%
		2-3 other films.	25.6%
		Four or more films.	29.5%

**Interviewed Sample.** Each of the pre and post-viewing respondents were asked if they were willing to be interviewed by telephone one week later. Approximately 47% provided their names, telephone numbers and suggested times for a follow-up interview; this group included 50.5% of the pre-viewing sample and 44.2% of the post-viewing sample. Only those with telephone numbers in Massachusetts were called about one week after their museum visit. The first 15 males and 15 females to be reached successfully by telephone constituted the interviewed sample.

## **Procedure**

The sample was selected from adults as they lined up in front of the doors of the Mugar OMNI Theater. Using random numbers to determine which museum visitors over 18 years of age were eligible for selection, the researchers alternately approached men and women and recruited them to complete a pre-viewing questionnaire for *Everest* or, alternately, to remain after viewing the film and fill out a post-viewing questionnaire. Respondents were told that the questionnaires were to provide the producers of *Everest* with audience feedback and that they were to answer the questions without receiving help from other people in their group.

The pre-viewing questionnaires required about ten minutes and were completed on clipboards as respondents stood in line at the entrance doors. Questions on the pre-viewing questionnaire focused on demographic variables, background classification variables, and pre-viewing knowledge about the film's topics.

Those selected to complete a post-viewing questionnaire were provided with orange sticky labels to help identify them in the exiting crowd. The post-viewing questionnaires were completed at tables set up near the exit doors, and they required from ten to twenty minutes to complete, depending upon how thoughtful the respondent chose to be. Questions on the post-viewing questionnaire included the pre-viewing questions of demographics, background, and knowledge about the film's topics. In addition, the questionnaire assessed viewers' reactions to the program (as described below).

One researcher collected data at all of the 18 shows surveyed (15 weekday and 3 weekend shows) and another researcher collaborated in collecting data at 8 of the weekday shows. On average, researchers collected 23 questionnaires per show during the weekday and 19 questionnaires per show during the weekend.

For the follow-up telephone interview one week later, only those respondents available in Massachusetts were called at their suggested times. One researcher handled the telephone interviews and tried each number at least three times before dropping an individual from the list. The first 15 males and 15 females to be reached successfully were interviewed. The telephone interviews were approximately eight minutes, depending upon the garrulousness of the respondent. The interviews concentrated on assessing whether the IMAX® visitor had taken actions related to the film in the week after viewing (as described below).

## **Questionnaires**

***Demographic and Background Variables.*** Both the pre-viewing and post-viewing questionnaires established respondents' status with respect to five demographic classification variables (gender, age group, ethnicity, education, and occupation) and one background classification variable (number of IMAX® films ever seen).

***Program Appeal.*** Post-viewing respondents chose one of five scaled statements to indicate how interesting or boring they found *Everest*. Similarly, viewers were asked to select one of four statements that expressed the degree to which the film compared to their expectations. Additionally, viewers were asked to specify what they liked and did not like about the film, and why. They were also asked to respond to two sentence completion items: "I was surprised . . ." and "I was most disappointed . . ."

***Knowledge About Film Topics.*** Both the pre-viewing and post-viewing questionnaires included a knowledge test to assess understanding of the film's educational content. Six short answer questions comprised a test about the following topics covered in the 40-minute film. The questions and answers drawn from the film's content appear below.

1. What does the word "acclimatizing" refer to?
2. What is the height of Mount Everest?
3. Describe how the peak of Mount Everest and the Himalayas were formed.
4. Approximately how much oxygen is there at the top of Mount Everest compared to at sea level?
5. Why can't a helicopter fly to the top of Mount Everest?
6. What does the term "plate tectonics" refer to?

Those who viewed the film responded to an additional open-ended content question: Describe one idea or fact learned from *Everest*.

***Influence of the Film Beyond the Museum Visit.*** The telephone interview, conducted one week following subjects' viewing of the film, asked whether the respondents had discussed the film with anyone immediately after viewing or within the last week, whether they had recommended the film to anyone, whether they had purchased anything from the museum store, whether seeing *Everest* had affected anything they had thought about or done in the preceding week, or whether they had read anything or seen anything on television that made them think of the film. With any affirmative response, the interviewer asked the respondent to explain further.

<b>Results</b>
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Appeal of *Everest*

After seeing the film, respondents were asked to rate how interesting or boring *Everest* is (see Table 2). Approximately 91% of the sample rated the film as "Very Interesting." Another 7.5% of the sample rated the film as "Moderately Interesting" and 2.0% rated it as "Okay." None of the respondents thought the film was boring.

Table 2. Rating of Appeal of *Everest* by Post-Viewing Sample

Variable	N	Categories	Percent
Appeal	199	Very Interesting	91.0%
		Moderately Interesting	7.5%
		Okay	2.0%
		Moderately Boring	0.0%
		Very Boring	0.0%

Appeal ratings were found to be independent of gender, age group, education, occupation, and number of IMAX® films ever seen.

***What Viewers Liked Most About Everest.*** After viewing the film, half of the post-viewing respondents were asked what they most liked about *Everest* and why. All of the 199 viewers who were asked to respond to this question provided an answer. Responses were sorted into the categories presented in Table 3, on the following page. About one-quarter of the sample (25.6%) reported liking the film's cinematography most. Nearly one-quarter of the surveyed audience (24.1%) liked *Everest* because of the educational value of its content. The film's experiential qualities were most appealing to 20.1% of the sample viewers. Approximately 17.1% liked the film's story. Another 8.5% liked the film's inspirational qualities. About 4.5% of the sample reported liking everything about the film.

Table 3. What Viewers Liked Most About Everest

<b>Cinematography</b>	<u>N</u>
• Film of expedition members climbing Mt. Everest	38
• Film of scenery	6
• Film of bicycle ride	5
• Film of flying across terrain	1
• Film of Buddhist rituals	<u>1</u>
	<b>51</b>
<b>Educational Value of Film Content</b>	
• Information about mountain climbing and/or mountain climbers	30
• Information about how mountains are formed	12
• Facts about Mt. Everest	<u>6</u>
	<b>48</b>
<b>Experiential Qualities</b>	
• Vicarious experience of climbing Mt. Everest	22
• Relating to climbers' / cinematographers' perspective of expedition	<u>18</u>
	<b>40</b>
<b>The Story</b>	
• The story of the expedition and the problems encountered	<b>34</b>
<b>Inspirational Qualities</b>	
• The knowledge/skill required to climb Mt. Everest	11
• The courage of the climbers	3
• The "power" of Mt. Everest	2
• The qualities displayed by the Sherpas	<u>1</u>
	<b>17</b>
<b>Everything</b>	
• The story of the expedition and the problems encountered	<b>9</b>

**What Viewers Liked Least.** After the film, visitors were asked what they liked least about *Everest* and why. Of the 199 viewers who were asked to respond to this question, approximately three-fourths (94.0%) provided an answer. About one-third of these responses (33.2%) indicated that there was nothing about the film that the respondent did not like. For example, one respondent wrote "I enjoyed the whole movie!" Another respondent commented "The film was excellent!" A third respondent answered "It was all good." Many others expressed the feeling "I liked everything about the film."

Responses indicating a disliked feature were sorted into categories presented in Table 4, on the following page. One-third (33.2%) of the respondents liked everything about *Everest*. In contrast, about one-quarter (25.6%) felt the film's story was incomplete. About 15.1% of the responses expressed the feeling that there wasn't enough action (e.g., more of the climbing should have been shown). Another 10.1% thought that too much attention was given to the climbing tragedy. Approximately 4.5% of respondents were displeased with the OMNI theater's accommodations (e.g., poor view from seat location). Similarly, 4.5% were annoyed by the projection quality (e.g., lint on projection lens, scratch on screen). About 1.0% of responses expressed the feeling that the film could have made better use of the IMAX® Dome format.



Table 4. What Viewers Liked Least About Everest

<b>Liked Everything</b>	<u>N</u>
• Liked everything about <i>Everest</i>	54
• The film doesn't need any changes	<u>12</u>
	<b>66</b>
<b>Incomplete Story</b>	
• Footage of the final assault was incomplete	26
• Not enough details about mountain climbing	12
• Not enough information about the film's production and crew	11
• The story about the fatalities was not finished	<u>2</u>
	<b>51</b>
<b>Not Enough Action</b>	
• The film should have shown more climbing/ action	<b>30</b>
<b>The Climbing Tragedy</b>	
• The fatalities resulted from avoidable circumstances	13
• Too much of the film was focused on the fatalities	<u>7</u>
	<b>20</b>
<b>OMNI Theater Accommodations</b>	
• Poor view from seat location	7
• Experienced nausea resulting from motion on screen	<u>2</u>
	<b>9</b>
<b>Projection Quality</b>	
• Defects in projection were discernable (e.g., lint on projection lens)	<b>9</b>
<b>Limited Use of IMAX® Dome Format</b>	
• Film did not exploit capabilities of IMAX® Dome theater	<b>2</b>

**How the Film Did or Did Not Meet Expectations.** Post-viewing respondents were asked to choose from a selection of four statements the one that best described how *Everest* compared to their expectations. Responses were received from 198 (99.5%) of these viewers. As illustrated in Table 5, on the following page, about 11.6% of the sample reported having no expectations before seeing the film. Two members of the sample felt that *Everest* did not meet their expectations. The following comments were offered as explanations for why the film had not met their expectations:

The film did not meet my expectations because...

- "it didn't show enough of difficulty climbing. It showed some, but I would have liked more."
- "lack of summit footage."

In contrast, 49.3% reported that the film did meet their expectations and 38.7% reported it exceeded their expectations. Thus, 88% of the post-viewing sample felt that *Everest* had met or exceeded their expectations. One respondent, for example wrote a comment that the "The film exceeded my expectations – and I had extremely high expectations."

Table 5. How Everest Compared to Viewer Expectations

N	Categories	Number	Percent
198	I had no expectation before seeing the film	23	11.6%
	The film did not meet my expectations.	0	0.0%
	The film met my expectations.	98	49.3%
	The film exceeded my expectations	77	38.7%
	No response	1	0.5%

**What Surprised Viewers.** In order to capture unplanned appeal effects, the post-viewing sample was asked to complete the sentence, “I was surprised . . .” Responses were sorted with keywords and the number of responses in each mutually exclusive category are presented in Table 6. Approximately 8% of the sample wrote no answer to the question. More than one-quarter (28.6%) of the sample were surprised by information contained in *Everest*. Another 15.6% were surprised by the complexity of an expedition. About 3.0% were surprised by what was felt to be a limited amount of action footage on climbing. About 17.6% were surprised by their emotional reaction to the film’s content. A similar percentage (17.1%) were positively surprised by the quality of the film. About 4.5% were surprised that they felt motion sickness due to large motions on the screen. Slightly more than 3% reported being surprised by the scenic beauty of Mt. Everest. About 2.5% of the sample indicated that they were surprised by everything in Everest.

Table 6. Respondents’ Completion of “I was surprised . . .”

<b>Factual Information</b>	N
• About how Mt. Everest was formed	15
• About climbing Mt. Everest	20
• About avalanches	12
• About acclimatizing	10
	<u>57</u>
<b>The Expedition</b>	
• The complexity of the expedition	31
• The limited amount of action footage on climb	6
	<u>37</u>
<b>Viewers’ Emotional Reaction</b>	
• Reaction to fatalities	20
• Reaction to human sacrifice for others	10
• Reaction to climbers experience	5
	<u>35</u>
<b>Film Quality</b>	
• How realistic the film was	14
• How interesting, absorbing, engaging the film was	12
• How tastefully the film was produced	5
• The excellent quality of the cinematography	3
	<u>34</u>
<b>Motion Sickness</b>	
• Experiencing nausea due to motion on screen	9
<b>Scenery</b>	
• The scenic beauty of Mt. Everest	6
<b>Everything</b>	
• Everything in <i>Everest</i> was surprising	5

**What Disappointed Viewers Most.** Survey respondents also completed the sentence stem: “I was most disappointed . . . .” Responses were sorted with keywords and percentages of each mutually exclusive category are shown in Table 7 below. Approximately 40.2% of the sample wrote no answer to the question. About 19.1% of the sample indicated that nothing about the film was disappointing. Other members of the sample (18.1%) felt that the film is too short. A slightly smaller percentage (17.6%) reported that they were disappointed that the film had not contained more information. A few members of the sample (2.0%) found the project quality (e.g., lint on the lens, scratch on the screen) to be disappointing. About 1.5% of the sample were disappointed that the film had not made more use of the IMAX® Dome format. Similarly, 1.5% reported being disappointed with the OMNI Theater’s accommodations (e.g., waiting time to see the film, seating location).

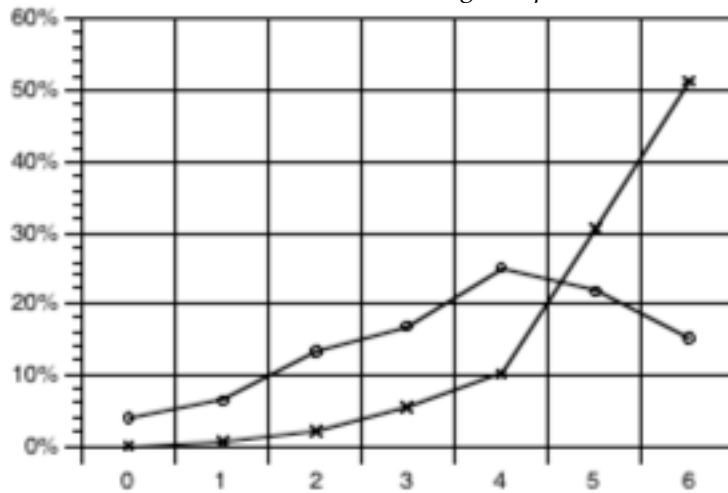
Table 7. Respondents’ Completion of “I was most disappointed. . .”

<b>Not Disappointed At All</b>	<u>N</u>
• Nothing about the film was disappointing	<b>38</b>
<b>Film Length</b>	
• The film is too short	<b>36</b>
<b>Information</b>	
• Want more information about expedition logistics (e.g., base camps)	10
• Want more information about mountain climbing	9
• Want more information about Buddhist people/beliefs	8
• Want more information about how the film was produced	5
• Want more information about the climbing tragedy	3
	<b>35</b>
<b>Projection Quality</b>	
• Defects in projection were discernable (e.g., lint on projection lens)	<b>4</b>
<b>Limited Use of IMAX® Dome Format</b>	
• Film did not exploit 3-dimensional capabilities of IMAX® Dome theater	<b>3</b>
<b>OMNI Theater Accommodations</b>	
• Waited too long to see film	<b>3</b>

### Impact on Knowledge

**Achievement of intended viewing goals.** Learning outcomes were assessed via a test with 6 short answer items. Figure 1, on the following page, shows the distribution of the test scores for both the pre-viewing and post-viewing samples.

Figure 1. Distribution of Test Scores for Pre- and Post-Viewing Samples



The mean achievement score for the pre-viewing group was 3.82 and for the post-viewing group, 5.22. The analysis of variance indicated that the means were significantly different,  $F(1, 401) = 114.72, p = .0001$ . Thus, the learning outcomes resulting from viewing *Everest* is statistically significant.

Additionally, examination of open-ended written answers to content questions reveals that post-viewing responses were more specific than the pre-viewing responses, especially with respect to how the Himalayas were formed. While there was a statistically significant increase in post-viewers knowledge about continental drift and the mechanism of mountain building in the Himalayas, these sample members did not appear to associate these processes with the term “plate tectonics.” An approximately equal number of pre-viewers (138) and post-viewers (136) were able to correctly specify what this term refers to.

With an interest in interaction effects, separate two-way ANOVAs on the scores were calculated for Viewing Group (Pre, Post) and individual demographic and background variables of Gender, Age Group, Education, and Occupation. None of the interactions were statistically significant.

**Ideas or Facts Learned.** Prior to completing the test section mentioned above, the questionnaire asked viewers to describe one idea or fact that they learned from the film. The majority of respondents (90.0%) provided one idea or fact. Nobody in the sample group said they had learned nothing new from *Everest*. The remaining sample members (10.1%) did not answer the question at all. The facts were sorted with keywords, and percentages of each mutually exclusive categories are shown in Table 8, on the following page.

Approximately 44.2% of the sample reported learning information associated with acclimatizing. Slightly more than 20.1% indicated that they learned information about the expedition and it’s climbers. About 18.6% of the sample said that they learned information about plate tectonics. Another 4.0% learned the height of Mt. Everest. Other members of the sample (2.5%) learned why a standard helicopter can’t

fly to the top of Mt. Everest. One respondent reportedly learned from the vicarious experience of climbing Mt. Everest.

Table 8. Ideas and Facts Viewers Reported Learning From the Film

<b>Information associated with “acclimatizing”</b>	<u>N</u>
• Climbers must ascend slowly to allow body to adjust to change in altitude	29
• There is less oxygen available to climbers as altitude increases	27
• Number of blood cells increases with increase in altitude	21
• Altitude sickness can result from oxygen depletion	<u>11</u>
	<b>88</b>
<b>Information about the expedition</b>	
• There have been a large number of fatalities on Mt. Everest	16
• Moving across ice fields on Everest requires the use of ladders	8
• Sherpas attribute spiritual qualities to Mt. Everest	5
• There are very few days each year that are suitable for climbing Mt. Everest	4
• Biographic information about members of the expedition	4
• Avalanches are a danger on Mt. Everest	1
• Yaks are used to carry equipment and supplies	1
• Four base camps were used in the expedition	<u>1</u>
	<b>40</b>
<b>Information associated with “plate tectonics”</b>	
• Constantly moving plates collide into each other	27
• The force of this collision pushes land masses upward to form mountains	<u>10</u>
	<b>37</b>
<b>The height of Mt. Everest</b>	
• Mt. Everest is the highest mountain on Earth	5
• Mt. Everest is 29, 028 ft.	<u>3</u>
	<b>8</b>
<b>Why a helicopter can’t fly to the top of Mt. Everest</b>	
• The air is too thin for the blades to lift a helicopter to the top of Mt. Everest	5
<b>Vicarious experience</b>	
• The sensation of climbing a mountain	1

### Influences Beyond the Museum Visit

Sixteen men and sixteen women participated in a telephone interview one week after viewing *Everest*. Of these 32 interviewees, 29 (81.3%) indicated that they had viewed the film with one or more friends / family and reported having discussed the film with their co-viewers immediately after the viewing *Everest* and with others during the following week. The 3 individual viewers indicated that they had discussed *Everest* with someone else within a day after their film viewing experience. During the week following their viewing, conversations about *Everest* were with relatives, friends or colleagues at work.

One-quarter of the interviewees (25.0%) reported buying something from the Museum of Science store after seeing the film; however, only one reported making a store purchase related to the film (an *Everest* cap). Interviewees were also asked if seeing *Everest* had affected anything they had thought about or done in the previous week. Nearly half (46.9%) of the respondents answered affirmatively. Four members of the sample explained that they climb and/or frequently take walking trips in the wilderness. For these individuals, *Everest* had inspired them to plan an outing in the near future. Similarly, three other individuals had been inspired to visit a book store or map store to find information about Mt. Everest or trekking through Nepal. One male rented a film

about a fictional climb of the Matterhorn in Switzerland. Another had been inspired to visit a camping supply store and to inquire about GPS devices. A female reported that she had looked to see if there were any PBS television programs about mountains or mountain climbing. Additionally, approximately two-thirds (62.5%) of the individuals interviewed agreed that something they had read or seen on television had made them think of *Everest*.

All of the interviewees' reported having had positive post-viewing discussions that expressed how interesting and informative they found *Everest*. They especially enjoyed the mountain climbing scenes and panoramas of Mt. Everest and Nepal. Eight of the interviewees indicated they would like to have seen more about the climbers making their final assault. Another seven reported wanting to have seen the film crew and how they accomplished their film feat. One gentleman commented that he had hoped to see David Breashears reflect on his experiences during the expedition.

Three interviewees indicated that they would like for the film to have been longer. There was a consensus of opinion that the film had not only captured and maintained their interest, but also created an appealing "you are there" feeling. Two interviewees, however, commented that they had expected to see more action. One female felt too much attention had focused on the climbing fatalities, given the length of the film and the vastness of a topic like Mt. Everest.

Each of the interviewees used superlatives such as "excellent," "wonderful," and "inspiring" to express feelings about their viewing experience. When asked if they had recommended to anyone to see *Everest*, twenty-seven (84.3%) said that they had. In their recommendation, the interviewees reported describing the film as "entertaining" (n=8), "interesting" (n=6), "informative" (n=6), "moving" (n=4), "fun" (n=3), "exhilarating" (n=2), and "majestic" (n=1). Two interviewees offered that they had made plans to see *Everest* a second time.

## Discussion

- *To what extent did the program appeal to adult viewers?*

Approximately 91% of the sample rated *Everest* as being "Very Interesting." Additionally, about 88% of the sample audience reported that *Everest* met or exceeded their expectations. Slightly more than one-quarter of the sample focused on the film's cinematography as the aspect they liked best about *Everest*. Another one-quarter of the sample identified the educational value of the film content as their most liked aspect of *Everest*. The film's experiential qualities were most appealing to about 20.1% of the sample. The film's story was most liked by 17.1% of the viewers surveyed. These findings counteract any superficial impression that the while entertaining, the film is without educational substance. In fact, 28.6% of the sample reported that they were surprised by the variety of information contained in *Everest*.

Only two individuals in the 199 member sample commented that the film had not met their expectations. When asked to specify why the film fell short of meeting their expectations, these individuals indicated that they would like to have seen more footage of the climbers, an event that few people have seen. About 17.6%, however, did report that they were disappointed that the film had not contained more information about expedition logistics, mountain climbing, Buddhist people/beliefs, how the film was produced, and the climbing tragedy. In contrast, 19.1% of the

sample felt that nothing about the film was disappointing. These findings reinforce the notion that it's difficult to strike a acceptable balance between the breadth and depth of educational content. This is especially true in light of the finding that 18% of the sample felt the film was too short.

- *To what extent did the program achieve its intended viewing goals?*

Viewing the film significantly increased viewers knowledge about acclimatizing, the height of Mt. Everest, continental drift and the role it plays in the formation of the Himalayas, how much oxygen there is at the top of Mt. Everest compared to at sea level, and why a helicopter has difficulty flying at very high altitudes. The pre-viewing mean test score was 3.82 out of 6 points compared with the significantly higher post-viewing mean score of 5.22. These scores did not show interactions with any of the demographic or background variables measured. Viewers of *Everest* also came away knowing more about climbing expeditions and the dangers associated with these endeavors. Similar findings have emerged from analyses of data collected during the student audience component of this summative evaluation. These findings are documented in a separate.

- *What did viewers perceive that they learned from the program, if anything?*

When asked what they had learned from the film, most viewers comments and test results focused on an increase in their knowledge about acclimatizing and mechanism associated with mountain formation in the Himalayas. Some of the other reported learning outcomes are rooted in the experiential nature of the film's viewing experience.

- *Did viewing the program influence the audience beyond the museum visit?*

Findings from telephone interviews indicate that all of the interviewees engaged in positive discussions about the film with other people during the week following their viewing of *Everest*. Nearly half of the individuals interviewed indicated that seeing *Everest* had in some way affected their activities or thinking during the same post-viewing period. Approximately two-thirds of the interviewees indicated that something they had read or seen on television had made them think of *Everest*. A little more than 84% of the 32 people who were interviewed reported that they had recommended to others that they see *Everest*.

In conclusion, *Everest* was reportedly very interesting to 91% of the audience, made a positive impact on their knowledge of topics presented in the film, and continued to influence nearly half of the sample audiences' activities and thoughts.

## References

- Campbell, D. T., & Stanley, J. C. (1966). Experimental and quasi-experimental designs for research. Reprinted from N. L. Gage (Ed.), Handbook of Research on Teaching. Chicago, IL: Rand McNally.