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## **In Our Own Backyard: Critical Theory and the Development of the San Jacinto Center for Environmental Education**

### **Abstract**

This research addresses the topic of nature centers from a critical theory perspective. This research assumed in part, the question: what are the characteristics of a functional and successful nature center that includes environmental education goals and programs? Nature center administrators from across the United States were surveyed and asked to share their opinions on this topic. Six overall characteristics pertaining to management and vision were identified through an exploratory mixed-method design. Other components of these characteristics were discovered during the analysis of the data, and include factors such as approaches to education. Recommendations for improving nature centers and their programs are also discussed.

### **Keywords**

critical theory, environmental education, science education, STEM education

### **Author Statement**

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**Abstract**

This research addresses the topic of nature centers from a critical theory perspective. This research assumed in part, the question: what are the characteristics of a functional and successful nature center that includes environmental education goals and programs? Nature center administrators from across the United States were surveyed and asked to share their opinions on this topic. Six overall characteristics pertaining to management and vision were identified through an exploratory mixed-method design. Other components of these characteristics were discovered during the analysis of the data, and include factors such as approaches to education. Recommendations for improving nature centers and their programs are also discussed.

Children today can identify over 1,000 corporate logos but fewer than 10 plants and animals native to their region. (Smith, 2002-2003, para. 12)

In March 2004 I was offered the opportunity to assist in the formation of a nature center for the San Jacinto Wildlife Area. Susan and I have created the San Jacinto Center for Environmental Education from the desire to bring more school-age children and university students to the site, as well as to manage and expand the public walks on the San Jacinto Wildlife Area. In order to create a center that fulfills our vision, I have looked to professionals at nature centers around the United States for their expert opinions and information. Thus my research question is: What are the characteristics of a functional and successful nature center that includes environmental education goals and programs? For clarification, I define the following terms: environmental education, nature center, functional, and successful.

According to Dr. Bill Stapp, environmental education is “aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution” (in President’s Council on Sustainable Development, 1996, p. 9).

A nature center, as defined by the Association of Nature Center Administrators, brings environments and people together under the guidance of trained professionals to experience and develop relationships with nature...A nature center consists of: a natural site or home base to conduct educational programs; a separate legal entity with a precise mission statement managed by a governing body; a paid professional staff; an established education program. (as cited in Evans & Chipman-Evans, 1998, p. 39)

Functional, as it pertained to this thesis, is defined as contributing to the development and maintenance of the nature center as it directly relates to everyday needs and interests (Webster's, 1993).

Successful, as it pertained to this thesis, is defined as resulting in the success of attaining the desired results for a nature center (Webster's, 1993).

I began this research with an in-depth review of the relevant literature regarding the importance of nature centers, the goals of environmental education, and critical theory as it relates to environmental education and nature centers. While critical theory was not found in the literature for nature centers it is the founding theoretical principle for the San Jacinto Center for Environmental Education and the educational programs it will offer.

The Tbilisi Declaration, written in 1977 by the United Nations Education, Science and Cultural Organization (UNESCO), and the United Nations Environmental Programme (UNEP) established clear goals and objectives for environmental education. The goals of The Tbilisi Declaration are principle to the foundation of multiple national and international organizations. They are:

- To foster clear awareness of, and concern about, economic, social, political and ecological interdependence in urban and rural areas;
- To provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment;
- To create new patterns of behavior of individuals, groups and society as a whole towards the environment. (The Tbilisi Declaration, 2005, p. 15)

The Tbilisi objectives are broken down into five categories as follows:

- Awareness - to help social groups and individuals acquire an awareness and sensitivity to the total environment and its allied problems;
- Knowledge - to help social groups and individuals gain a variety of experience in, and acquire a basic understanding of, the environment and its associated problems;
- Attitudes - to help social groups and individuals acquire a set of values and feelings of concern for the environment and the motivation for actively participating in environmental improvement and protection;
- Skills - to help social groups and individuals acquire the skills for identifying and solving environmental problems;
- Participation - to provide social groups and individuals with an opportunity to be actively involved at all levels in working toward resolution of environmental problems. (The Tbilisi Declaration, 2005, p. 15)

A case study of nature center directors was created through the use of an integrative, exploratory mixed method. This method of research provided a more comprehensive look at the functional and successful characteristics of a nature center, and included the ability to rank the characteristics most dominant within the field. It also provided this researcher the ability to produce more complete data, expanding the questions to include the role of environmental education in these nature centers. The quantitative survey was designed to determine the cohesiveness of the findings from the qualitative survey.

A heterogeneous target population of 255 directors from different nature centers across the United States was used for this research. Directors were chosen from the Association of Nature Center Administrators and from Evans and Chipman-Evans, How to Create and Nurture a Nature Center in Your Community. One interview was conducted with Steve, the Executive Director of a nature center in the United States.

Table 1 shows the identity of the organizations responding to the quantitative survey. The nature centers were predominantly non-profit. Second most common were nature centers that identified themselves as operated by government agencies. Table 2 illustrates how long responding nature centers have been in existence. More than half of the nature centers reported having been in existence for more than 20 years, with just less than half in operation between six and 20 years.

**Table 1. Identity of organizations responding to quantitative survey**

	Number identified with each type
Non-profit	12
Government	5
Foundation	1
School-based	1
Other: Non-profit & Government Cooperatives	2

Note: Number of respondents = 22.

**Table 2. Length of time responding organizations have been in existence**

	Nature centers responses
Less than 1 year	0
2 - 5 years	0
6 - 10 years	4
10 - 20 years	6
20+ years	12

Note: Number of respondents = 22.

Three emergent patterns developed from the analysis of data from the qualitative surveys. These patterns were management, vision, and education, and the categories within these patterns. Consistency in responses to the questions was clear, even though rank of importance varied for the categories within the patterns. Quantitative data analysis indicated a strong correlation to the qualitative data analysis, including the interview with Steve.

### Management

In the management pattern five distinct categories emerged. These include strong leadership, strong local support through meeting the needs of the community, well trained staff and volunteers, sound strategic/business plan, and sound fiscal planning.

The first category was strong leadership. Strong leadership includes the board of directors, which operates and guides the organization. Quantitative analysis supports these findings, illustrating that strong leadership was the most important aspect of a functional and successful nature center (Tables 3 and 4).

Strong local support through meeting the needs of the community was the second category in the management pattern. Quantitative analysis supported the importance of strong local support through meeting the needs of the community, which ranked second in importance (Tables 3 & 4).

The primary focus of local support stems from partnerships in the local community, including schools, boys and girls clubs/organizations, service organizations, local government agencies, churches, parents, other nature centers, and state parks. The second focus of local support includes providing land with quality natural resources that is located within a useable proximity to the community.

Next in the management pattern was the category of a well trained staff and volunteers. Quantitative data analysis shows that well trained staff and volunteers is the third important category (Tables 3 and 4). In qualitative data analysis three main patterns emerged, equally important; strong volunteer ethic, effective communication, and professional development.

A sound strategic/business plan ranked fourth in the quantitative data analysis (see Tables 3 & 4), and was the next category in the management pattern. The most important aspect of this category that consistently arose in the qualitative data analysis was the need to create and/or update the strategic plan every few years. “Successful organizations always have a three to five year plan in place” (Grace, 2003, p. 20).

The final category of the management pattern was sound fiscal planning, which ranked fifth in the quantitative survey (Tables 3 & 4). Funding includes, “income, interest income, and charitable contributions” (Byrd, 2000, p. 229). The board of directors was also linked to the fiscal strength of a nature center.

### **Table 3. Functional & successful characteristics of a nature center Frequency of distribution Six-point scale**

1 2 3 4 5 6 No response

Strong leadership/Board of Directors	10	4	6	1	1	0	
Strong local support/meets community needs	5	6	2	1	3	3	2*
Sound fiscal planning	3	2	3	6	5	3	
Sound strategic/business plan	0	3	4	3	4	4	2*
Solid mission statement	5	2	2	2	0	10	1*
Well-trained staff/volunteers	3	6	2	5	5	0	1*

Note: Number of respondents = 22. The frequency of distribution used a six-point scale, where 1 = Most important and 6 = Least important. \*Frequency of distribution calculated with “no response” results.

**Table 4. Functional & successful characteristics of a nature center Mean and rank of importance**

	Overall Mean	Rank of Importance
Strong leadership/board of directors	2.045	1
Strong local support/meets community needs	3.000*	2
Sound fiscal planning	3.772	5
Sound strategic/business plan	3.700*	4
Solid mission statement	3.952*	6
Well-trained staff/volunteers	3.142*	3

Note: Number of respondents = 22. The mean rating used a six-point scale, where 1 = Most important and 6 = Least important. \*Mean calculated without “no response” results.

### Vision

An organization is identified by its vision from which its identity is created. Wheatley reported that “identity includes such dimensions as history, values, actions, core beliefs, competencies, principles, purpose, and mission” (1996, p. 58). Nearly half of the qualitative survey responses stated that a clear, concise mission statement was necessary to focus the operations of the nature center and staff. It was suggested that the development of an organization’s vision should include key community stakeholders, therefore instilling a sense of community partnership in its mission, goals and obtainable objectives. This allows the community to be involved in determining what the organization is about, what is important, and what is not important. The mission statement relates directly to the needs of the community the nature center serves.

Since nature centers are concerned primarily with “...fostering a sustainable relationship between the people and the earth...” (Gross & Zimmerman, 2002, p. 15) it is important that the vision of the center include environmental goals. Through an organizations vision, one way to achieve the inclusion of environmental goals is to create a sense of stewardship. Community members and

visitors should leave the center and its programs motivated to do something to help their local environment or the environment in general.

### Education

There were two distinct categories in the qualitative data analysis that arose in the education pattern; programming and outreach. Programming included the various educational experiences offered at the nature center. It has been suggested that educational programming should be place-base, hands-on, interactive and innovative, held outdoors, and meet the specific needs of the community. Programming should include quality curriculum about the sites natural & cultural history, and native plants & animals.

The nature centers that responded to the quantitative survey offer a wide variety of programs to the communities they serve (Table 5). General public and environmental education programs are offered most often, followed by school education, youth programs and nature walks.

**Table 5. Types of programs offered by responding nature centers**

	Number of nature centers offering the program
School Education Programs	20
University/Scientific Research Opportunities	15
General Public Education Programs	21
Environmental Programs	21
Cultural Programs	13
Youth Programs	20
Nature Walks	20
Interpretive Programs	18
On-Site Museum	11
Other: Includes a variety of programs including family, live/animal rehabilitation, corporate events, community outreach, adult lectures, hunting, and special events	9

Note: Number of respondents = 22.

The quantitative survey focused on the programming perspective and The Tbilisi Declaration objectives of environmental education (Figure 1). Meeting these objectives varies greatly depending on the nature center and its vision.

Educational outreach included the various methods of communicating with the local community, visitors, and organizations that will participate in the educational programs offered at the nature center. Outreach was expressed as necessary to the survival of the nature center. Many centers noted



that the key to success in their educational programs is high visibility. Data analysis suggests that it is necessary to reach out to the community and supporters about the educational programs offered in as many different ways as possible. Media used for outreach includes educational flyers and brochures handed out at the nature center; a quarterly or biannual newsletter; a website about the center and with an updated calendar of activities; public service announcements on radio and television; and hosting special events on site.

The conclusions extracted from this research follow.

1. The characteristics of a functional and successful nature center include: strong leadership; strong local support; a well-trained staff and volunteers; a sound strategic/business plan; sound fiscal planning; and a solid vision.
2. These six characteristics are interrelated; each is dependent upon the other for the nature center to be functional and successful.
3. Quality programming and curriculum are necessary to meet the needs of the program participants.
4. Outreach through various forms of media provides necessary information to potential participants about educational and experiential opportunities offered by the nature center.
5. For a nature center to be functional and successful, local community involvement is mandatory; the greater the potential in meeting the needs of the community and the populations it serves.

Environmental education is an opportunity to create a learning environment that empowers the students, the educator, the community and the world.

The recommendations resulting from this research follow.

1. Wherever appropriate in the programs and curriculum of nature centers, it is recommended that education about local problems and issues be increased in order to comply with and fulfill the objectives and goals of environmental education as detailed by The Tbilisi Declaration.
2. It is recommended that nature centers provide greater access to relevant action-oriented opportunities within their programs to comply with and fulfill the objectives and goals of environmental education as detailed by The Tbilisi Declaration.

3. The rate of compliance to and fulfillment of environmental education goals and objectives, as detailed by The Tbilisi Declaration, in nature centers presents an opportunity for future research.

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