Study on the Current Situation of Nature Education Curriculum in Giant Panda National Park: Taking Anzihe Nature Reserve of Sichuan Province as an Example

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Abstract. This article take the Sichuan Province Anzihe Nature Reserve in the Giant Panda National Park as a research case. Through the study of the current situation of the curriculum from the perspectives of course types, number of courses, course goals, and main content, participants' awareness of the degree of "favorite", "difficulty" and "interesting". The results show that the nature education courses in the case are diverse, with clear goals and rich content. Participants have a high degree of preference for the courses, but they think the courses are easier and less interesting. Data analysis results show that there is a significant linear correlation between the participants' “whether have experience in nature education” and their cognition of the curriculum. Coupled with the fact that nature education is generally popular, this places higher requirements on the design and implementation of nature education courses. Based on this, the article summarizes relevant suggestions and measures through typical cases as a starting point to help the sustainable and healthy development of nature education in the Giant Panda National Park.

1. Introduction

Relevant research shows that the natural environment is better than the artificial environment in many cases. The natural environment and natural materials provide sufficient space for participants, which helps to improve their creativity, cognitive ability, behavioral self-control ability and emotional resistance etc. [1-5]. In recent years, the state has continuously strengthened its policy guidance on nature education in Nature reserve. In 2019, the State Forestry and Grassland Administration also issued a notice to give full play to the social functions of various nature reserves and vigorously carry out nature education work. Nature education has also become the main type of Nature reserve in China in the future—an important functional section of national parks. As a result, various types of Nature reserve have also been joining the ranks of exploring nature education, but more Nature reserve do not know how to rationally use existing natural resources to develop and design activities with characteristics of the times and regions. Therefore, research on nature education in the giant panda national park has strong practical significance, and research on the status quo of nature education activities has theoretical guiding value. It is even more necessary to get opinions on relevant measures.

2. Research Review

On the basis of clarifying the definition of nature education, through combing the relevant domestic research, it is known that the current research on nature education activities is mainly concentrated on the premise of the resource endowment investigation based on a certain case, and then the design and activity plan. It is proposed that the scope of the research is to take a single sample as the object in an independent area, and the research results are applicable to a specific protected area.
This type of research has been relatively sufficient, but it is relatively lacking in a summary and analysis of the status quo of nature education activities of this nature in Nature reserve. 2020 is the first year of the national park. It is even more necessary to seize this opportunity to carry out nature education, so as to better bring out the ecological value and protection of biodiversity in the Giant Panda National Park. Comprehensive functions such as world ecological education.

Therefore, this study takes the Sichuan Province Anzihe Nature Reserve, which is located in the Giant Panda National Park, an earlier practice in the field of nature education, and is in front of similar Nature reserve, as the case study object, and tries to use typical The case presents a generalized approach, and proposes corresponding suggested measures for the implementation of nature education activities in the Giant Panda National Park.

3. Research Design and Methods

3.1. Interview Outline and Questionnaire Design

According to the purpose of the survey, design an interview outline on the types of activities, number of activities, activity objectives and main content of Anzihe Nature Education Center for actual interview research. The survey questionnaire consists of two parts. The first is demographic information, including the gender and age of the participants. Furthermore, the students' cognition of the degree of preference, difficulty, and fun of the nature education activities they participated in. The degree of preference, difficulty, and fun of the activities were measured using the Likert scale 5-point assignment method.

The assignment adopts positive and positive assignment. The higher the score, the higher the degree of preference, the more difficult and the more interesting.

3.2. Research Methods

During the period from March 2019 to December 2019, collected feedback questionnaires on nature education activities. Field survey obtained a total of 175 questionnaire data plus the questionnaire data provided by the Anzihe Nature Education Center. Invalid questionnaires were eliminated, and 166 points of valid questionnaires were finally obtained. These valid data were imported into SPSS software, and the basic description was first Statistical analysis, and then the correlation analysis of key elements, and finally get the data analysis results.

4. Data Analysis

4.1. Analysis of Demographic Characteristics of the Sample

There are 92 males and 74 females in the survey sample. The age distribution of activity participants is 7-13 years old, and 11 years old is the main body. The age of the participants is generally no more than 12 years old, of which only 5 are under 8 years old and only 1 is 13 years old. It shows that the age span of the participants in the nature education theme activity of Anzihe Nature Education Center is small and concentrated. Among the surveyed population, 62% persons had natural education experience, and 38% persons without natural education. To a certain extent, it shows that under the background of the nature education boom, 8-12 year-old students participate in nature education activities well.

4.2. Descriptive Statistical Analysis

In the participants’ perception of the activity’s likes, “Preferred” accounted for the largest proportion, reaching 42.2%, followed by “Very Like”, the cumulative proportion of the two was about 80%. There are no values for both "dislike" and "very dislike", indicating that the participants liked the activity more. Among the activity “difficulties”, “normal” and “relatively easy” accounted
for the largest proportion, and only one person thought the activity was “very difficult”, indicating that the activity was moderately difficult and favored relatively easy. However, in the participants’ perceptions of the “interesteningness” of the activity, “general” accounted for the largest proportion, reaching 44.6%, and “very interesting” with a small proportion, showing the interest of the activity More general.

Participants’ average cognition of the “interesteningness” of the activity was 3.34. This indicates that the activity’s interest has not reached a relatively high level. In view of the differences in participants’ perceptions of the difficulty of the activity, the instructor needs to pay special attention to the performance of the students during the activity leadership process, and provide targeted solutions for activities that individual students do not understand.

4.3. Empirical Analysis

According to the statistical report, participants with experience in natural education activities have significantly lower cognitive of "likeness", "difficulty" and "interesteningness" of activities than participants without experience in natural education activities, and lower the overall average.

Table 1. Comparison statistics table.

<table>
<thead>
<tr>
<th></th>
<th>with or without natural activity experience</th>
<th>Like level</th>
<th>Difficulty level</th>
<th>Interesting level</th>
</tr>
</thead>
<tbody>
<tr>
<td>without natural</td>
<td>Mean</td>
<td>4.63</td>
<td>3.17</td>
<td>3.76</td>
</tr>
<tr>
<td>education experience</td>
<td>N</td>
<td>63</td>
<td>63</td>
<td>63</td>
</tr>
<tr>
<td>Standard deviation</td>
<td></td>
<td>0.517</td>
<td>0.794</td>
<td>0.665</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td>3.90</td>
<td>2.34</td>
<td>3.09</td>
</tr>
<tr>
<td>With natural</td>
<td>N</td>
<td>103</td>
<td>103</td>
<td>103</td>
</tr>
<tr>
<td>education experience</td>
<td>Standard deviation</td>
<td>0.721</td>
<td>0.847</td>
<td>0.729</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td>4.18</td>
<td>2.66</td>
<td>3.34</td>
</tr>
<tr>
<td>Total</td>
<td>N</td>
<td>166</td>
<td>166</td>
<td>166</td>
</tr>
<tr>
<td>Standard deviation</td>
<td></td>
<td>0.741</td>
<td>0.919</td>
<td>0.776</td>
</tr>
</tbody>
</table>

On the basis of the difference, a hypothesis test is carried out on the relationship between the participants' "have natural education experience" and their cognition of the activities' "likeness", "difficulty" and "interesteningness".

Table 2. ANOVA analysis table.

<table>
<thead>
<tr>
<th>Project</th>
<th>The sum of squares</th>
<th>Df</th>
<th>mean square</th>
<th>F</th>
<th>Sig. Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>9.103</td>
<td>2</td>
<td>4.552</td>
<td>24.741</td>
<td>0.000</td>
</tr>
<tr>
<td>Like degree</td>
<td>Within the group</td>
<td>29.987</td>
<td>163</td>
<td>0.184</td>
<td>0.165</td>
</tr>
<tr>
<td>The total number</td>
<td>39.090</td>
<td>165</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(1) Analyze whether there is a significant difference in the cognition of the "likeness" of the activity among the participants with or without natural education experience.

H₀: the participants with or without natural education experience have no significant difference in cognition of the activity like degree.

H₁: Participants with or without natural education experience have significant differences in cognition of the degree of activity they like.

Due to Sig. = 0.000<0.05, so the null hypothesis H₀ is rejected, and the participants with or without natural education experience have significant differences in the degree of cognition of the activity.

(2) Analyze whether participants with "no natural education experience" have significant differences in the "difficulty" of the activity.

H₀: participants with or without natural education experience have no significant difference in their perception of the difficulty of the activity.

H₁: Participants with or without natural education experience have significant differences in cognition of the difficulty of the activity.

Due to Sig. = 0.000<0.05, so the null hypothesis H₀ is rejected. Participants with or without natural education experience have significant differences in their perception of the difficulty of the activity.

(3) Analyze whether participants with "no natural education experience" have significant differences in the "interesting" perception of the activity.

H₀: the participants with or without natural education experience have no significant difference in the fun perception of the activity.

H₁: Participants with or without natural education experience have significant differences in their cognition of fun.

Because Sig. = 0.000<0.05, the null hypothesis H₀ is rejected, that is, participants with or without natural education experience have significant differences in the fun perception of the activity.

From the analysis results, the variable "whether there is a natural education experience" and the participants' perceptions of "likeness", "difficulty" and "interestingness" of the activity are indeed significantly different. This study further hypothesized, on the basis of significant differences between them, are they relevant? And conduct hypothesis testing.
(4) It is assumed that there is a correlation between the participants' "likeness" of the activity and "whether they have natural education experience".

The correlation coefficient between "like degree" and "have natural education experience" is $R=-0.481$, Sig.= 0.000$<0.01$, indicating that there is a correlation between the two, and a significant linear relationship at the level of 0.01, the hypothesis is verified.

Table 3. Correlation analysis of the child table (1).

<table>
<thead>
<tr>
<th></th>
<th>whether they have natural education experience</th>
<th>Like degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson correlation</td>
<td>1</td>
<td>-0.481**</td>
</tr>
<tr>
<td>Significant (both sides)</td>
<td></td>
<td>0.000</td>
</tr>
</tbody>
</table>

**. At 0.01 level (double side)

(5) Assume that participants’ perception of the “difficulty level” of the activity is related to “whether they have natural education experience”.

The correlation coefficient between "difficulty degree" and "having natural education experience" is $R=-0.442$, Sig.= 0.000$<0.01$, indicating that the linear relationship between the two is significant at the level of 0.01, and the hypothesis can be verified.

Table 4. Correlation analysis of the child table (2).

<table>
<thead>
<tr>
<th></th>
<th>whether they have natural education experience</th>
<th>difficulty degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson correlation</td>
<td>1</td>
<td>-0.442**</td>
</tr>
<tr>
<td>Significant (both sides)</td>
<td></td>
<td>0.000</td>
</tr>
</tbody>
</table>

**. At 0.01 level (double side)

(6) It is assumed that there is a correlation between the participants’ perception of the “interestingness” of the activity and “whether they have natural education experience”.

The correlation coefficient between "interesting" and "having natural education experience" is $R=-0.423$, Sig.= 0.000$<0.01$, and the linear relationship is significant at the level of 0.01. It shows that the variable "having natural education experience" is related to "interesting", and the hypothesis is verified.
Table 5. Correlation analysis of the child table (3).

<table>
<thead>
<tr>
<th></th>
<th>whether they have natural education experience</th>
<th>Interesting degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>whether they have natural education experience</td>
<td>Pearson correlation: 1</td>
<td>-0.423**</td>
</tr>
<tr>
<td></td>
<td>Significant (both sides): 0.000</td>
<td></td>
</tr>
<tr>
<td>Interesting degree</td>
<td>Pearson correlation: -0.423**</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Significant (both sides): 0.000</td>
<td></td>
</tr>
</tbody>
</table>

**. At 0.01 level (double side)

The data analysis of the questionnaire shows that the factor of “having natural education experience” affects participants’ perceptions of the three aspects of nature education activities: “like”, “difficulty” and “interesting”. There are significant differences, and the three are Pearson related. The coefficient values are very close.

5. Research Results

The research results show that the frequency of activities of Anzihe Nature Education Center is not very high, but in the stage of fine polishing. The nature of the activities is different from the operation of the general pure business model in the market, mainly for public welfare and semi-public welfare. The types are relatively rich, with prominent themes and clear goals. Participants’ perception of the activity’s liking level is relatively high. And the difficulty degree of activity settings is in line with the acceptable to the audience. But from another point of view, is the difficulty of such an activity the best? It actually shows that the difficulty of the activity is designed to be higher than the participants' current cognitive acceptance level, which may be more helpful to stimulate the participants' interest in learning. What’s more noteworthy is that the data results show that participants do not have a very interesting experience.

The conclusion that there is a significant linear correlation between the participant’s "whether they have experience in nature education" and their perceptions of the activities "like degree", "difficulty level" and "interesting". And the specific implementation leadership put forward higher requirements. It is required to strengthen the polishing of the quality of nature education activities from many aspects, increase the interest of the activities, and design the difficulty of activities that meet the best acceptable range of participants.

The data analysis of the questionnaire shows that the factor of “having natural education experience” affects participants’ perceptions of the three aspects of nature education activities: “like”, “difficulty” and “interesting”. There are significant differences, and the three are Pearson related. The coefficient values are very close.

6. Research Discussion and Recommendations

6.1. Research Discussion

The article mainly discusses the questionnaire data around three dimensions: basic descriptive statistical analysis, significance analysis, and correlation analysis. The descriptive statistical analysis showed that the overall feedback from the participants on the activities of the Anzihe Nature Education Center was that they liked the activities, but at the same time believed that the activities were easier and less interesting.
To meet the needs and goals of nature education, it requires high-quality design as the basis, high-efficiency team resources as the guidance, supplemented by the supporting of the hardware facilities of the Nature Education Center, and the dissemination and assistance of modern new media means to integrate all resources to create a system. A standardized natural education activity system to increase participants’ love of the activity. Therefore, this article proposes the following recommended measures.

6.2. Research Recommendations

(1) Improving the infrastructure of nature education

Establishing a nature education and education center and construction of self-guided signage explanation system

(2) Design of activities with localized characteristics.

(3) Multi-party cooperation

(1) Strengthening cooperation with the government and borrowing government policy funds to support the construction of ecological civilization has long been a national strategy. (2) Strengthen cooperation with NGOs, foundations and other professional protected area management organizations. (3) Strengthen cooperation with scientific research units and institutions.

(4) Construction of the talent team

(5) Establishing the image of nature education

(6) Establishing a complete network information system

References


