Landscape Evaluation of Green Space of Yunnan University Based on Sd-Sbe Method

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Abstract: The purpose of this paper is to obtain the quality level of green space landscape in Chenggong Campus of Yunnan University, and to get the satisfaction degree of green space landscape and suggestions for its use. On the basis of questionnaire survey and consultation experts, five kinds of green space landscape grades were constructed by SD-SBE comprehensive method. Four kinds of green space landscape types, namely, recreational green space landscape, teaching green space landscape, entrance green space landscape and road green space landscape, were evaluated by seven evaluation factors and three comprehensive average scores. Finally, the comprehensive average of SD and SBE of four green space types was obtained. Value. Finally, we found that the quality of campus green space landscape is good. According to SD-SBE method, we can get guidance suggestions for different types of green space.

1. Introduction

All Campus landscape is a beautiful scenic line inside the campus. The quality of the green landscape system in the campus affects the reputation of the school and the quality of life of its staff. Therefore, it is necessary to carry out the evaluation of campus green space landscape, understand the status of campus green space landscape, and further enhance the ornamentality of campus green space landscape. Campus green space landscape evaluation refers to the investigation and evaluation after combining many theories, providing feedback for the school landscape construction [1]. Campus greening in landscape has certain characteristics [2]. Chenggong Campus of Yunnan University is in the west of Guanshan Reservoir. The total land area is 2.67 km and the building area is 1029 000 m which was officially put into use in 2010. [3]. with the increasing number of teachers, students and users, it is necessary to evaluate the green landscape of the campus.

2. Research organization and content

2.1 Research contents

2.1.1 Research objectives

(1) According to the feeling of "aesthetic subject", SD-SBE comprehensive method was used to evaluate the quality of the overall green landscape in Chenggong Campus of Yunnan University.

(2) To verify the comprehensive evaluation effect of SD and SBE methods, compare different types of green space landscape and draw conclusions, select the elements affecting the results and give specific guidance and suggestions for the elements.

2.1.2 Main Contents

We will accurately understand and evaluate the campus green space landscape, and can better design the green space landscape, and contribute to the construction of the campus [4]. Based on the aesthetic subject, the green space landscape evaluation is divided into teachers and students to understand their aesthetic preferences, and to provide reference for the design of green space

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environment in University campuses. Based on SD-SBE method, the aesthetic styles of teachers and students are studied, and the correlation between SD value and SBE value of each landscape element is analyzed.

2.2 Research Methods

2.2.1 Semantic Difference Method (SD Method)

Semantic difference method is abbreviated as SD method, also known as functional recording method. Usually, this research method consists of the set of pairs of semantic adjectives and the scale of odd numbers.

2.2.2 Beauty Scenery Evaluation Method (SBE Method)

The School of landscape evaluation, combines the physical characteristics of mathematics with landscape and landform, which is a combination of subjective and objective evaluation. Among them, the method of evaluating landscape beauty is also called SBE method, which takes the form of collecting photos and playing them as slides as a means of evaluation [5].

SD-SBE synthesis method: The questionnaire in this paper synthesizes the SBE and SD methods. According to the psychological feelings of the subjects, the seven influencing factors of each photograph are scored separately. Testers'preference for the scenery in the photos, i. e. SBE value, will be obtained directly from the comprehensive weighted score of the beauty. By scoring the slides made of each photo by SD method and SBE method, the average values of various factors are obtained, and the corresponding comprehensive values of SD and SBE are obtained. After weighted average of SD value and SBE value, the comprehensive average value is obtained, and the quality grade of campus green space is determined according to the score. (Table 1)

Table 1. Greenbelt Quality Classification Table.

Very Bad	Bad	Fair	Good	Excellent
-2～-1.2	-1.2～-0.4	-0.4～0.4	0.4～1.2	1.2～2

3. Experimental Design

3.1 Preparation

3.1.1 Sample selection

After investigating and analyzing the scene, take photos on the spot, and take pictures according to the four categories of campus recreational green space landscape in the classification of landscape resources. Then, each category is divided into five sample points, a total of 4 x 5 sample points. The square is 15mx15m, the long is 10mx 22.5m, and the area is 225. The time period is 8:20-10:20 in the morning and 17:40-18:20 in the afternoon. The equipment is stable and undisturbed, and the environment in the scene is not disturbed by pedestrians [6]. And the sample points should not be less than a certain number of shootings (tentatively set at 5, depending on the actual situation), select one representative picture as a reference, a total of 20. At the same time, other university landscape photographs of the same kind are selected to be added to the evaluation reference, a total of 4.

3.1.2 Formulation of questionnaires

The SBE value, which is the preference degree of the scenery in the collected photos, will be directly obtained by the comprehensive weighted score of the beauty. It is divided into five quantification levels, respectively - 2, - l, 0, 1, 2. The higher the score is, the stronger the degree of the quality. By scoring each factor in the picture, the subjects of the questionnaire needed in this experiment can be obtained.

3.1.3 Test object selection

In this experiment, the subjects were divided into two parts, four groups. One part is composed of more experienced testers, representing the aesthetic subject of teachers, the other part is composed of

less experienced testers, representing the aesthetic subject of students. Master graduate students represent the group of teachers and sophomores represent the group of students. Twenty-four references were assessed by 20 participants.

3.2 Evaluation procedures

First, the evaluators received the "experimental rules" for the purpose and method of evaluation, but did not process the basic information of the evaluation samples. Instead, they quickly loaded 24 photos for slide projection [7]. Secondly, let the evaluator understand the whole landscape and determine the evaluation benchmark, but not the value of the evaluation content for the tester. Finally, the slide is played again, the time is set to 20-40 seconds, the slide is no longer played for the second time, and the evaluation results are not allowed to be modified twice, so that the tester can score the content of the photo by sensory perception.

4. Calculate SD and SBE values

Twenty-five photographs were scored by EXCEL tabulation. Four abandoned samples were excluded. SD values were obtained according to the comprehensive evaluation scores of six influencing factors of each photograph, and SBE values were obtained according to the comprehensive values of the beauty of valid photographs.

Figure 1. Pictures obtained in Yunnan University.

Figure 2. Pictures obtained in Other Universities as Contrast.

5. Results and discussion

1) Landscape quality level and analysis of different types of green space in Chenggong Campus of Yunnan University

The author selected the places with recreational facilities and environment such as Zehu, Wendian Square, and Zhiweitang Leisure District of Yunnan University as the sample collection points of campus recreational green space landscape types. In the green space of the building area, the author selected more artificial buildings near Yangzhi Building (Library), Lixinglou Building and Nanyuan Pass Building as sample collection points.

Through the comparison, we can find that the comprehensive scores of teachers and students on the green landscape in Chenggong Campus of Yunnan University are far higher than 0.4. The quality level of the whole green landscape is good for the aesthetic subject. The "two aesthetic subjects"

(teachers and students) of the campus are satisfied with the green landscape in the campus. It can also be seen that there are great differences between the two main types of green space landscape in the campus teaching area and the green space landscape in the campus entrance, and the scores of the students' group are significantly higher than those of the teachers' group.

2) Mutual Empirical Analysis of SD Value and SBE Value

It can be concluded that although the comprehensive scores of teacher group and student group are close to each other, their ranking order is quite opposite, which indicates that teachers and students as two main "aesthetic subjects" in campus have different preferences for different green space types due to the influence of age, experience and social status. Teachers preferred the green landscape with more natural elements, while the green landscape near buildings and landmarks which had been obviously artificially modified was more popular with students.

3) Exploring the Rationality of Studying Campus Landscape by the Comprehensive Application of SD and SBE

Campus environment is created by people, so there is a tendency of beauty consistent with this theme. From enumerating and exploring a series of aesthetic characteristics to describing the aesthetic experience of the aesthetic subject, the sense of intuitive beauty can be decomposed into specific landscape objects and concrete abstract language. Previous study [8] used the comprehensive method of combining SD method and SBE method to analyze the differences between public and expert aesthetics, and the quality of visual landscape in the park, and obtained reliable and systematic research results. This study shows that the combination of SD-SBE and SD-SBE can get the level of landscape quality, and can verify each other to get more accurate results of the causes of formation, screen out better green landscape, clear the importance of a certain element in the landscape, and provide suggestions for the campus interior landscape planning and design based on the results.

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