



Network Teaching Evaluation of Aesthetic Education in Colleges and Universities From the Perspective of Cognitive Science

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Abstract:

From the perspective of cognitive science, aesthetic education(AE) research will focus on the cognitive dimension of AE research. From the actual situation, the online teaching evaluation of AE in CAU has a unique role of feedback, diagnosis, guidance and intervention, which is an important measure to ensure the quality and effect of teaching. Therefore, this paper studies and analyzes the network teaching evaluation(NTE) of AE in CAU from the perspective of cognitive science; This paper discusses the design process and implementation guarantee of NTE of AE in CAU, put forward to provide intelligent network teaching improvement decision; Through SPSS 22.0 software statistics, researchers applied the NTE index system of College AE to score the network teaching activities. The test results verified that the NTE index system of CAE constructed under the visual valve of cognitive science is reasonable, effective, reliable and stable.

Keywords: *Cognitive Science, College Aesthetic Education, Network Teaching, Teaching Evaluation*

1 INTRODUCTION

From the actual situation, although there are many CAE network teaching resources, there is still a lack of high-quality CAE network teaching resources, which does not meet the needs and expectations of students for high-quality colleges and universities (CAE) network teaching resources. Evaluation has unique functions of feedback, diagnosis, guidance and intervention. It is an important measure to ensure the quality and effect of teaching. However, the current NTE of AE in CAU adopts the general standard of NTE, which is difficult to reveal the substantive problems of the network teaching of AE in CAU, and does not have the function of evaluating the network teaching of AE in CAU. Therefore, how to evaluate the network teaching of AE in CAU is the core issue of this study. Based on this, this paper studies and analyzes the NTE of CAE from the perspective of cognitive science.

Many scholars at home and abroad have studied the NTE of CAE from the perspective of cognitive science. M fejfarov á uses the results to develop recommendations to improve the quality of university teaching. The results show that the overall curriculum score is more affected by the variables related to the curriculum results, content and concepts than the teacher score. The main value lies in the overall overview of the variables that affect students' cognition of the quality of the courses they teach [6]. Amerian m pointed out that the current quantitative tendency of AE evaluation in CAU is that quantitative methods are widely used to evaluate the learning effect

and comprehensive quality of students, as well as the teaching effect and teaching quality of teachers [1].

As a new teaching mode, network teaching is deeply influencing and promoting the education and teaching reform in CAU. This paper studies the evaluation of network teaching of AE in CAU. Considering that the current network teaching practice is mainly concentrated in the field of higher education, and the research core is the NTE of AE in CAU, the network teaching in this paper mainly refers to the network teaching in the field of higher education. The network teaching of AE in CAU means that under the network teaching environment represented by modern information technology such as network technology, college teachers operate the teaching content with aesthetic advanced expertise as the main body to achieve the teaching objectives according to certain methods, so as to realize the sum of teaching activities of students' aesthetic development [7].

2 NTE OF AE IN CAU FROM THE PERSPECTIVE OF COGNITIVE SCIENCE

2.1 AE from the Perspective of Cognitive Science

AE from the perspective of cognitive science is different from the general AE research relying on philosophy, general psychology and literary psychology. It takes cognitive science as the main theoretical basis, realizes the combination of AE and cognitive science, and aims to push the AE research to a more scientific and

operational level. AE is the education that provides various aesthetic objects to the educated. It should not only conform to the law of aesthetics, but also conform to the law of education. In these two laws, the aesthetic law occupies a basic position. Therefore, to use cognitive science to study AE, we must first make a detailed analysis of the internal processing mechanism of aesthetic psychology, that is, aesthetic cognitive mechanism, at the cognitive level, to form aesthetic cognitive principles, which are also an important basis for AE [3]. To clarify the principle of aesthetic cognition, we need to find out what impact this mechanism has on AE.

College AE is an AE implemented in the stage of higher education. Compared with the AE in the basic education stage, the AE in CAU has both commonness and particularity. It is shown in the general attribute of AE in CAU that "AE has the same characteristics in general sense in terms of connotation, the relationship between AE and quality education, and the relationship between AE and people's all-round development education". College AE takes the teaching and learning of advanced knowledge as the logical starting point, and the educational content focuses on the theoretical knowledge of the essence, laws and principles of AE. In addition, the AE in CAU has a deeper connotation compared with the AE in basic education in terms of its general characteristics, such as process, universality, emotion, image, practicality and so on.

2.2 Design of CAE NTE

The design of NTE of AE in CAU is in the preparation stage of the whole evaluation activity, which is to make full preparation for the related issues such as why, what and how to evaluate. At the same time, the quality of evaluation design is directly related to whether the whole evaluation activity is effective and operable, and whether the final evaluation results can reliably and accurately reflect the quality level of AE network teaching activities in CAU. The design of AE NTE in CAU includes clarifying the evaluation purpose and objectives, analyzing the evaluation contents, and selecting the evaluation methods. Each aspect is carried

out on the basis of the former aspect, and plays a guiding role in the latter aspect.

2.2.1 Define the Evaluation Objective System

The evaluation objective is an accurate outline of the requirements or standards on which the whole process of evaluation activities is based, and it is the basis of evaluation. The evaluation objective is determined under the guidance of the evaluation purpose. It is the specific requirements to be achieved by the evaluation object. It is the key to the whole evaluation activity. It is of great significance to the following evaluation contents, methods and indicators. It not only objectively describes the starting point, direction and destination of the AE network evaluation activity in CAU, but also provides guidance for the improvement of the AE network teaching activities in CAU, It is related to the quality and effect of the whole evaluation activity.

The orientation and expression of the network teaching objectives of AE in CAU directly affect the direction and motivation of the teaching objectives and the effective play of the functions as the standard of teaching tests. The evaluation of the network teaching objectives of AE in CAU includes two aspects: the objective positioning and the objective expression, that is, the objective positioning is required to be accurate, in line with the learning situation, with clear levels, which is conducive to the realization of the system objectives, targeted, and the objective expression is required to be clear, specific and operable, with prominent key and difficult points. CAE NTE activities analyze and diagnose CAE network teaching activities through evaluation, so as to improve the quality of CAE network teaching activities. Its evaluation object is CAE network teaching activities. In general, perfect conditions and perfect beauty are the premise and foundation, smooth and perfect process is the core key, and profound and exquisite achievements are the final embodiment. This is the basis for evaluating CAE online teaching activities, and together constitute the evaluation objective system, as shown in the evaluation objective tree in Figure 1.

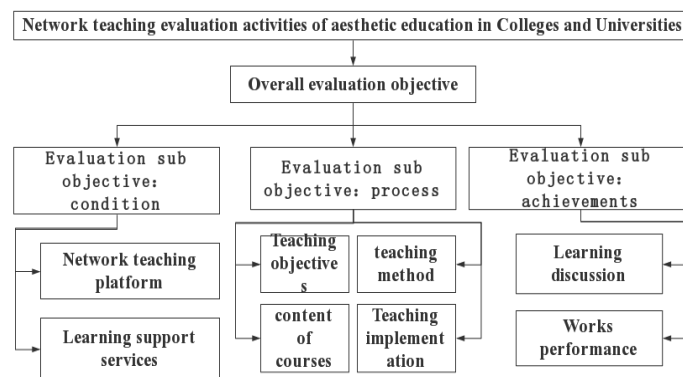


Figure 1. Evaluation target tree of CAE Network Teaching

Objective tree method is an effective means to establish and analyze the evaluation objective system. The evaluation objective tree is formed by decomposing the overall evaluation objective layer by layer and graphically using the system analysis method [9].

2.2.2 Determination of Evaluation Contents

Combination of qualitative evaluation and quantitative evaluation: quantitative evaluation and qualitative evaluation have their own advantages and disadvantages. The online teaching evaluation of AE in CAU should organically combine the two and take their advantages respectively. It is not only easy to operate the quantitative evaluation, facilitate the automatic collection, processing and analysis of data, but also the personalized analysis and interpretation of qualitative evaluation, so as to promote the development of teaching. The evaluation results of online teaching evaluation of AE in CAU should be qualitatively evaluated on the basis of quantitative evaluation, taking into account the particularity of online teaching types of AE in CAU, teaching personality and student characteristics, and further making scientific and accurate teaching improvement suggestions [4].

Combination of internal evaluation and external evaluation: internal evaluation, i.e. "self-evaluation", refers to the inspection and evaluation of the evaluated object according to the evaluation criteria and in combination with the actual teaching preparation, teaching process and teaching effect. Internal evaluation promotes the online teaching team of AE in CAU to conduct self-assessment and reflection, actively find problems in the whole process of teaching activities, constantly optimize teaching activities, and it is easy to implement. Internal evaluation provides a lot of favorable information and data for the effective implementation of external evaluation. The effect of external evaluation should be combined with regular internal evaluation in order to play effectively, and to learn from the successful experience of AE network teaching reform in other CAU or regions with characteristics and localization [5]. Therefore, regular internal evaluation and regular external evaluation within a reasonable time frame can be creatively combined.

2.3 Provide Intelligent Network Teaching Improvement Decision

The construction of intelligent NTE platform for AE in CAU is an important measure to create the network teaching activities of AE in CAU with internal logical beauty and external formal beauty. Combined with the AE teaching evaluation objectives and evaluation indicators, it intelligently analyzes and processes students' learning data and teaching process data, provides students with learning suggestions, provides

teachers with scientific decisions for teaching improvement, and truly improves students' aesthetic experience. Realize students' aesthetic development.

The intelligent evaluation results need the intelligent college AE network teaching platform to load the college AE NTE indicators to collect, store and analyze student data and teaching process data in a high-speed and effective way, and then visually present them to students, teachers and other relevant departments through visualization technology. Intelligent analysis technology optimizes the existing network teaching comprehensive platform or loads the AE evaluation module, which is also an effective way to intelligently collect and analyze evaluation data.

2.3.1 Intelligent Collection of Evaluation Data Using Emerging Technologies

The premise of efficient evaluation is the intelligent collection and processing of evaluation data. Intelligent information processing technology is the "representative form of socialized development of digital programs". The fields involved include big data integration and mining, intelligent information retrieval and processing, quantum computing, and intelligent customer data processing in the popular e-commerce, government affairs and other fields. It is characterized by intelligent and intelligent processing of massive and complex information. Intelligent analysis is to find useful information, knowledge and intelligence from the massive data collected and retrieved. The new generation of artificial intelligence technology is gradually making intelligent analysis a reality [8].

2.3.2 Scientific and Accurate Evaluation based on Indicators

The scientific and accurate online teaching evaluation of AE in CAU is to intelligently collect, store, analyze and calculate the data according to the students' learning and teachers' teaching conditions in combination with the evaluation indicators, obtain the visual charts and data, and dynamically generate reasonable feedback information. In this process, the evaluation data screened by combining the indicators is the core, which is different from the traditional teaching. The students' learning data and teachers' teaching data are subjective through visual observation or filling in questionnaires. The learning data and teaching data collected by the college AE network teaching platform are automatically generated, monitored and recorded by the system to ensure that most of them are objective and reliable, thus ensuring the scientificity of the evaluation Effectiveness and accuracy.

2.3.3 Provide Intelligent Teaching Improvement Decision

The NTE of AE in CAU is not an end in itself. The purpose is to promote teaching improvement through evaluation, so as to realize students' aesthetic development. The automatically generated conclusion is exactly the effect of the above evaluation conclusion of AE teaching evaluation power of all parties through algorithm in-depth learning and simulation. Of course, the evaluation and re evaluation of AE teaching evaluation power of all parties is also necessary. The construction of intelligent NTE platform for AE in CAU is an important measure to create the network teaching activities of AE in CAU with internal logical beauty and external formal beauty. Combined with the AE teaching evaluation objectives and evaluation indicators, it intelligently analyzes and processes students' learning data and teaching process data, provides students with learning suggestions, provides teachers with scientific decisions for teaching improvement, and truly improves students' aesthetic experience. Realize students' aesthetic development [2].

3 RESEARCH METHODS OF NTE OF AE IN CAU FROM THE PERSPECTIVE OF COGNITIVE SCIENCE

3.1 Research Methods

This paper uses the online questionnaire survey method to investigate and count the scoring results of online teaching activities by applying the online teaching evaluation index system to CAE teachers and network teaching managers. This paper mainly uses questionnaire star to distribute questionnaires online. A total of 585 questionnaires were distributed online. Be CAU use there will be a small reward after filling in the questionnaire, the efficiency of the recovered questionnaire is 100%.

3.2 Data Processing and Analysis

In this paper, SPSS 22.0 software is used to count and analyze the questionnaire results, and t-test is carried out. The t-test formula used in this paper is as follows:

$$t = \frac{\bar{X} - \sigma}{\frac{\delta X}{\sqrt{r}}} \quad (1)$$

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{(r_1 - 1)s_1^2 + (r_2 - 1)s_2^2}{r_1 + r_2 - 2} \left(\frac{1}{r_1} + \frac{1}{r_2} \right)}} \quad (2)$$

Where, formula (1) is a single population test, which is the average number of samples, δ is the standard deviation of samples, and R is the number of samples. Formula (2) is a double population test, and the sum is

the variance of two samples, and the sum is the sample size.

4 EXPERIMENTAL TEST ANALYSIS

In order to test the effectiveness of NTE of CAE from the perspective of cognitive science, this paper regards CAE teachers and network teaching managers as experts; The evaluation index system and the national credibility is the reliability of the test. In this evaluation, two researchers gave different scores for the same online teaching activity, which were estimated using Spearman's grade correlation method. The scores of the two researchers were imported into spss, and the results are shown in Table 1. Score 1 and score 2 respectively represent the scores of the two researchers on the online teaching activity using the CAE online teaching evaluation index system.

Table 1. Reliability test results

		Score 1	Score 2
Score 1	correlation coefficient	1.000	0.844
	Significance	0	0
	N	20	20
Score 2	correlation coefficient	0.844	1.000
	Significance	0	0
	N	20	20

According to the data in the above table, the correlation coefficient of Spearman's grade is 0.843, indicating that the two researchers' evaluation using the CAE index system is highly consistent, that is, it is reliable to use this index system to evaluate the CAE online teaching.

Spearman Brown formula is an estimation formula of reliability coefficient of psychology or pedagogy test. It is a basic test that K times the known reliability. Let S_{aa} be the reliability of a unit length test, then the reliability of the test with length k is $ks_{aa}/[1 + (k-1)s_{aa}]$; The formula of the relationship between the change of test length and the quantity of test reliability, namely:

$$S_{kk} = \frac{ks_{aa}}{1 + (k-1)s_{aa}} \quad (3)$$

Where k is the ratio of the extended test length to the original test length, which is the reliability value of the original test, and S_{aa} is the estimated reliability value when the test length is k times the original test length. When calculating split half reliability. If the test length is only half of the original, the reliability will be reduced.

The length of the whole test is twice the length of the half test. Substitute 2 into the above formula, that is:

$$s_{aa} = \frac{2s_{aa}}{1 + s_{aa}} \quad (4)$$

The reliability was significantly improved. When the test is lengthened, the representativeness of test sampling can be improved, so as to better measure the true level of the subjects; The more questions there are in the test, the random errors in the questions can offset each other.

This paper measures the effectiveness of the online teaching evaluation index of CAE by testing the correlation validity of the criterion, and takes the scoring results evaluated by the national excellent course evaluation index (comprehensive evaluation part) as the criterion to check the correlation between the scoring results evaluated by the online teaching evaluation index of CAE and the criterion. Import the scoring results into SPSS for correlation analysis. The results are shown in Figure 2 below. Among them, score 3 and score 4 are the scores obtained by two researchers according to the evaluation indicators of national excellent courses.

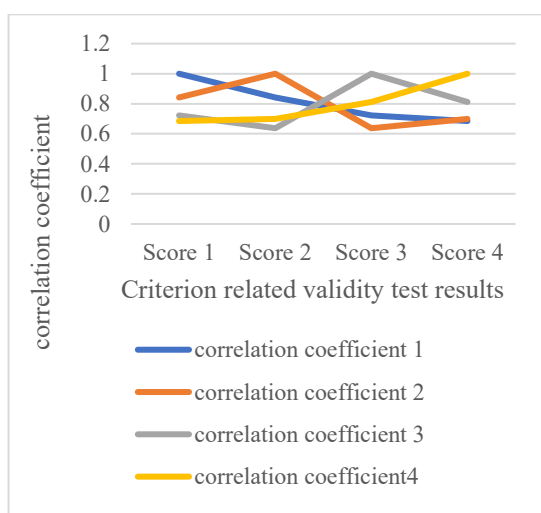


Figure 2. Scoring results of online teaching evaluation of AE in CAU

It can be seen from the above figure that the correlation degree between the scoring results evaluated by the CAE online teaching evaluation index and the evaluation results of the effective standard is greater than or equal to 0.637 (the correlation coefficient between score 2 and score 3 in Figure 3), with a medium intensity correlation. The significance is less than 0.05. Therefore, at the significance level of 0.05, the online teaching evaluation index system of CAE is significantly related to the evaluation index of national excellent courses (comprehensive evaluation part). This shows that the NTE index system of AE in CAU is effective and reasonable. To sum up, the NTE index system of CAE

constructed under the visual valve of cognitive science is reasonable, effective, reliable and stable.

5 CONCLUSIONS

Under the visual valve of cognitive science, this paper constructs the evaluation index system of network teaching of AE in CAU and the guarantee system for its smooth implementation. Although we try to reflect the problems of online teaching evaluation of AE in CAU more comprehensively, appropriately and profoundly, there are still the following deficiencies: we need to continue our efforts to expand the sample size of expert investigation and online teaching activities of AE in CAU, and enhance the theoretical depth of research; Continue to improve the evaluation contents and methods.

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