Research on the Evaluation Index System of Art Literacy Cultivation of Rural Primary School Teachers

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Abstract

The importance of art literacy to primary education lies in the fact that it is not only a subject, but also an important means to cultivate students' all-round development. Teachers are the key figures in art education, and the level of art literacy of teachers directly affects the level of students' art literacy. However, compared with urban primary schools, there are many problems in rural primary education, so it is of great significance to improve the level of art literacy of rural primary school teachers and promote the development of the entire primary education. This paper analyzes and evaluates the art literacy of rural primary school teachers, which is conducive to grasping the current level of art literacy of rural primary school teachers, and effectively promotes the establishment of an evaluation system and mechanism for rural primary school teachers' art literacy. Based on the analysis of relevant literature, the evaluation index framework of rural primary school teachers' art literacy was preliminarily constructed, and through two rounds of expert consultation, structural equation model indicators, and determining the weight of indicators, a rural primary school teachers' art literacy evaluation index system consisting of 3 first-level indicators, 5 second-level indicators and 15 third-level indicators was finally formed. Through a questionnaire survey of 210 rural primary school teachers, it was found that the index system has high scientific and use value, and can effectively diagnose the art literacy level and shortcomings of rural primary school teachers, and provide a certain reference for the cultivation of art literacy of rural primary school teachers in the future.

Keywords: *rural primary school teachers, art literacy, evaluation index system.*

1. Introduction

The promotion of rural revitalization and rural education modernization is in full swing. The construction of beautiful countryside urgently needs to be further strengthened in aesthetic education. In June 2019, the Notice of the General Office of the Ministry of Education on Carrying out the Action Plan for Aesthetic Education Immersion in Sports launched the Aesthetic Education Immersion Action Plan. This plan opened a broader world for aesthetic education in rural primary schools. It strive to enable every rural student to enjoy fair and high-quality art education, which is conducive to improving the quality of students' aesthetic education, promoting social civilization and customs, and promoting the revitalization of rural education (Gao, 2021). Teachers are the key figures in art education, and the level of art literacy of teachers directly affects the level of students' art literacy. However, there are many problems in rural primary education. For instance, the degree of teachers is relatively low; or teachers are lack of sustainable

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training; or the high wastage rate of teachers caused by low welfare, and so on. The shortage of excellent teachers is one of the most critical problems (Han, 2019). Therefore, through literature combing, we comprehensively understand and analyze the current situation of the evaluation system of art literacy training of primary school teachers in China, and further analyze and propose the basic components of art literacy of rural primary school teachers. On this basis, the structural model and ability evaluation system of this literacy cultivation are preliminarily constructed, in order to provide a certain reference for evaluating and improving the art literacy of rural primary school teachers (Liu, 2018; Jia, 2019).

2. Literature review

2.1 Overview of art literacy

Researcher Yu (2021) now defines art literacy as: the ability to feel, experience, evaluate and actively create art after learning art courses and art-related knowledge, as well as its emotional attitudes and values towards art. The art literacy of teachers is different from the art literacy of students, and also different from the art literacy of art experts and other teachers. Wang (2020) believes that the art literacy of preschool teachers should be a combination of preschool teachers' art emotional attitude, art values, art knowledge and art ability.

2.2 Research on the cultivation of art literacy

Regarding the research on the cultivation of art literacy, the research objects that have been studied are mainly divided into two types, one is ordinary students, mainly refers to young children, primary and secondary school students, and high school students; The second is the students and teachers of various senior teachers, who are trained to become all kinds of teachers at all levels in the future. Research on the cultivation of art literacy covers most of the population.

2.3 Research on the constituent elements of teachers' art literacy

Based on the reading of literature, it is found that scholars have different understandings of teachers' art literacy. Some believe that teachers should have corresponding basic art skills, such as board books and blackboard newspapers (Chen, 2018). Apply their basic art abilities in practice to improve their own and students' art literacy. There is also a belief that teachers' art literacy is mostly conceptual awareness, what is the conceptual attitude of art teachers to art, and secondly, they also agree that knowledge and skills also occupy a place in teachers' art literacy, of which skills are ranked last (Wang, 2019; Wang & Zhang, 2019). It can be found that whether it is an art teacher in a primary school, middle school or kindergarten, the composition of art literacy is different when targeting different students, but almost every scholar can judge art literacy from the teacher's conceptual attitude and the teacher's own ability and skills, all believe that the teacher's art literacy is not single, its composition is based on the difference between teaching and objects, in different practice venues, in the face of different educational objects, scholars can define the constituent elements of teachers' art literacy based on the practice site (Wang, 2020).

2.4 Research on teachers' art literacy training strategies

Reviewing the literature, it was found that there were more studies on primary school art teachers in the research on teachers' art literacy cultivation strategies, but there were fewer studies on rural primary schools. The research findings and suggestions from the existing research on teachers' art literacy cultivation strategies can be summarized into the following two points: (1) Master relevant knowledge, that is, basic art theory knowledge and certain humanities knowledge. (2) Master basic skills and techniques, that is, the

content of modeling ability and the cultivation of modeling ability (Wang & Zhang, 2020; Zhao, 2020).

3. Design and improvement of the evaluation system for the cultivation of art literacy of rural teachers

3.1 Design of evaluation index system

The standard of art literacy of rural primary school teachers is used to evaluate the level of their art education, which covers the elements of assessing their basic literacy and ability. These standards were formulated in accordance with China's national basic education curriculum reform standards for fine arts, the Education Law of the People's Republic of China and other relevant regulations, and took into account factors such as China's historical, cultural and social background, as well as the age and cognitive level of students. At the same time, it draws on the teacher literacy standards of the National Association for the Education of the Fine Arts (NAEA), combining American laws and regulations, as well as local cultural and social contexts. In addition, reference is made to the guidance indicators for elementary school art education teachers developed by the Japan Institute of Education and Culture and the Visual Arts teaching standards of the education department of Victoria, Australia. These standards take into account the cultural, historical and social backgrounds of different countries or regions, and are based on factors such as the age and cognitive level of the students to develop art literacy standards suitable for local rural primary school teachers. The cultivation standards for art literacy of rural primary school teachers are condensed according to the five core competencies of the "Compulsory Education Art Curriculum Standards", namely image reading, art expression, aesthetic judgment, creative practice and cultural understanding (Zhang & Yang, 2018).

Table 1 Description of the evaluation objectives of art literacy of rural primary school teachers

Evaluation objectives	Evaluation content	Evaluation criteria	Qualitative evaluation
Image reading	Observation, analytical ability	Students have the accuracy of observation of details and features in images, and the ability to analyze composition and color use	Correctly point out students' strengths and areas for improvement in image literacy, and provide specific observations and explanations
Artistic expression	Ability to use technology and perform	Students' ability to use art materials and techniques, and their ability to express ideas, emotions and opinions	Correctly point out students' creativity and expressiveness in art expression, and provide specific work analysis and evaluation
Aesthetic judgment	Ability to appreciate and evaluate art	Students' perception and understanding of works of art, and the accuracy of evaluation of works of art	Correctly evaluate students' aesthetic views, and provide specific works comparisons and point of view explanations

Creative practice	Creative thinking, creative process	Students' creativity and independent thinking, planning and implementation of the creative process	Correctly point out students' innovative and problem-solving abilities in creative practice, and provide specific creative processes and creative descriptions
Cultural understanding	Art history, cultural diversity, intercultural contrast, cultural awareness, art and social relations	Students' understanding of art history, different cultural contexts, cross-cultural contrasts, cultural awareness, and art-social relations	Correctly guide students' level of awareness and awareness in terms of cultural understanding, providing concrete examples and explanations of perspectives

3.2 Revision of the evaluation system

In order to verify the scientificity and rationality of the evaluation indicators, and the scope of research is Hunan Province, we selected 15 experts who do relevant work in Hunan Province for consultation, and these experts meet at least two or more of the following conditions: (1) have presided over teaching and research projects at or above the provincial level; (2) Have opened or participated in the teaching of online courses; (3) Have published papers or other publications in teaching scholarship or teaching research; (4) Hold important management positions in teaching and teaching affairs in the school and have greater influence. In order to further clarify the relationship between the evaluation elements of teaching academic ability, it is verified by using structural equation model.

Using the Delphi Expert Consultation Method, we distributed the first round of expert consultation forms to 15 experts by email and WeChat, and received a total of 13 effective expert consultation forms. From the perspective of geographical distribution, the area to which the experts belong covers 7 prefecture-level cities and 1 autonomous prefecture in Hunan Province, China, which is representative to a certain extent. In terms of expert titles and academic qualifications, the number of people with the titles of professors and associate professors accounted for 81.62% of the expert group; 8 experts who have obtained doctoral degrees; Among them, there are 2 doctoral supervisors, and other experts are master's supervisors, which has high authority. From the perspective of teaching experience, all experts have more than 10 years of teaching experience and have rich teaching practice and teaching and research experience.

Conduct of the first round of expert consultation and revision of indicators We analyze the importance of each indicator item mainly based on the percentage, average, mode and median of the expert score, the higher the average, the more important the indicator item; By the difference between the upper and lower quantiles (IQR). The quartile method is one of the commonly used methods to judge the concentration of expert opinions in the Delphi method, and when the difference between the upper and lower quantiles is 0, the concentration of expert opinions is the highest. When the difference between the upper and lower quantiles is between 0 and 1.8, the expert group has a good concentration of opinions; When the difference between the upper and lower quantiles is between 1.8 and 2.0, the concentration of opinion of the expert group is moderate; When the difference between the upper and lower quantiles exceeds 2.0, the expert group is less concentrated. The first round of expert comments included three categories: "modifying the

name/description of indicators", "adding/deleting indicator items" and "changing the ownership relationship of indicators".

On the basis of the first round of expert review, a second round of questionnaires was sent to 13 experts, and a total of 13 validly completed questionnaires were received, with a positive coefficient of 100.00%; The interquartile difference for each option was less than 1.8, indicating a good concentration of expert opinion in the second round. In order to further ensure the reliability and consistency of expert advice, we calculate the Cr value of the authority degree of the 13 experts by the formula Cr=(Cs+Ca)/2 as 0.89, indicating that the consulting experts have a high authority, and the advice has certain reference significance and reliability. Compared with the coordination coefficient of the first round of expert consultations, the coordination coefficient of the second round of consultations reached 0.81, indicating that the expert opinions tended to be unified.

Through two rounds of expert review, we determined the evaluation system of art literacy of rural primary school teachers, consisting of 3 first-level indicators, 5 second-level indicators and 15 third-level indicators. By calculating and analyzing the scores of 13 experts on the importance of each indicator in the matrix, and adjusting the matrix element values to a consistency ratio CR value less than 0.1, we finally established the evaluation index system of online teaching academic ability of college teachers (see Table 2).

Table 2 Evaluation indicators of art literacy of rural primary school teachers

Level 1 indicators	Weight value	Level 2 indicators	Weight value	Level 3 indicators	Weight value
Basic literacy of fine arts	0.245	Image reading	0.215	A1 Observation accuracy of details and features in the image	0.026
				A2 Ability to analyze composition	0.031
				A3 analytical ability in the use of color	0.054
Skills, technical literacy	0.278	Artistic expression	0.177	B1 Familiarity with the use of fine art materials and techniques	0.047
				B2 The ability to express ideas and ideas in creation	0.025
				B3 Ability to express emotions in creation	0.032
		Aesthetic judgment	0.073	C1 The ability to perceive a work of art	0.054
				C2 Ability to understand the work of art	0.023
				C3 Evaluation accuracy of the artwork	0.022
		Creative practice	0.118	D1Creative and independent thinking skills of D1 teachers	0.041
				D2 Ability to plan the creative process	0.015
				D3 Ability to implement the creative process	0.037
Basic literacy of fine arts	0.257	Cultural understanding	0.084	E1 degree of understanding of different art history and social relations	0.081
				E2 The degree of understanding of different cultural backgrounds and social relations	0.017
				E3 Degree of understanding of different cultural awareness and social relations	0.066

4. Application of the Art Literacy Evaluation System for Rural Primary School Teachers

In order to further verify the effectiveness and feasibility of the evaluation index system, we transformed the above evaluation index system into an online questionnaire, invited 230 currently on duty rural art teachers in Hunan to participate in this research activity, and divided the ability level into four levels: excellent, good, average and poor. A total of 225 questionnaires were collected. After data verification and confirmation, 15 of them had issues with incomplete filling and duplicate data, which were considered invalid questionnaires. Finally, 210 valid questionnaires were confirmed to have been collected.

From the collection area of the survey sample data, the teachers participating in this online survey are from 28 rural primary schools under the jurisdiction of 10 cities in Hunan. Among them, there are 12 teachers with teaching experience of more than 30 years, 307 teachers with teaching experience of less than 30 years and more than 20 years, 326 teachers with teaching experience of less than 15 years and more than 10 years, 411 teachers with teaching experience of less than 10 years and more than 5 years, and 204 teachers with teaching experience of less than 5 years; The professional titles of the surveyed teachers include senior, first level, second level, and third level teachers. Through SPSS testing and correlation analysis, the reliability coefficient of the questionnaire is 0.988; Among them, the first level indicators are 0.956, 0.945, 0.969, and 0.968, all greater than 0.9. This indicates that the reliability of the survey data is of high quality and can be used for further confirmatory factor analysis of questionnaire data. After confirmatory factor analysis, it was found that all validity factors had a load capacity Std value greater than 0.6 in the common factor, which reached the standard range (greater than 0.6), thus ensuring the structural validity of the scale; If the SMC is greater than 0.3, it indicates that the question has reliability; CR is greater than 0.7 or above, indicating sufficient internal consistency between dimensions;

It is generally believed that when the CR value is greater than 0.7 and the AVE value is greater than 0.5, the consistency between the measurement variable items is acceptable (Fornell & Larcker, 1981); Therefore, the reliability and inter dimensional convergence validity of this model in measuring questions are good. As shown in Table 3:

Table 3 Reliability and Convergence Validity Test Data Table

Dimension	topic	Std	SMC	CR	AVE
Image Reading	A2	.810	.656	.759	.512
Art expression	A1	.854	.729		
Aesthetic judgment	A3	.815	.664		
Creative Practice dimension	B3	.815	.664	.762	.517
	B1	.799	.638		
	B2	.875	.766		
Image Reading	C1	.811	.658	.759	.512
Art expression	C2	.861	.741		
Aesthetic judgment	C3	.805	.648		
Creative Practice dimension	D2	.752	.566	.811	.577
	D1	.748	.560		

	D3	.748	.560		
Image Reading	E2	.870	.793	.768	.523
	E1	.753	.567		
	E3	.834	.702		

Using AMOS for structural model testing, considering that the minimum fit functional Chi G square value of the absolute fit index is easily affected by the sample size, some scholars suggest using the ratio of the chi square value to its degree of freedom as the standard, combined with the goodness of fit index (GFI), standard fit index (NFI), increased fit index (IFI), and comparative fit index (CFI) as supplementary values, with a range of 0-1, The closer to 1, the better. The root mean square (RMSEA) of the approximation error should be less than 0.05, and the smaller the better (Bagozzi & Yi, 1988).

Goodness of Fit Index (GFI) and Adjusted Goodness of Fit Index (AGFI). GFI and AGFI reflect the proportion of covariance that the hypothetical model can explain. The larger the goodness of fit index, the higher the degree of explanation of the independent variable for the dependent variable, and the higher the percentage of changes caused by the independent variable in the total change. It is generally believed that GFI and AGFI values greater than 0.9 indicate a high degree of fit between the model and the data. Therefore, it can be considered that the model fits the sample data well and has a good degree of fit.

Table 4 Model goodness of fit table

Fit indicators	Acceptable suggestions	Fit value of this model
Chi square value and degree of freedom (Chi square/df)	1—5	1.17
Root Mean Square of Approximate Error (RMSEA)	<0.05—0.08	0.03
Normative goodness of fit index (NFI)	>0.9	0.92
Non canonical fit index (NNFI)	>0.9	0.97
Model Comparison Fit (CFI)	>0.9	0.97
Value added fit index (IFI)	>0.9	0.97
Goodness of Fit Index (GFI)	>0.8	0.93

5. Conclusion and Recommendations

The above evaluation standard measurement table can serve as a reference for evaluating the cultivation of art literacy of rural primary school teachers, and can also serve as a reference for guiding art education for rural primary school teachers.

The cultivation of teachers not only has significant functions and values for the professional development of teachers, but also has profound impact on the reform of teacher education in higher normal universities. This study attempts to find the most suitable way to achieve freedom in rural aesthetic education. In the end, he found aesthetics and art, and clearly linked beauty with human freedom, hoping to bridge human emotions and rationality through aesthetics and art, The division between

individuals and society. For cultivating rural art teachers who love their thoughts, countryside, children, and education, we should establish a clean and honest rural culture, lead rural social customs, and effectively promote the reform and development of rural school aesthetic education, providing theoretical and practical guidance. Focusing on the value of individual and human life, emphasizing the adherence to human natural nature, achieving harmonious unity between humans and themselves, humans and nature, and humans and society, thus achieving an aesthetic realm of spiritual freedom and self adaptation. This is similar to Marx's teleology of comprehensive human development. Only by improving the professional development level of art teachers in rural areas can we better improve the quality of rural education and implement the strategy of rural revitalization.

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