Design and Performance Analysis of a Training Mode for Digital Media Majors

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Abstract—Under the influence of various factors, it is difficult to achieve a good quality in the training of digital media majors. What is worse, the current performance analysis models for the training quality cannot effectively handle uncertain information. To overcome these problems, this paper tries to design a training mode for digital media majors, and evaluates the performance of the model. Firstly, the defects of the current training modes for digital media majors were summarized in the context of the new era, and the implementation strategies and paths were formulated for improving the effect of the training mode. Further, a novel evaluation index system (EIS) was constructed to evaluate the performance of the said training mode, aiming to effectively assess the implementation effect of the mode. Besides, fuzzy system and grey system theories were fully integrated to build an improved performance analysis model for the training effect of digital media majors. The proposed model can effectively process the fuzzy information, and provide a strong support to the smooth implementation of the training mode for digital media majors. The research results boast profound theoretical and engineering values.

Keywords—college students, digital media, training mode, performance analysis, comprehensive evaluation

1 Introduction

In this new era, as the modern education is developing constantly, our society has posed more urgent requirements for college graduates, and modern education institutions have attached greater attention to the training works and training quality of college students [1-2]. The training mode of college students is a core link in the cultivation of college students, and whether the adopted training mode is effective or not directly determines the success of modern education, therefore, the research on the training mode of college students has gradually become a hot spot in modern education [3-5]. The digital media major is an important discipline in current colleges and universities, it cultivates talents specialized in digital media. To solve the various defects existing in the training process of digital media majors and improve the training quality, many field scholars have conducted a series of studies from multiple perspectives, and their

research findings have provided powerful supports for the constant improvement of the training mode for digital media majors. For example, Li and Wang [6] analyzed the problem that the course teaching arrangement, internship and practice link, professional curriculum setting, and the talent cultivation mode of digital media majors are out of step with the requirement of the society, and they explored a new training mode for solving this problem. Liu [7] discussed how to cultivate the innovative ability of digital media majors in the context of "Internet +". Wu [8] analyzed how to train digital media majors in the context of Internet environment and proposed a few countermeasures, which provided a reference for the training of digital media major. Liu et al. [9] analyzed problems existing in current digital media major training modes and analyzed a new mode from a few aspects such as the cultivation of practical and innovative ability, the construction of curriculum system, and the analysis on the characteristics of the discipline, and their study is of good reference value.

However, due to the continuous development and changes of the society, more influencing factors should be taken into consideration during the implementation of the training mode of digital media majors, in particular, some factors contain uncertain information, and this requires researchers to measure the training mode of digital media majors in a scientific and reasonable manner, and a set of systematic measurement systems and models have become a necessity for assisting the healthy development of the training mode of digital media majors. For this purpose, this paper drew on relevant research results, comprehensively adopted a few research methods such as survey and investigation, summary and analysis, theoretical innovation, and model optimization, and employed a few theories such as the grey system theory [10-12], fuzzy system theory [13-15], and AHP [16-18] to design a new EIS and a multi-attribute fuzzy analysis model for studying the performance analysis of the training mode of digital media majors.

The research content of this paper consists of 5 parts: the first part gave an overview of the research content of college student cultivation in the context of the new era; the second part analyzed a few defects existing in the training process of digital media majors; the third part discussed several strategies and paths for the implementation of the training mode of digital media majors; the fourth part studied the performance analysis of the training mode of digital media majors, and gave the corresponding EIS and the multi-attribute fuzzy performance analysis model; the fifth part is the research conclusion.

2 Defects in the training process of digital media majors

2.1 Unclear training goals

After surveying and analyzing the situations in a few colleges and universities, it can be known that the training goals of the digital media major in these schools are not clear at all. The training goals are the professional orientation for the training of digital media majors, and unclear training goals would lead to uncertainties in the directions of talent training. Such unclear training goals are mainly reflected in two aspects: first, the

schools haven't got a systematic plan for the training of digital media majors, some of them just copy the talent training systems of other schools, these borrowed plans seem good but actually undirected, and they are neither fish nor fowl. Second, although some schools do have certain plans or system for training digital media majors, the positioning is blurred, for instance, there isn't a clear separation for whether the talent training goals should be to train skill-type or research-type digital media majors, and this situation has also led to the dilemma that the schools are not sure what type of professional talents should they cultivate, and this can affect the execution of teaching plans and pose great limitations on talent training.

2.2 Incomplete curriculum system

Compared with other traditional majors, the digital media major is a new discipline, and its curriculum system construction has only experienced a short period of time, resulting in a few shortcomings in the curriculum system, first, the current curriculum is unsystematic, this is because the development of the curriculum system of any major needs to undergo a process from zero to one, and from simple to complex; relatively speaking, the process from zero to one is easier, but the process from simple to complex requires long term practical examination from multiple aspects, levels, and dimensions. Second, the current curriculum system is not representative enough, for the digital media major, the teaching content should be extracted based on the teaching plans of the courses, and the training process of digital media majors often involves the lecturing of knowledge of multiple disciplines, therefore, if the teaching content has only been extracted from a single perspective or a single level, the compiled textbooks and the curriculum system would be single-sided and not comprehensive enough. Third, the existing curriculum system doesn't have an inheritance mechanism, the professional courses of the digital media major change very fast, in particular, due to the dynamic nature of the development of the times, the teaching contents of some courses are of poor or even no correlation, which is not conducive for students to absorb the professional knowledge. In addition, the teaching content of some courses has not updated for years and couldn't keep up with the requirement of the times, and it is not good for the training of digital media majors.

2.3 Theoretical learning is detached from practice

Digital media major is a comprehensive discipline with significant practical and interdisciplinary features. The training process of digital media majors not only requires college students to have a solid professional knowledge foundation, but also possess the ability to transform the basic professional knowledge and combine with social practice. This major enhances students' ability to absorb knowledge and transform the knowledge they learnt to reflect the social application value of the knowledge. However, in most schools, current training process of digital media majors only focus the theory learning link, they set a lot of basic professional courses for theory learning, indeed these courses offer a great help for students' knowledge learning and understanding, however, the schools haven't done enough in terms of practice courses. First,

there're few practice courses for digital media majors in schools; second, although some schools may have a few practice courses, they usually become a mere formality and lack the specific application link, which resulted in great limitations in the deepening and expansion of professional knowledge, and this is against the training goals of high-quality digital media majors.

2.4 Limited basic inputs

The very limited basic inputs are a common problem for the digital media major in most schools. Basic inputs are the fundamental and prerequisite conditions for the training of digital media majors. A school with good basic inputs could provide good learning environment, development opportunities and employment conditions for students, and it's easier to strengthen their comprehensive quality; conversely, a school with insufficient basic inputs couldn't provide favorable learning environment, development opportunities and employment conditions for students, and the students cultivated by such school would be greatly affected. The direct manifestations of the limited basic inputs are: lacking classrooms with modern digital media equipment for the training of students; lacking teaching centers or platforms with intelligent and technical facilities; lacking a high-level faculty; and lacking opportunities for external exchange and learning, and all these have an adverse effect on the training of digital media majors.

2.5 Outdated course teaching process

The teaching of professional courses of the digital media major includes several aspects, such as teaching content, teaching plan, teaching method, teaching tool, and teaching environment, etc. The outdated course teaching process refers to the facts that during the implementation process of some or all teaching links, these links cannot well fit the developmental requirement of the times, there're some defects with some or all the links, an example is the selection of teaching materials, some schools' teaching materials of the professional digital media courses are quite old, which cannot meet the professional requirement of the digital media industry at present; some schools' teaching plans of the digital media major fail to adaptively adjust according to the changes in the talent training goals, which has resulted in a disconnection between the teaching plans, syllabus, teaching tasks formulated and the talent training practice. Besides, with the constant advancement of science and technology, the emerging intelligent technologies provide a good support for course teaching, however, some schools fail to effectively make use of these technologies in the course teaching of digital media major, resulting in the current situations that their teaching methods, teaching tools, and teaching environment are outdated.

3 Strategies and paths for implementation of the training mode for digital media majors

As summarized above, there're many defects with the training process of digital media majors, therefore, in order to effectively improve the training quality of digital media majors, it's necessary to take corresponding strategies and paths. Through survey and analysis, this study proposes to take measures in the following aspects:

3.1 Increase basic inputs

Increasing basic inputs in the construction of the digital media major is the most fundamental condition for ensuring the training quality of digital media majors, and this paper holds that works of this aspect could be carried out from the following three directions: first, increase fiscal support of the government, the education work of digital media major is a very important link in higher education, it plays an indispensable part in the training of digital media majors, and can greatly promote the development of the society. Therefore, increasing the fiscal support of government is the most direct means for the training of digital major majors. Second, seeking investment from social institutions, in terms of the employment of digital media majors, the training of digital media majors is closely related to social requirement, and only by increasing social investment can the digital media talents better integrate into the society. Third, strengthening the schools' ability in self-sufficiency, schools of different levels generally receive different social inputs and government support, for low-level schools, they need to strengthen their ability in self-sufficiency and make efforts to depend on themselves to construct the schools.

3.2 Update teaching ideas and enhance teaching effect

Teaching ideas have a decisive role in student training, and whether the teaching ideas are correct and advanced have a direct impact on the execution of subsequent teaching activities. For this reason, this paper holds that the training of digital media majors must determine the teaching ideas with clear orientation and make the teaching ideas be coordinated with the requirement of the times; then, under the guidance of these teaching ideas, the teaching contents, schemes, tools, and methods of the professional courses of the digital media major should be improved to better adapt to the teaching requirement and ensure the improvement of the teaching effect. One thing that needs to be emphasized is that the teaching contents, schemes, tools, and methods of the professional courses of the digital media major are not static, all these links are in dynamic development and they must be improved and updated based on the actual teaching situations.

3.3 Compile classic textbooks and form a demonstrative course system

The lacking of classic textbooks is a very important factor affecting the training quality of digital media majors. Investigation results revealed that some schools referred to the application status of other high-level schools when selecting textbooks for their digital media majors, and they ignored the development status and basic conditions of their own students, as a result, their students couldn't be taught according to their aptitude, and the selected textbooks might not adapt to their own situations, and the desired application effect couldn't be achieved. Therefore, this requires different schools to compile their own textbooks for the professional courses of digital media major based on the development status of the schools and the basic quality level of their students, so that the textbooks could better fit the training requirement of students at each school, and they are no longer just hard copies. Considering that many textbooks need to be compiled for the professional courses of digital media major and it is a load of work, so it's suggested to start from compiling the most classic textbooks and take them as good demonstrations to promote the compiling of other textbooks, and eventually forming a demonstrative course system which can provide useful support for the training of digital media majors.

3.4 Improve the ability level of the faculty and build a teaching talent echelon that can grow well

The faculty of digital media major is the direct executor of student training works, and the comprehensive quality of the teachers directly determines the limit of the comprehensive quality of the students. Therefore, it's necessary to improve the comprehensively quality level of the faculty of digital media major, and this paper proposes to do well in the following three aspects: first, the faculty of digital media major should be in an echelon formation, the implementation of teaching works is a gradual and progressive process which cannot be done overnight, only by forming a teaching talent echelon of digital media major can the training of digital media majors be sustainable. Second, input more efforts to the cultivation of the comprehensive teaching ability of school teachers, from the perspective of inheritance, teachers of current schools would have more features of the major in the schools. Third, it's suggested to actively introduce senior domestic and foreign teachers in the field, which could act as a catalyst for enhancing the ability of the faculty of digital media major.

3.5 Enhance the training practice of digital media majors, especially the integration of industry, school, and research

In terms of the development of the major, the essence of the training of digital media majors is to enable them to serve and contribute to the development of society, and training practice is an essential link during such process. In terms of curriculum setting, there's not much difference in the theoretical learning in each school, so the focus is how to transform theoretical knowledge into practical experience. This paper holds that,

combining with the training time of digital media majors, to enhance the training practice of digital media majors, works of the following aspects need to be done well, first, when setting the courses of the digital media major, the theoretical courses and the practical courses should be combined organically to promote the integration of theory and practice. Second, it's necessary to pay attention to the technical cooperation between social employer institutions and the training departments of digital media majors, especially some teaching bases and teaching platforms. Third, it's necessary to increase input into the training practice of digital media major, including purchasing intelligent equipment, and building systems or platforms. Fourth, attentions should be paid to the promotion and deepening of the industry-school-research integration mode, which has an important promotive effect on enhancing the training quality of digital media majors.

3.6 Optimize the training system of digital media majors

A good training system can provide a guiding guarantee for the training of digital media majors. Therefore, it is necessary to optimize the training system, to achieve such purpose, this paper holds that works of the following three aspects should be well completed: first, the formulation of rules and regulations for the teaching management works of the digital media major, and this is a basic guarantee for the smooth completion of the teaching activities; second, the formulation of rules and regulations for the student management works of the digital media major, and this is a basic guarantee for students to finish their learning tasks smoothly; third, the formulation of reward and punishment mechanism related to the teaching and learning of the digital media major, and this is an important factor for enhancing the sense of responsibility of the executors of teaching and learning activities and stimulating their work enthusiasm.

3.7 Reform and innovate the training works

Judging from perspectives of technology development and talent application requirement, the digital media major is a discipline that has a close connection with the development of the society, therefore, in view of the dynamic nature of social development and its urgent demand for senior digital media talents, the content adopted in current training programs should be able to keep pace with the times, and backward links should be reformed, for example, the teaching content should have contemporary features, the teaching tools should be more intelligent, the teaching methods should be more adaptive, the teaching schemes should be more targeted, the teaching plans should be more in line with social requirement, and the teaching modes should be more scientific and reasonable, etc., and to achieve these changes, it's necessary to reform the original content and links and innovate the training works through reform, and only innovative reform can effectively expand the developmental space of the training of digital media majors.

4 Performance analysis of the training mode of digital media majors

To examine the implementation effect of the training mode of digital media majors, it's necessary to conduct performance analysis on such training mode.

4.1 Indicator selection principles

A proper choice of indicators is the primary condition for the performance analysis of the training mode of digital media majors, thus the indicators must be selected properly based on certain principles. This paper holds that the indicator selection should follow four basic principles, namely scientific, authentic, pertinent, and quantitative. The scientific principle means that the selected indicators should have definite scientific meanings and can reflect the essential problems in the training mode. The authentic principle means that the selected indicators should be able to describe the objective reality of the performance of the training mode, the judgement shouldn't be made based on the subjective assumptions of individuals. The pertinent principle means that the selected indicators should be representative, and be able to clarify the priority of the problems of the training mode. The quantitative principle means that the selected indicators should be easily quantified to realize effective measurement of the performance of the training mode of digital media majors.

4.2 Content of the EIS

Based on survey and analysis, this paper holds that the EIS of the performance analysis of the training mode of digital media majors should be able to reflect content of five aspects: the basic professional ability, innovative thinking ability, comprehensive practical ability, self-learning ability, and training effect. The basic professional ability mainly examines students' mastery of professional courses, and whether they have a thorough understanding of the basic professional knowledge they learnt; the innovative thinking ability mainly examines whether the students can think innovatively; the comprehensive practical ability mainly examines whether students can integrate theory with practice; the self-learning ability mainly examines whether students can learn by themselves independently; and the training effect mainly refers to the results and outcomes obtained via the training of digital media majors. The specific content of the EIS is shown in Table 1.

Table 1. Content of the proposed EIS

Indicatory system	First-level indicator	Second-level indicator
EIS for performance analysis of the training mode of digital media majors	Basic professional ability	Absorption of knowledge of the professional field
		Reserve of professional knowledge
		Proficiency of professional skills
	Innovative thinking ability	Innovative design quality
		Innovative awareness cultivation

		Innovative learning quality
		Ability to analyze and solve problems
		Ability to expand and dig problems
	Comprehensive practical ability	Integration of theory and practice
		Integration of curricular and extracurricular activities
		Integration of industry, school, and research
		Knowledge expansion and deepening
		Interdisciplinary learning ability
	Self-learning ability	Ability to preview the lesson
		Ability to learn the lesson
		Ability to summarize the lesson and give feedback
		Ability to query information
		Ability to work with the team
		Ability to communicate and organize
	Training effect	Excellent rate of trained students
		Elimination rate of trained students
		First employment rate of graduates
		Student participation rate of high-level competitions
		Student award-winning rate of high-level competitions
		Transformation rate of industry-school-research results
		Completion of the training plan
		Social satisfaction
		Excellent rate of graduation thesis
		Rejection rate of graduation thesis

4.3 Indicator normalization

According to the content of the above-established EIS, the different indicators are of different dimensions and types, in order to get reliable performance analysis results, these indicators need to be normalized. Assuming there're *m* objects in the performance analysis of the training mode of digital media majors, and there're *n* indicators, then for object O_i, the value of indicator *j* can be expressed as $U_j(O_i) = \left[u_j^{\lhd}(O_i), u_j^{\rhd}(O_i)\right]$, and there're $u_j^{\lhd}(O_i) \le u_j^{\rhd}(O_i)$, $1 \le i \le m$, $1 \le j \le n$.

If indicator *j* is a benefit-type indicator, namely the greater the value, the better, then its normalization result $r_j(O_i)$ is:

$$\begin{aligned} r_j(O_i) &= \left[r_j^{\lhd}(O_i), r_j^{\rhd}(O_i)\right] \\ &= \left(\frac{u_j^{\lhd}(O_i) - \min\limits_{1\le i\le m} u_j^{\lhd}(O_i)}{\max\limits_{1\le i\le m} u_j^{\rhd}(O_i) - \min\limits_{1\le i\le m} u_j^{\lhd}(O_i)}, \frac{u_j^{\rhd}(O_i) - \min\limits_{1\le i\le m} u_j^{\lhd}(O_i)}{\max\limits_{1\le i\le m} u_j^{\rhd}(O_i) - \min\limits_{1\le i\le m} u_j^{\lhd}(O_i)}\right) \end{aligned} \tag{1}$$

If indicator *j* is a cost-type indicator, namely the smaller the value, the better, then its normalization result $r_j(O_i)$ is:

$$r_j(O_i) = \left[r_j^{\triangleleft}(O_i), r_j^{\triangleright}(O_i) \right] = \left(\frac{\max\limits_{1 \le i \le m} u_j^{\triangleright}(O_i) - u_j^{\triangleright}(O_i)}{\max\limits_{1 \le i \le m} u_j^{\triangleright}(O_i) - \min\limits_{1 \le i \le m} u_j^{\triangleleft}(O_i)}, \frac{\max\limits_{1 \le i \le m} u_j^{\triangleright}(O_i) - u_j^{\triangleleft}(O_i)}{\max\limits_{1 \le i \le m} u_j^{\triangleright}(O_i) - \min\limits_{1 \le i \le m} u_j^{\triangleleft}(O_i)} \right) \tag{2}$$

After performing normalization processing on the indicators, the differences among each indicator could be eliminated, and the performance analysis results would be more credible.

4.4 Indicator weight

Since different indicators have different degrees of contribution to the performance analysis result, they need to be assigned with different weight values. There're many weight value assignment methods but generally their calculation processes are quite complicated. This study chose the AHP method [19, 20] which is easy to calculate and its results are highly reliable, and the specific process of indicator weight assignment is:

First, determine the set of indicators that need to be weighed.

Second, invite field experts to use 1-9 ratio scale to give pairwise comparison and judgement on these indicators to get an initial indicator weight judgement matrix A.

$$\mathbf{A} = \begin{bmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & \vdots & \cdots & \vdots \\ a_{n1} & a_{n2} & \cdots & a_{nn} \end{bmatrix} \tag{3}$$

where, a_{ij} represents the degree of relative importance of indicator i with respect to indicator j, and there is $a_{ij}=1/a_{ji}$.

Third, normalize matrix A to get the weight value of indicator j.

$$w_j = \sum_{i=1}^{n} \left(a_{ij} / \sum_{i=1}^{n} a_{ij} \right) / \sum_{j=1}^{n} \sum_{i=1}^{n} \left(a_{ij} / \sum_{i=1}^{n} a_{ij} \right) \tag{4}$$

Fourth, calculate the maximum eigenvalue λ_{max}(A) of matrix A:

$$\lambda_{\max}(\mathbf{A}) = \sum_{j=1}^{n} \frac{(\mathbf{A}W)_i}{nW_i} \tag{5}$$

Fifth, analyze the consistency of matrix A, namely get the *RI* value by looking up tables and calculate *CR* (consistent ratio):

$$CR = \frac{\lambda_{\max} - n}{RI * (n-1)} \tag{6}$$

If there's $CR < 0.1$, then it indicates that the obtained weight value of indicator j is feasible, otherwise matrix A doesn't pass the consistency check, and the weight value needs to be obtained again.

4.5 Process of the multi-attribute fuzzy performance analysis

From the EIS established above we can see there's fuzzy information containing in the performance analysis that needs to be processed, and the performance analysis of the training mode of digital media majors is essentially a complex fuzzy system analysis problem, therefore, this paper adopted the fuzzy system theory and the grey system theory for analysis.

Take the maximum and minimum values of the indicators to build a maximum value sequence $R_{\Omega}(O)$

$$R_{\Omega}(O) = \left\{ \max_{1\le i\le m} r_1(O_i), \cdots, \max_{1\le i\le m} r_j(O_i), \cdots, \max_{1\le i\le m} r_n(O_i) \right\} \tag{7}$$

and a minimum value sequence $R_{\cup}(O)$

$$R_{\cup}(O) = \left\{ \min_{1\le i\le m} r_1(O_i), \cdots, \min_{1\le i\le m} r_j(O_i), \cdots, \min_{1\le i\le m} r_n(O_i) \right\} \tag{8}$$

According to the grey system theory [21-23], for object O_i, the grey correlation coefficient $\rho_j(R_{\Omega}(O_i))$ between indicator j and the maximum value sequence $R_{\Omega}(O)$ is:

$$\rho_j\left(R_{\Omega}(O_i)\right) = \frac{\min\limits_i \min\limits_j \left(\left| \max\limits_{1\le i\le m} r_j(O_i) - r_j(O_i) \right| \right) + \beta * \max\limits_i \max\limits_j \left(\left| \max\limits_{1\le i\le m} r_j(O_i) - r_j(O_i) \right| \right)}{\left| \max\limits_{1\le i\le m} r_j(O_i) - r_j(O_i) \right| + \beta * \max\limits_i \max\limits_j \left(\left| \max\limits_{1\le i\le m} r_j(O_i) - r_j(O_i) \right| \right)} \tag{9}$$

In the formula, the identification coefficient β generally takes a value of 0.5.

For object O_i, the grey correlation coefficient $\rho_j\left(R_{\cup}(O_i)\right)$ between indicator j and the minimum value sequence $R_{\cup}(O)$is:

$$\rho_j\left(R_{\cup}(O_i)\right) = \frac{\min\limits_i \min\limits_j \left(\left| \min\limits_{1\le i\le m} r_j(O_i) - r_j(O_i) \right| \right) + \beta * \max\limits_i \max\limits_j \left(\left| \min\limits_{1\le i\le m} r_j(O_i) - r_j(O_i) \right| \right)}{\left| \min\limits_{1\le i\le m} r_j(O_i) - r_j(O_i) \right| + \beta * \max\limits_i \max\limits_j \left(\left| \min\limits_{1\le i\le m} r_j(O_i) - r_j(O_i) \right| \right)} \tag{10}$$

Then the comprehensive grey correlation degree $\psi_G(O_i)$ of object O_i is:

$$\psi_G(O_i) = 1 \Big/ \left(1 + \left(\sum_{j=1}^{n} \left(w_j * \rho_j\left(R_{\cup}(O_i)\right) \right) \Big/ \sum_{j=1}^{n} \left(w_j * \rho_j\left(R_{\Omega}(O_i)\right) \right) \right)^2 \right) \tag{11}$$

According to the fuzzy system theory [24-26], for object O_i, the Euclidean distance $D_j(R_\Omega(O_i))$ between indicator j and the maximum value sequence $R_\Omega(O)$ is:

$$D_j\left(R_\Omega\left(O_i\right)\right)=\sqrt{\frac{\left|\max\limits_{1\le i\le m} r_j\left(O_i\right)-r_j^{\triangleleft}\left(O_i\right)\right|^2+\left|\max\limits_{1\le i\le m} r_j\left(O_i\right)-r_j^{\triangleright}\left(O_i\right)\right|^2}{2}} \tag{12}$$

For object O_i, the degree of fuzzy correlation $\zeta_j(R_\Omega(O_i))$ between indicator j and the maximum value sequence $R_\Omega(O)$ is:

$$\zeta_j\left(R_\Omega\left(O_i\right)\right)=1-D_j\left(R_\Omega\left(O_i\right)\right) \tag{13}$$

For object O_i, the Euclidean distance $D_j\left(R_\mho(O_i)\right)$ between indicator j and the minimum value sequence $R_\mho(O)$ is:

$$D_j\left(R_{\square}\left(O_i\right)\right)=\sqrt{\frac{\left|\min\limits_{1\le i\le m} r_j\left(O_i\right)-r_j^{\triangleleft}\left(O_i\right)\right|^2+\left|\min\limits_{1\le i\le m} r_j\left(O_i\right)-r_j^{\triangleright}\left(O_i\right)\right|^2}{2}} \tag{14}$$

For object O_i, the degree of fuzzy correlation $\zeta_j\left(R_\mho(O_i)\right)$ between indicator j and the minimum value sequence $R_\mho(O)$ is:

$$\zeta_j\left(R_{\square}\left(O_i\right)\right)=1-D_j\left(R_{\square}\left(O_i\right)\right) \tag{15}$$

Then, the comprehensively fuzzy correlation degree $\psi_F(O_i)$ of object O_i is:

$$\psi_F\left(O_i\right)=1/\left(1+\left(\sum_{j=1}^{n}\left(w_j*\zeta_j\left(R_{\square}\left(O_i\right)\right)\right)/\sum_{j=1}^{n}\left(w_j*\zeta_j\left(R_\Omega\left(O_i\right)\right)\right)\right)^2\right) \tag{16}$$

Considering the comprehensive influence of grey information and fuzzy information, the comprehensive correlation degree $\psi(O_i)$ of object O_i is:

$$\psi\left(O_i\right)=\alpha*\psi_G\left(O_i\right)+\beta*\psi_F\left(O_i\right) \tag{17}$$

where, α and β respectively represent the contribution degree of grey information and fuzzy information in the performance analysis of the training mode of digital media majors, they could take corresponding values based on actual conditions, and they satisfy $0\le\alpha, \beta\le1$, $\alpha+\beta=1$.

Above results suggest that, during the performance analysis of the training mode of digital media majors, the greater the value of comprehensive correlation degree $\psi(O_i)$ of object O_i, the better the training mode adopted by this object, and the better it suits the training requirement of digital media majors. Correspondingly, the smaller the value of comprehensive correlation degree $\psi(O_i)$ of object O_i, the worse the training mode adopted by this object, and the worse it suits the training requirement of digital media

majors, then, the object needs to borrow the help of the implementation strategies and paths proposed in this paper to improve its training mode of digital media majors.

5 Conclusion

This paper summarized and analyzed a few defects existing in the training process of digital media majors and researched the training mode and its performance analysis, then, the paper gave a few strategies and paths for implementing the training mode of digital media majors, which provided a new reference for the effective implementation of the training mode. Besides, in order to effectively measure the implementation effect of the training mode, this paper also discussed the performance of the training mode and proposed a new EIS for performance analysis; after that, this paper also built an improved fuzzy analysis model for the performance analysis of the training mode, which provided a good measurement method for the training mode of digital media majors and this research has certain value for the education works of the digital media major.

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