Research Article

Optimization Path of Art Teaching Methods in Colleges Based on Multiuniverse Algorithm and IOT

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Received 12 July 2022; Revised 25 July 2022; Accepted 30 July 2022; Published 10 August 2022

Academic Editor: Hamurabi Gamboa Rosales

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The optimization path of art teaching methods in universities cannot balance the contradiction and conflict between cost and benefit, which affects the educational efficiency. This paper proposes an optimization path method for art teaching methods in universities based on a multiuniverse algorithm. According to the relationship between teachers, students, and teaching materials, build an efficient art teaching knowledge dissemination model, extract the characteristics of art teaching innovation path, and make decisions on costs and benefits. Establish the art teaching path selection model based on the multiuniverse algorithm, give full play to the leading role of the university organization system through path design, and meet the personalized teaching and learning needs of teachers and students by designing the cost and cost objective function under the optimal benefit of art teaching. Using dance as an example, the art teaching path optimization approach based on a multiuniverse algorithm has an education efficiency of 1.476, which is 0.593 and 0.607 greater than the methods based on association rule and clustering algorithms. As a result, this strategy can improve the quality of art instruction while also facilitating reform and innovation in the classroom.

1. Introduction

Since entering the 21st century, the development of art design has opened a new chapter. The knowledge economy, information society, green revolution, creative industry, fashion culture, and the “picture reading era” have all accelerated the pace of societal development. And low-carbon life promotes the upgrading of design ideas and design methods in the overall cultural form; art and design continue to undergo adaptive changes and strive to become a force to promote social progress. As a spiritual cause, art education will undertake the mission of soul education. However, as the continuation and connection point of art education, art education management is not only education management but also a very important aspect of cultural management [1]. It is in charge of ensuring that all educational resources are effectively organized, coordinated, and integrated. Its goal is to ensure that art education institutions operate and develop in a scientific, sustainable, and efficient manner. The rapid growth of information technology has increasingly become a powerful driving force to support the teaching reform of colleges and universities in an environment of deeper higher education teaching reform and boosting teaching quality. People’s attention has gradually been drawn to the informatization of higher education, which is defined by a deep integration of information technology and college instruction. It is aimed at using information technology to improve teaching quality by changing the teaching mode of colleges and universities, reengineering the teaching path of colleges and universities from the curriculum level, and completely changing the traditional teaching mode of knowledge teaching into a teaching mode of quality education. While new types, styles, and branches of art design continue to emerge, a series of transdisciplinary, interdisciplinary, and complete designs representing key social and cultural topics have evolved. Art design has evolved into a new landscape of design, characterised by the diversification of cultural aspects, the richness of structure, and the junction of forms and techniques. On the one hand, colleges and universities should integrate talent training aims and needs, implement open courses via online learning, combine online learning and classroom teaching,
and continuously innovate intra-school and inter-school course sharing and application modes. On the other hand, we should gather advantageous forces, build an online open art curriculum system and public service platform with Chinese characteristics, integrate high-quality art education resources and technical resources, realize the application and sharing of art courses and platforms in various forms, promote the reform of art teaching and the innovation of education system, and improve the quality of art education [2]. Facing the huge promotion of market demand, technological innovation, and creative creation, higher art and design education is showing a comprehensive trend. As a new marginal discipline, the discipline of art design is widely intersected and integrated with other disciplines of art, engineering, structure, semantics, materials, mechanics, interaction theory, and other disciplines and constantly creates a series of interdisciplinary emerging majors and curriculum systems. The school must understand the development law of culture and art education; be able to use the resources and wisdom of Chinese traditional culture; go deep into the stage of art education, teaching, and education management with a high sense of responsibility; realize the self-aesthetic life state; and contribute its own modest strength to the beautification of the road of national art education. Therefore, the talent demand for art education in the future is the demand for art education management professionals. This is not just a requirement for contemporary innovation and progress but also for the advancement of disciplinary theory, because art education management is a critical component of the advancement of art education in universities, as well as a critical link to improving the status of art education and accomplishing the educational goals. Therefore, based on the multiverse algorithm, this paper studies the optimization path of art teaching methods in colleges, provides high-quality art education for the society, and widens the teaching service space of art education.

Since there are more and more gadgets using the Internet, having them all wired or wirelessly connected will provide us access to a wealth of information. The idea of facilitating communication among intelligent machines is at the cutting edge of technology, yet the technologies that make up the IoT are not new to us. IoT is a technique that converges data obtained from various types of items to any virtual platform on the already-existing Internet infrastructure, as you can expect from the name.

2. Optimization Path of Art Teaching Methods in Colleges Based on Multiuniverse Algorithm

2.1. Constructing an Efficient Knowledge Dissemination Model of Art Teaching. Communication elements are the main component of the knowledge communication mode of efficient art teaching. The division of communication elements hierarchically simplifies and decomposes the complex communication process. The interaction relationship and process between elements constitute the communication mode, determine the final form of communication activities, and reflect the communication law. Only by scientifically grasping the interaction relationship between communication elements and the overall communication law can we finally provide a scientific basis for better communication. Generally speaking, since the birth of art education, the initial form of art education management has naturally appeared. Different organization, structure, and operation modes emerge when the connection is generated by the relationship among teachers, students, and teaching materials. Teaching efficiency exists in the different combination modes and operation processes of the three. From that moment, the quality of education and teaching has been in the generation process, and there are differences between efficiency and quality. This is the possibility of many choices given by art disciplines [3]. The purpose of art education in universities is to enable college students to learn to appreciate the beauty of art and observe the soul of art by understanding the basic knowledge of art and improving their aesthetic ability. Although art education in universities in China is not included in the scope of school art defined by the general art education circle, it is not special from the general school art education in concept and connotation, and it is the most important content and implementation mode of aesthetic education and education in universities [4]. According to the decomposition of the knowledge communication process of efficient art teaching according to the 5W model, the five elements in the knowledge communication process can be defined as follows: communication subject-teacher, communication content-art knowledge content, communication channel-multimedia platform, communication object-learner, and art knowledge communication effect. The elements of knowledge dissemination in efficient art teaching are shown in Figure 1.

The important mission of art education is to provide intellectual and talent support for China’s scientific and cultural construction. It has become the source power and booster for the inheritance, integration, innovation, development, and transformation of Chinese culture and art. There is a natural flesh and blood relationship between art education and art culture. On the one hand, art culture affects the emergence and popularity of art and then affects the development direction of art education and sets the basic selection direction, main materials and logical rules for art education. On the other hand, art education constantly
summarizes and refines new art culture. As an important carrier of art and culture development, art education continuously provides a core mechanism for the appreciation and innovation of art and culture [5]. In short, art education has the function of inheriting, preserving, sorting, updating, and creating culture since it is an independent educational field and content. From the perspective of knowledge communication, efficient art teaching knowledge communication has not changed the original unidirectional communication mode. The efficient art teaching knowledge dissemination mode is shown in Figure 2.

Under the background of the new era, art education must keep up with the pace of the times and constantly carry out pioneering and innovative fission and development. In the knowledge dissemination mode of art education in universities, teachers spread knowledge through the network through the processing and selection of specialized art knowledge and use some network functions such as video means and interaction. However, the network still exists as a media, which does not affect the way of content dissemination. The teaching videos in this period are often the recording and reproduction of classroom scenes, which are basically consistent with the classroom teaching of art education in terms of vision and duration. However, as a knowledge transmission medium, the network enables students’ learning process and learning habits to be statistically analyzed and feed back more objective learning data for teachers. As a teacher, we need systematic theoretical knowledge and rich practical experience to achieve effective self-management. In this process, teachers need to constantly update educational knowledge, innovate new educational ideas, establish a new curriculum view, and improve their ability and literacy. Or from another point of view, only the new development of teachers’ knowledge can meet the creation of teachers’ professional development paradigm and lay the foundation for professional sustainable development. Teachers’ connotation excavation, induction, and summary of different art works are gradually transmitted to students, and various arts are also transformed into the healthy power of students’ inner world through students’ listening, feeling, perception, and perception [6]. From the perspective of psychology, art can trigger people’s positive and rich psychological activities. The process of college students receiving art edification is the process of psychological adjustment. Students learn art professional knowledge through the network and also discuss and leave messages and feedback through the open area of the network to reflect the learning effect. The opening of an e-learning environment also makes the relationship between students and teachers change from direct face-to-face to indirect contact. Students and teachers can realize delayed interaction in the network; teachers can also guide students through the network and even organize on-site online communication.

2.2. Extract the Characteristics of Art Teaching Innovation Path. According to the theory of innovation diffusion, comparative advantage, compatibility, complexity, testability, and observability are the basic attributes of innovative things, which determine the speed and degree of innovation. They are five variables to investigate whether efficient art teaching methods can innovate and spread. Relative advantage refers to the advanced or advanced nature of art teaching innovation compared with the original ones. The more advanced or advanced technology itself is the greater uncertainty and risk it will bring. The longer the time is recognized, the more profits will be generated after its use. Art teaching is an education specialized in art based on general education, which is professional, applied, and practical [7]. Compatibility is the degree that art teaching innovation is consistent with the existing values or the potential needs of innovation adopters. The greater the expected income of innovation, the more attractive it will be to the adopters. However, considering the risk of innovation, the adopters often make decisions after comparing the cost and income. Fusion is a process in which the two interact to produce essential and meaningful influence on the basis of their common points and connection points, so as to realize complementary advantages and integrate into an interconnected whole. Assuming that the fusion result of art education and information technology obeys Cauchy distribution, its probability density function can be expressed as

\[ p(\mu) = \frac{\chi}{\pi} \frac{\chi}{\chi^2 + (\mu - \mu_0)^2}. \]

In formula (1), \( p \) is the probability density; \( \mu \) and \( \mu_0 \), respectively, represent the integration result and initial state of art education and information technology; \( \chi \) represents the scale parameter. The integration of art education and information technology is the development of the essential
power of education through the intervention of technical means. Under the subjective transformation of education, technology becomes the technology in education, thus affecting the development of the essential power of education. This is the mutual construction of education and information technology through integration in the process of educational technology and technological education. Complexity refers to the difficulty of understanding and using a certain art teaching method for innovation. The simpler the structure of innovative things, the stronger the adaptability, and the easier it is to spread. Complex innovation often needs a long application process before it can spread, but once it is adopted, it also plays a great role in improving performance and generates high benefits [8]. The distance between the category represented by the art teaching method and the cluster center is calculated, respectively, and the teaching methods are classified according to the distance. The sum of the row vector corresponding to each art teaching method and the distance within the category is taken as the fitness function. This process can be expressed as

$$g(\alpha, \beta) = \sum_{i=1}^{u} (\alpha_i - \beta_i)^2. \tag{2}$$

In formula (2), \( g \) represents the fitness function; \( \alpha \) and \( \beta \) are the row vector and individual corresponding to the art teaching method, respectively; \( i \) represents the serial number of the art teaching method; \( u \) represents the cluster number. The above fitness function is measured as the complexity index of the art teaching method. Education is a complex human activity covering a variety of values. It has value attributed from its birth and changes society. The development of the society and its own improvement make everyone continuously improve and perfect themselves by virtue of education. Every nation tries to improve its own qualities through education. Triability refers to the degree that art teaching innovation can be tried in a certain situation, which helps to promote the adopter’s cognition of innovative things and reduce the uncertainty and risk of innovation. The research on subjects and objects in teaching is indispensable. Only by grasping the relationship between them can the value of guiding teaching be better reflected. Every day, students use their subjective initiative in learning in good objective environmental conditions, continually strengthen and feed back in the learning process, achieve value unity composed of subject self-consciousness and object value recognition, and constantly extend the subject’s own value. Observability refers to the degree to which the results of art teaching innovation can be displayed to others, that is, the observability of the application effect, efficiency, and benefit of technology, which is often positively related to the speed of innovation diffusion [9]. From the connotation of the five variables, comparative advantage and compatibility are the main characteristics of art teaching innovation, which is easier to affect the diffusion speed and degree of art teaching methods than other variables.

2.3. Establishing the Path Selection Model of Art Teaching Based on Multiuniverse Algorithm. The advancement of technology has opened up a world of possibilities for art education teaching and learning innovation. It has pushed for the advancement of art teaching methods as well as the reform of mixed teaching in colleges in terms of teaching mode, technical mode, organizational mode, and service mode, all of which are crucial to the overall reform of the art education environment. The performance index of art teaching path selection model is mainly composed of cost and benefit. The minimum price and cost means that the performance index is optimal. The art teaching cost under the optimal performance index can be expressed as

$$\min W_1 = \sum_{i=1}^{u} \theta_i di. \tag{3}$$

In formula (3), \( W_1 \) represents the cost of the selected art teaching path; \( \theta \) represents the cost of each project on the path; \( h \) represents the optimization path. Technology has improved the practicability and cost-effectiveness of most products and services in life, so that high-quality education can be expanded at low cost. Pry this “iron triangle” through information technology, dealing with the relationship between scale, quality, and cost flexibly, so that the “trilateral” can be extended flexibly and freely, and using lower cost to provide large-scale and high-quality art education is the breakthrough to deepen the reform of art education and teaching. The art teaching cost under the optimal performance index can be expressed as

$$\min W_2 = \sum_{i=1}^{u} \gamma_i di. \tag{4}$$

In formula (4), \( W_2 \) represents the cost of the selected art teaching path; \( \gamma \) represents the cost of each project on the path. With its innovative characteristics such as openness and scalability, the online teaching platform delivers free and high-quality art curriculum resources and value-added learning services to the world. This improves the democracy and practicability of art education to a certain extent and balances the scale of art education benefit, quality benefit, and cost benefit. The performance index of the selected art teaching path can be expressed as

$$\min W = \tau W_1 + (1 - \tau) W_2. \tag{5}$$

In formula (5), \( W \) represents the performance of the selected art teaching path; \( \tau \) represents the balance coefficient, which is set as 0.5 in this paper. Art teaching needs to pay attention to the inspiration of students’ creative thinking and the cultivation of their creative ability. Therefore, in the teaching process, we should use “thinking guidance.” Teachers and students interact to inspire students’ creative thinking and stimulate students’ creative passion. Based on the integration and flexible use of various elements of the teaching mode, the dynamic practical teaching method is adjusted with the changes of classroom.
atmosphere and course effect, so as to give full play to the wider radiation space for the dissemination of art course knowledge. In order to select the optimization path of art teaching methods suitable for the existing teaching level and conditions, this paper uses the multiverse algorithm to establish a path planning model to select the optimization path of art teaching. The emergence of cosmic individuals is the result of a single giant explosion, and multiple giant explosions have contributed to the birth of the entire multiverse population [10]. White hole, black hole, and wormhole are three core concepts in the theory of multiverse. Each universe expands at its own rate. The rate of expansion has an impact on the formation of white holes, black holes, and wormholes, as well as the renewal of the universe’s individual positions and the overall balance and stability of multi-cosmic space [11]. The multiverse algorithm simulates the motion behavior of multiverse population under the joint action of white hole, black hole, and wormhole [12]. Art teaching gives students the ability to gallop imagination, innovate the modeling of roles, and assume scenes and props. The guiding mode of creative thinking can be realized by setting questions or discussing. In the process of thinking and participating in the discussion, the greatest gain of students is not the overall inheritance of the knowledge transmitted by the teacher, but the process of learning how to think. Therefore, different art teaching methods may affect the dissemination, internalization, and regeneration of knowledge. A universe is regarded as a solution of the optimization problem in the constructed mathematical model, and each object in a single universe is regarded as a component of the corresponding solution, with the expansion rate of a single universe being directly proportional to the objective function value of the corresponding solution [13]. The initialization of solutions is used to start the optimization process, and the update of each group of solutions is performed through progressive iterative rules [14]. The flow of multiverse algorithm is shown in Figure 3.

Due to the different expansion rate of each cosmic individual, the objects in the cosmic individual will transfer through the white hole/black hole orbit [15]. This process follows the roulette mechanism, which can be expressed as

$$A = \begin{cases} A_k, & \delta \leq \eta, \\ A_l, & \delta > \eta. \end{cases}$$

In formula (6), $A$ represents the cosmic objects selected by the roulette mechanism; $A_k$ and $A_l$ represent the objects of $k$ universe and $l$ universe, respectively; $\delta$ represents the random number; $\eta$ represents the normalized expansion rate. As three vectors affecting the effect of art teaching, the balance among “scale (or opportunity),” “quality,” and “cost” forms an “iron triangle” that restricts traditional teaching. This also restricts the reform of art teaching methods and the improvement of teaching environment. Improving quality (e.g., providing better learning resources) may increase costs and reduce scale (or opportunities). If the scale is expanded (such as learner capacity), the quality may be affected. If the cost is reduced, it may limit the scale and reduce the quality. The cosmic individual will stimulate the internal item to travel to the current optimal universe without considering the expansion rate in order to adjust and improve its expansion rate locally [16]. Wormhole existence probability and travel distance are two important parameters, and their updating principles can be expressed as follows:

$$\begin{align*}
    p &= p_{\min} + c(p_{\max} - p_{\min})/m, \\
    q &= 1 - c^{1/6}/m^{1/6}.
\end{align*}$$

In formula (7), $p$ represents the existence probability of wormhole; $q$ represents the value of travel distance; $c$ represents the number of current iterations; $p_{\min}$ and $p_{\max}$ represent the minimum and maximum values of probability; $m$ represents the maximum number of iterations. The output optimal universe result is the optimal path selected by art teaching methods.

2.4. Design the Optimization Path of Art Teaching Methods in Colleges. Art is a comprehensive discipline. Its interdisciplinary characteristics create conditions for various types of colleges to set up art majors. Due to the comprehensiveness and complexity of the art major and the lack of experience, the art courses in many colleges are in a state of patchwork and disorderly change with complex content, incoherent structure, lack of integrity, and unity. Therefore, it is urgent to optimize the art teaching methods. Through path design, give full play to the leading and leading role of efficient organization system and relevant groups, and continuously improve their own academic reputation and social influence, so as to affect the attitude and reform decision-making of...
applied art teaching of other institutions and educational groups [17, 18]. The optimization path of college art teaching method designed in this paper is shown in Figure 4.

Table 1: Comparison of educational efficiency of chorus major.

| Year | Path optimization based on multiverse algorithm | Path optimization based on association rule algorithm | Path optimization based on clustering algorithm |
|------|-----------------------------------------------|---------------------------------------------------|-----------------------------------------------|
| 2017 | 1.427                                         | 0.605                                             | 0.775                                         |
| 2018 | 1.544                                         | 0.684                                             | 0.742                                         |
| 2019 | 1.480                                         | 0.742                                             | 0.821                                         |
| 2020 | 1.462                                         | 0.673                                             | 0.883                                         |

Table 2: Comparison of educational efficiency of dance major.

| Year | Path optimization based on multiverse algorithm | Path optimization based on association rule algorithm | Path optimization based on clustering algorithm |
|------|-----------------------------------------------|---------------------------------------------------|-----------------------------------------------|
| 2017 | 1.394                                         | 0.844                                             | 0.841                                         |
| 2018 | 1.556                                         | 0.901                                             | 0.984                                         |
| 2019 | 1.424                                         | 0.962                                             | 0.813                                         |
| 2020 | 1.531                                         | 0.823                                             | 0.837                                         |

Table 3: Comparison of educational efficiency of drama major.

| Year | Path optimization based on multiverse algorithm | Path optimization based on association rule algorithm | Path optimization based on clustering algorithm |
|------|-----------------------------------------------|---------------------------------------------------|-----------------------------------------------|
| 2017 | 1.456                                         | 0.743                                             | 0.820                                         |
| 2018 | 1.434                                         | 0.872                                             | 0.673                                         |
| 2019 | 1.557                                         | 0.781                                             | 0.848                                         |
| 2020 | 1.588                                         | 0.763                                             | 0.612                                         |

First, at the level of introduction and construction, based on the principle of combining professionalism and aggregation, provide curriculum resources with appropriate scale and options to meet the personalized teaching and learning needs of teachers and students. In the art curriculum, change “thick foundation” into “real foundation.” The so-called “reality” means that the basic theoretical knowledge of the discipline should be based on practicality, adhere to the principle of “must and enough,” and lay a foundation for the development of ability. Update the teaching content with new theories, new knowledge, and new technology, adjust the professional training objectives and construction priorities, optimize the talent training scheme, promote the teaching reform, and improve the discipline advantages, characteristics and professional concentration, so as to realize the renewal and upgrading of traditional disciplines. In the setting of art curriculum, the traditional three-stage curriculum model can be broken, and the corresponding architecture or class composition can be set according to different curriculum characteristics [18]. Second, at the level of application and practice, we should take the combination of innovation and sharing as the principle to improve the teaching level of colleges and the overall quality of education. Compared with other written disciplines, art needs more space to deepen and improve. In addition to theoretical understanding and mastery, it also needs to pass the test and innovation practice. There is no absolute boundary between art resource providers, sharers, and learners nor is it a simple top-down relationship between teachers and students, but a community of interests of teaching and learning, which is interrelated, shared, and contributed to each other. Teachers need to let students understand, digest, and master the principles of art from the perspective of ideas and methods and be able to think, analyze, and summarize the processes and skills of completing art production. Third, at the level of management and service, based on the principle of the combination of new value network and institutional support, integrate the courses that cannot directly generate profits into the network business model, and seek new ideas to reduce the cost of higher education. The management and service platform can enhance the vitality of colleges and universities and their adaptability to market changes, and deepen the study of art theory. Art teaching combines theory
and practice more closely, widens learning space and strong comprehensive ability, and can shorten the distance between students’ campus learning and the actual needs of society [19]. The open art education environment needs two systems: hard environment and soft environment. Among them, the hard environment mainly refers to the physical environment of open art education, such as the technical environment based on networking and big data [20–23]. Soft environment mainly refers to the institutional environment of open art education, which involves the reform of art education system and mechanisms in the information age. It has a high degree of comprehensiveness and complexity, so it must be deduced and explored repeatedly in theory and practice.

3. Experiment

3.1. Experimental Preparation. Based on the multiuniverse algorithm, this paper proposes a path optimization method for art teaching methods. The following comprehensively measures the efficiency of art education from a dynamic perspective. This experiment selects the time series data of a university from 2017 to 2020, and the selected art majors are chorus, dance, drama, and string music. The method based on the Malmquist index is used to dynamically measure the change of total factor productivity of art education. The Malmquist index uses the ratio of distance function to calculate input-output efficiency. Generally, it can be expressed as

\[ \varphi = \sqrt[\lambda_1 / \lambda_2]{\varphi_1 / \varphi_2} \]  
(8)

In formula (8), \( \varphi \) represents input-output efficiency; \( \lambda \) represents technical efficiency; \( \varphi \) represents technical efficiency level; \( t_1 \) and \( t_2 \) represent two different periods, respectively. Each step of the program running of all algorithms is carried out in MATLAB. The test environment is Intel (R) core (TM) i7-6700 CPU, 3.40 GHz, 16GB RAM, and Windows 10 personal computer. In order to facilitate calculation and data acquisition, the investment indicators of art education mainly select human, financial, time, and material resources. Quantitative and qualitative indicators are the most common output indicators. The number of students who select courses, the number of self-compiled textbooks, and the number of scientific research projects are among the quantitative indicators. The number of papers published and awarded, the number of performances by art troupes, and the number of art prizes are all examples of quality indicators.

3.2. Experimental Results and Analysis. In order to verify the superiority of the path optimization method of college art teaching method based on a multiuniverse algorithm, the calculated art education efficiency is compared with the path optimization method based on association rule algorithm and clustering algorithm. The comparison results of chorus, dance, drama, and string music are shown in Tables 1–4, respectively.

According to the above experimental comparison results, there are some differences in the efficiency of art education of different methods. On the whole, the efficiency value of using a multiuniverse algorithm to optimize the path of teaching methods is significantly higher than that of path optimization methods based on association rule algorithm and clustering algorithm. Taking dance major as an example, the art education efficiency of the optimization method based on multiuniverse algorithm is 1.476, which is 0.593 and 0.607 higher than that based on association rule algorithm and clustering algorithm. Therefore, the art teaching path optimization method in this paper makes the teaching organization more meaningful and meets the diverse and personalized needs of all kinds of students.

4. Conclusion

The core task of art education, as an independent and unique subject, is naturally designed to study the unique value of art education in order to expose the internal essential objective law included in the art education management process. The rapid growth of China’s art market, as well as the growing prosperity of cultural activities, has created new demands for art, education, management, and other related disciplines. The urgent task of art education in universities is to cultivate art education and management talents with excellent cultural and artistic literacy suitable for countries with Chinese characteristics. This research uses a multiuniverse algorithm to investigate the optimum path of art education methods in universities. This strategy can increase the efficiency of art education while also achieving the rational use and allocation of resources in the art teaching management process. Because for objective reasons such as time and mastering data, as well as the limitations of subjective factors such as research ideas and focus on issues, they are not carried out one by one. It is expected that the follow-up research work will study the above ways on the basis of the existing work as far as possible, so as to make the research vision wider and the research significance more profound.

Data Availability

The data used to support the findings of this study are included within the article.
Conflicts of Interest

The authors declare that they have no conflicts of interest.

Acknowledgments

This study was supported by the Application and Exploration of (Mixed Reality) Technology in Sculpture Teaching (No. HBKC217052).

References

[1] R. Wang, J. Qin, and Y. Liu, “On options for creative paths to cultivate talents majoring in art design under achievement oriented education paradigm,” Vocational and Technical Education, vol. 40, no. 32, pp. 27–30, 2019.

[2] N. Xu and W.-H. Fan, “Research on interactive augmented reality teaching system for numerical optimization teaching,” Computer Simulation, vol. 37, no. 11, pp. 203–206, 2020.

[3] S. Liu, “Objective direction and path choice of university aesthetic education in the new era,” Journal of Hunan University of Science & Technology (Social Science Edition), vol. 23, no. 5, pp. 159–165, 2020.

[4] J. Ge, “Teaching quality evaluation mode for the classrooms of ‘The Integration of Practice, Learning and Teaching’ and its application,” Journal of Wuxi Institute of Technology, vol. 18, no. 2, pp. 27–31, 2019.

[5] H. B. Boholano, V. Theodore, A. M. Pogoy, and R. Alda, “Technology-enriched teaching in support of quality education in the 21st century skills,” Solid State Technology, vol. 63, no. 5, pp. 6795–6804, 2020.

[6] M. B. Alazzam, F. Allassery, and A. Almulhi, “A novel smart healthcare monitoring system using machine learning and the internet of things,” Wireless Communications and Mobile Computing, Volume, vol. 2021, article 5078799, 7 pages, 2021.

[7] B. Grkan and S. Dolapiolu, “The effects of teaching strategies, methods and techniques on creative thinking: a meta-analysis study,” Uluslararas Eitim Programlar ve retim almalar Dergisi, vol. 10, no. 1, pp. 149–188, 2020.

[8] Y. Sorakin-Balli, S. Basari, and S. Guldal-Kan, “The relation between classroom management skills and empathic tendencies of high school teachers high school teachers’ classroom management skills and empathic tendencies,” Cypriot Journal of Educational Sciences, vol. 15, no. 1, pp. 144–152, 2020.

[9] H. Egeberg, A. Mcconney, and A. Price, “Teachers’ views on effective classroom management: a mixed-methods investigation in western Australian high schools,” Educational Research for Policy and Practice, vol. 20, no. 3, pp. 107–124, 2020.

[10] J. S. Owens, M. Lee, H. Kassab, S. W. Evans, and E. C. Coles, “Motivational ruler ratings among teachers receiving coaching in classroom management: measurement and relationship to implementation integrity,” Prevention Science, vol. 22, no. 6, pp. 769–774, 2021.

[11] K. Mbise, “The role of IT professional certifications in instructors’ teaching quality,” The International Journal of Education and Development using Information and Communication Technology, vol. 17, no. 1, pp. 176–187, 2021.

[12] X. Liu, “Application of improved multiverse algorithm to large scale optimization problems,” Journal of Electronics & Information Technology, vol. 41, no. 7, pp. 1666–1673, 2019.

[13] M. B. Alazzam, H. Mansour, F. Allassery, and A. Almulhi, “Machine learning implementation of a diabetic patient monitoring system using interactive E-App,” Computational Intelligence and Neuroscience, vol. 2021, Article ID 5759184, 7 pages, 2021.

[14] M. Mishra, G. V. Ramana, and D. Maity, “Multiverse optimization algorithm for capturing the critical slip surface in slope stability analysis,” Geotechnical and Geological Engineering, vol. 38, no. 1, pp. 459–474, 2020.

[15] B. P. Sahoo and S. Panda, “Chaotic multi verse optimizer based fuzzy logic controller for frequency control of microgrids,” Evolutionary Intelligence, vol. 14, no. 1, pp. 1597–1618, 2020.

[16] H. H. Ali, A. M. Kassem, M. Al-Dhaifallah, and A. Fathy, “Multi-verse optimizer for model predictive load frequency control of hybrid multi-interconnected plants comprising renewable energy,” IEEE Access, vol. 24, no. 3, pp. 373–390, 2020.

[17] A. K. Abasi, A. T. Khader, M. A. Al-Betar, S. Naim, and S. N. Makhadmeh, “An ensemble topic extraction approach based on optimization clusters using hybrid multi-verse optimizer for scientific publications,” Journal of Ambient Intelligence and Humanized Computing, vol. 12, no. 1, pp. 2765–2801, 2020.

[18] H. Tabrizchi, M. Tabrizchi, and H. Tabrizchi, “Breast cancer diagnosis using a multi-verse optimizer-based gradient boosting decision tree,” SN Applied Sciences, vol. 2, no. 4, pp. 1–19, 2020.

[19] M. Abdel-Basset, L. A. Shawky, and K. Eldrandaly, “Grid quorum-based spatial coverage for iot smart agriculture monitoring using enhanced multi-verse optimizer,” Neural Computing and Applications, vol. 32, no. 15, pp. 607–624, 2020.

[20] S. G. Onwuibokha and A. Calihanna, “Interdisciplinary physical music: a blind spot in education on acoustics,” The Journal of the Acoustical Society of America, vol. 148, no. 4, pp. 2697–2697, 2020.

[21] M. Bader Alazzam, F. Allassery, and A. Almulhi, “Identification of diabetic retinopathy through machine learning,” Mobile Information Systems, Volume, vol. 2021, article 1155116, 8 pages, 2021.

[22] H. Paek, G. W. Siebein, M. Roa, J. R. Miller, and M. Vetterick, “The evolution and creation of schools for music education,” The Journal of the Acoustical Society of America, vol. 145, no. 3, pp. 1739–1739, 2019.

[23] M. A. Duarte-Garcia and J. R. Sigal-Sefchovich, “Working with electroacoustic music in rural communities: the use of an interactive music system in the creative process in primary and secondary school education,” Organised Sound, vol. 24, no. 3, pp. 228–239, 2019.