

## Research Article

# Design and Application of the Digital-Oriented Interactive System for Teaching Preschool Art Education

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In this paper, the design of a teaching interactive system for preschool art education is digitally studied and analyzed, and the teaching interactive system is designed to be applied to the teaching process of preschool art education. It is to design and implement a convenient and feasible art education study and research mutual aid system. The art teaching mutual study and research system is based on the three-layer architecture of NET as the main system structure. The main function of the representation layer is to process the data requested by users and realize the interaction between users. The data layer is mainly to realize the processing of data logic, through the call and operation of the database, to realize the interactive access function of the database. The business logic layer is a relationship in the middle and plays the function of carrying on the top and bottom, realizing the logical processing of the database, and then realizing the business objectives of the system. The design and implementation of the multitier mechanism are of great importance in terms of improving system reliability as well as system compatibility. In the framework of activity theory research, the concept of dynamic integration of digital learning resources is proposed in conjunction with relevant research on digital learning resource integration. The intermediary of the interaction between subjects and digital learning resources in the digital learning process establishes the connection between different subjects through the interaction between elements in the activity system, promotes the accumulation of the number of digital learning resources and the two-way interaction of effective information, and thus realizes the orderly organization and management of the digital learning resource system. The theoretical basis of dynamic integration of digital learning resources, including activity theory, knowledge organization theory, and feedback principle, is discussed in detail in the study to provide a basis for the construction of the theoretical model of dynamic integration of digital learning resources.

## 1. Introduction

With the continuous progress of curriculum reform, increased kindergarten art teachers have begun to realize that positive teacher-child interaction can mention the teaching quality of art education activities. However, according to the information we have and what we have learned in kindergartens, there are few effective and high-quality teacher-child interactions in art education activities [1]. The common problems are generally divided into two kinds: one is that teachers simply take art education activities to teach art knowledge and art skills and only focus on teaching children's relevant skills in the activities, turning children into a

passive role of receiving learning, so they seldom interact with children as teachers and children. The other is that although teachers consciously engage in teacher-child interaction in art education activities, they often select artworks based on their perceptions of children's favorites and preferences, ignoring children's actual understanding and acceptance, and thus even if they do interact with them, it only remains at a shallow level [2]. This study focuses on the art teaching activities of kindergarten middle class and combines the classroom assessment scoring system-preschool version to study the current situation of teacher-child interaction in middle-class art teaching activities, summarizes the characteristics and influencing factors of teacher-

child interaction in kindergarten middle-class art teaching activities, and then puts forward some suggestions and strategies. On the one hand, the study aims to improve teachers' awareness of teacher-child interaction and their professional ability and provide some practical basis for them to carry out art teaching activities effectively; on the other hand, it aims to establish support for teachers to organize art teaching activities more reasonably, carry out teacher-child interaction more effectively, and improve the quality of teacher-child interaction [3].

In this paper, we design and develop a rebel tracking system for digital teaching resources through various technologies, generating digital fingerprints through user registration information, embedding them into the host images, extracting the fingerprints by the distributor to find relevant user information, and confirming the privacy identity information by a trusted third party to track the rebels [4]. The introduction of a monitoring mechanism achieves the purpose of protecting the legitimate rights and interests of distributors and users and achieves the effect of co-existence of usability and transparency of teaching images. Classroom teaching is the most basic component of school education activities, and the development of its teaching activities will directly determine the quality of education and the living conditions of teachers and students in the classroom. Teacher-student interaction is the most effective form of classroom teaching, emphasizing the interaction and mutual influence between teachers and students and students and students in the implementation of educational and teaching activities. This breaks through the shackles of the original "one-way" education and teaching model and promotes the development of education and teaching towards "two-way" interaction, which has a positive effect. At the same time, by tracking the traitor for punishment, it also indirectly protects the copyright of the distributor, brings more freedom to the copyright owner for network distribution and user use, maintains the normal order of the copyright market, reduces the economic loss of the distributor, promotes the reasonable dissemination of digital information, and finally brings inestimable value to the copyright market [5].

## 2. Related Jobs

The Internet has become the main technical basis and the carrier of access to resources in modern education, and the modern form of education has undergone important changes [6]. The Montessori education system founded by Maria Montessori, which had a great influence on the world, suggests that the environment is the first element of education and that a good or bad environment can influence the cognitive growth of children, so the developmental stage must prepare a suitable environment to match the development of children so that children can develop their instinct of imitation and activity without restriction [7]. Howard Gardner, a representative scholar in art education theory research, suggests that art education can enhance and nurture children's sensitivity at the level of thinking while promoting the harmonious and stable overall development

of both mental and physical aspects [8]. In the art teaching classroom environment, he emphasizes that children's ability to create on their own needs to be combined with teachers' guidance and inspiration. The teacher needs to guide children to learn to play independently and, on this basis, provide effective guidance and inspiration, prepare creative materials and relevant theoretical knowledge, and encourage children to develop their ability to create their own opinions and associations about art [9]. Aesthetic education and art education are closely related. As we all know, art is the concentrated and typical form of aesthetics. Of course, the aesthetic education as aesthetic education also takes art education as the main way. However, aesthetic education and art education are not equivalent, but intersecting. They have overlapping parts and different parts.

On this basis, a foreign language information resources integration and optimization model based on autonomous learning research framework is proposed [10]. The main guiding principle of this approach is to use the campus network, which has a large internal bandwidth, as the transmission medium to avoid the problem of insufficient bandwidth in the wide-area network and to take care of the internal users of the school [11]. The campus network-based curriculum teaching aid system is an online teaching platform researched and developed based on the reality that modern education technology and multimedia teaching and computer-assisted teaching are commonly used in schools [12]. The interactive education system currently used is not able to realize the supervision of education research and development, and students can learn through the interactive education system but indeed cannot realize the function of interactive research and development education [13]. Intelligence needs to be further optimized, and there are still certain problems with the intelligent interactive education function [14]. The function is not perfect; the intelligent interactive education system has made certain achievements in recent years, but the interactive education system currently used in China is not yet able to meet this requirement. Therefore, in general, although the interactive education system has achieved great development, there are still great problems, which to a certain extent affect the modernization process of education and teaching, and for this reason, the design of a fully functional interactive education system has important practical significance for the development of modern education.

After-class reviews help students consolidate what they have learned throughout the day. Then, each class should be carefully prepared and designed, the textbooks and teaching materials should be carefully read before class, and multimedia network resources should be used appropriately. Furthermore, in the introduction of excitement, classroom procedures, after-school tutoring, and homework assignments, attention should be paid to students' willingness to learn and acquire knowledge and skills. It provides a new and effective means of solving complex problems through features that can simulate and represent the real or conceived world with high accuracy and assist users in their analysis. The VR system creates a more autonomous learning environment, where users can explore knowledge

through their interaction with the virtual environment, which is conducive to changing the passive learning mode of “teaching for learning” in traditional still life placement teaching.

### 3. Analysis of the Design and Application of Digital Preschool Art Education Teaching Interactive System

*3.1. Design of an Interactive System for Teaching Digital Art Education.* Digital learning resource integration belongs to the longitudinal expansion of digital resource integration research in the field of education. Through the previous review of integration and digital resource integration research, this study defines digital learning resource integration as the resource organization and reorganization activity of optimizing the combination of distributed and heterogeneous digital learning resources to meet the diversified learning needs of learners. It includes the class clustering and reorganization of the knowledge content, functional structure, and interactive relationships of digital learning resources.

Digital learning resource integration is a way to effectively organize and manage resources [15]. Analysis of the literature reveals that the current relevant research emphasizes the use of new technologies and the scientific systematization process of research, and the integration model is relatively static and predetermined. However, due to this static characteristic of the integration model of digital learning resources, digital learning resources do not play the expected role, which seriously affects the in-depth development of education informatization construction and the smooth development of learning activities.

In the theory of cognitive development, Piaget mentioned that children in the preoperational stage can think with the help of representations of things because of the emergence of language and symbols, and at this stage, language and representations can be used as tools for children to describe the external world. In the concrete operation stage, children begin to perform logical operations in concrete situations but are limited by concrete objects, so visual instruction is used as much as possible to smooth the transition to the next stage. Children are gradually influenced by concrete objects such as environments and people between each of the two stages. By analyzing children’s psychology from this perspective, we can correctly recognize children’s cognitive structure in the design process, clarify children’s cognitive level for specific objects and the influencing factors in the environment on the one hand, and provide the correct educational psychological basis for the subsequent construction of users, environment, and equipment in the children’s art education service system, as shown in Figure 1.

Among them, the login management module can determine the type of user to determine the next page content that can be displayed to the user; the user management module, course management module, and notification management module are under the authority of the

administrator; the oil painting masterpiece management module, photography work module, and teacher work management can be operated by both the teacher and the administrator. The administrator is responsible for the forum management function [16]. The login management function module provides a user login page to users when they start using the system, asking them to enter their user name and password, determining their identity based on their name, and displaying the corresponding page on the user interface according to their identity.

The dataset can be considered as a cache, the main role of which is to save the data by querying it. The dataset object is on top of the DataAdapter object, and the dataset object cannot communicate with the data source. The teaching and research support system is a requirement for students to be able to realize the purpose of self-education and learning [17]. The Art Teaching Cloud Platform is a B/S architecture-based teaching network system software, which contains an online teaching system, a work display platform, an assessment system, and a digital teaching resource library. The cloud platform adopts the latest Internet cloud technology and requires no installation or maintenance. The system can be seamlessly integrated with virtual desktop programs or accessed and used directly through a browser. The mobile phone is equipped with an art literacy assessment system developed specifically for secondary school candidates. The textbook editorial committee and outstanding teachers provide an authoritative question bank, with automatic error correction and intelligent scoring to help the secondary school examinations and improve literacy.

The main topic of this paper is to design and implement an art education study and research system. The main function of the representation layer of the system is to process the data requested by the users and to realize the interaction between them. Its data layer is mainly to achieve the processing of data logic, through the call and operation of the database, to achieve the interactive database access function. The business logic layer is in the middle of the relationship, realizing the logical processing of the database and the business objectives of the system. The design and implementation of a multilayer structure can improve the reliability of the system as well as its compatibility of the system. The Art Teaching and Research Mutual Aid System combines the relevant technologies of NET and SQLSERVER to ensure application security through the design of access rights and control of user roles. The system can achieve the functions of login, online learning, forum exchange, online homework, and online testing in art teaching, as shown in Figure 2.

Detailed refinement is initially established by the system analyst after a detailed analysis of the system’s requirements, the functions, and the scope of the system, as well as the structure of the system in the design and implementation process and decision options. Through the system, you can further clarify the system performance and system functionality on this basis, and at the same time, you can clarify the element interfaces needed for the system interfaces and constraint software [18]The requirement analysis provides a detailed analysis of the data model and other functional

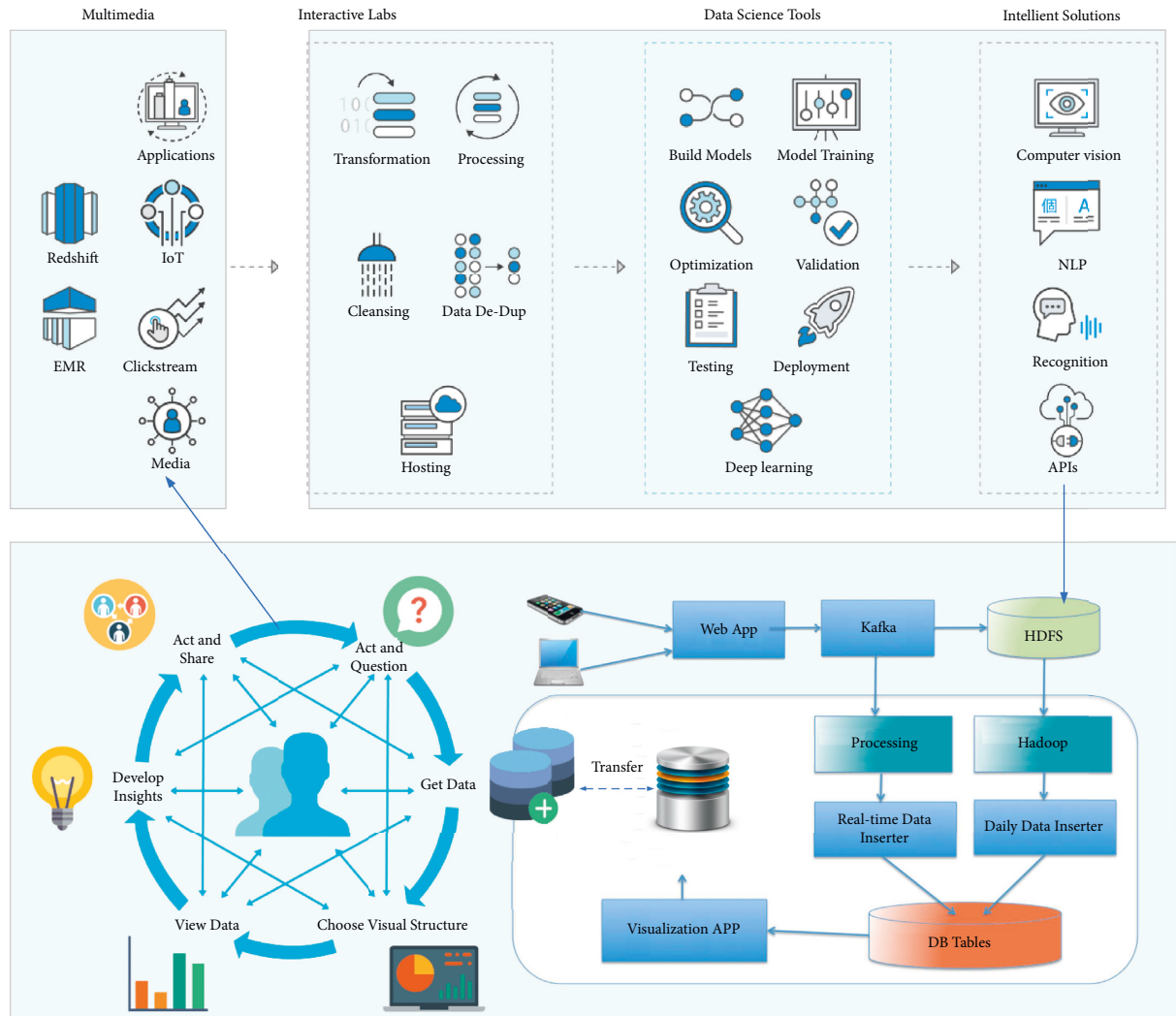


FIGURE 1: Digital system framework.

models of the software system. NET technology is flexible, secure, scalable, accessible, and browser-independent. The test uses a browser-server architecture, consisting of a database server [19]. In the process of art design teaching, teachers introduce virtual reality technology, which helps students to observe operations and changes that they cannot usually see and transform abstract teaching knowledge into intuitive and specific teaching content, making it easier for students to accept and grasp quickly. At this stage, the application of virtual reality technology is more and more extensive, and the application in the structural design of pictures, text, and space can help students to deepen their understanding of knowledge.

3.2. Experiment on the Application of the Interactive System for Teaching Preschool Art Education. Analyze the user's network environment configuration before design, so that the architecture designer can design a feasible system architecture according to the user's specific situation; investigate user preferences and provide relevant basis for system designers.

Many information systems pay more attention to the system in the design process, and it seems to meet the basic needs of users, but often when the system is put into use, many problems are found, and many functions are not able to meet the needs. Proficiency in professional knowledge is also not ideal, and the system often ignores these aspects of the requirements in the design process, thus bringing great trouble to the use of the system. Therefore, it is very important to determine the corresponding indicators in advance in the design process of the system, so we provide a detailed analysis of the basic business processes of each module.

The function of the parent side is to receive classroom feedback and brand promotion, while the teacher side assumes more of an assistant role in the whole service model than the parent side. Since most of the situations are in the field studio, the App has a wide and shallow hierarchical distribution, which is easy for teachers to operate quickly.

Based on the research at the Storybrooke Children's Art Studio, we made a service blueprint as a reference basis for user trajectory, mainly from 4 stages: enrollment, class, and after class. Among them, the research focused on the review

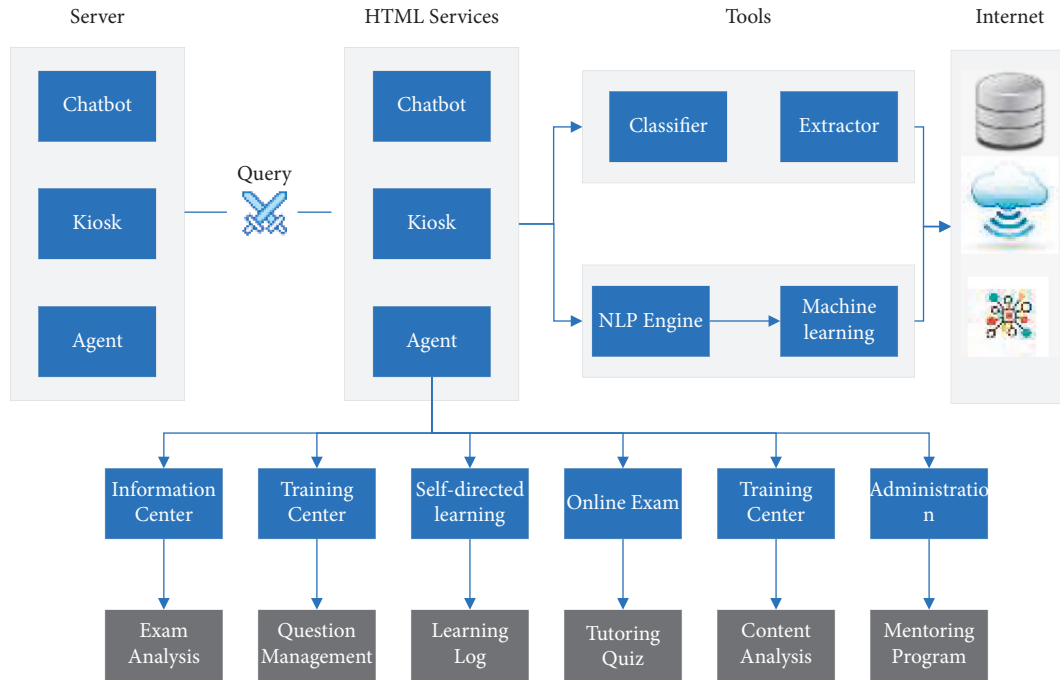


FIGURE 2: Overall scheme.

and feedback of the studio students after the class [20]. In the three stages of registration, class, and after class, students are guided by their parents and teachers, and their self-cognition consciously follows the guidance and is established, which is a gradual process, while in the after-class stage, the knowledge students learn from the classroom is developed, and their cognitive ability is gradually substituted into areas other than the studio environment, such as handwriting assignments and artwork competitions assigned by the school class, the gradual rise of examinations, that is, the assessment of art teaching through the generative assessment system, has also become an important basis for assessing ability, as shown in Figure 3.

First, the usability of the whole system is tested, and the causes affecting the usability of the whole system are analyzed vertically. Secondly, the usability of three functional modules was tested, the reasons affecting the usability of each functional module were analyzed vertically, and the contribution of the usability of each functional module to the usability of the whole system was analyzed in a horizontal comparison. The content and usage of the scale were briefly explained in the previous section. To facilitate the use of the scale by the participants, the authors made appropriate modifications to the presentation of the questionnaire to indicate that it was an evaluation of the virtual system of still life placement, for example, in the scale for the copying function, the word “system” in each question was changed to “copying function.”

Based on the conceptual connotation, this study expands the research framework of the third generation activity theory, and the dynamic integration of digital learning resources is divided into two different dimensions, which are the implementer dimension and the learner dimension so that when analyzing the relevant elements, it is necessary to

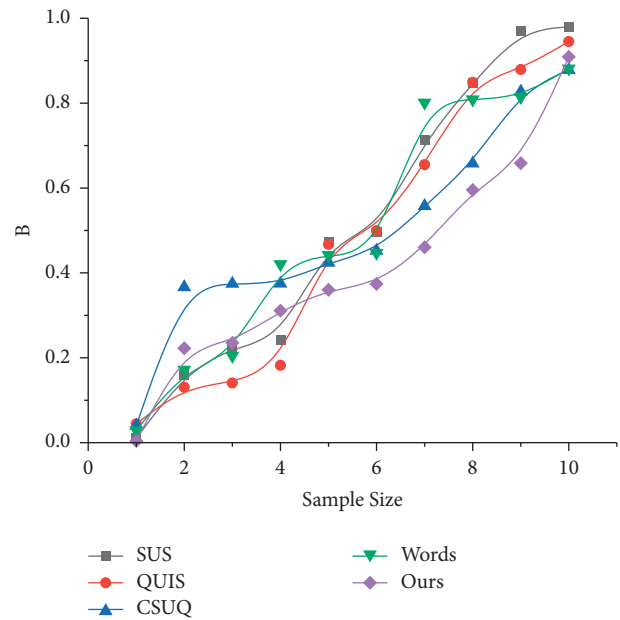


FIGURE 3: Accuracy of each scale at different sample sizes.

discuss them from these two dimensions. The sharing and co-construction of educational resources is the only way for teaching reform, educational innovation, and social development. As the core foundation of educational resource sharing and co-construction, digital curriculum resources must undertake the important mission of building a digital curriculum resource sharing mechanism. How to achieve the sustainable development of digital curriculum resources as the primary goal requires the sharing and co-construction of digital teaching resources to continuously innovate and improve. The digital curriculum resources established on the

premise of sharing and co-construction are disseminated through the Internet platform, with points leading to areas and local areas promoting the whole. Link the resources of the national education system, create a new educational concept of sharing and cooperation, and promote the deeper, more autonomous, and more sustainable development and sharing of digital curriculum resources.

The objects in the dynamic integration of digital learning resources include open learning resources distributed in the future, digital learning resources in commercial databases, and other forms, which are the basis for the learning process of learners and the target objects of the dynamic integration of digital learning resources. The dynamic integration of digital learning resources is the “intermediary” for the implementer and digital learning resources, i.e., the tool used by the implementer in the process of integrating digital learning resources, and in the implementer dimension, its role is mainly to achieve the accumulation of quantity, as shown in Figure 4.

In the implementer dimension, learning resources are based on the knowledge characteristics of digital learning resources, and knowledge organization tools and methods are used to classify, cite, and deepen the knowledge content of related resources, thus forming a collection of related resources. The community in the implementer dimension includes relevant elements such as teachers and learners, who are in the same learning context and have the same learning goals. Driven by the teaching objectives, teachers collect, select, and use digital learning resources to carry out a variety of teaching activities, which include digital learning resource management and other activities in the process, and are the backbone of learning resource design and construction [21]. Learners use digital learning resources to carry out their usage, and we used evaluation information directly to reflect the effective degree of integration of digital learning resources.

The tool is the intermediary used by the subject of the activity to complete the corresponding activity, and the intermediary connects the subject and the object of the activity and guides the interaction between them. The subject uses the tool to complete the specific operation of the object, and the operation triggers the corresponding action, thus completing the process of the subject’s activity. In this study, the dynamic integration of digital learning resources serves as a tool for effective organization and management of related resources. Under the role of different activity subjects, the dynamic integration of digital learning resources plays its role, establishes the connection between different activity subjects by the learning platform, and realizes orderly organization.

In the process of dynamic integration of resources, knowledge organization theories and methods provide corresponding rules and specifications, especially in the organization, which provide learners with effective information about the learning process and enhance the learning experience through multidimensional descriptions of attribute characteristics and knowledge content based on characteristics of digital resources. Conducting scientific training is another important function of the Science Museum. Compared with the conventional training methods,

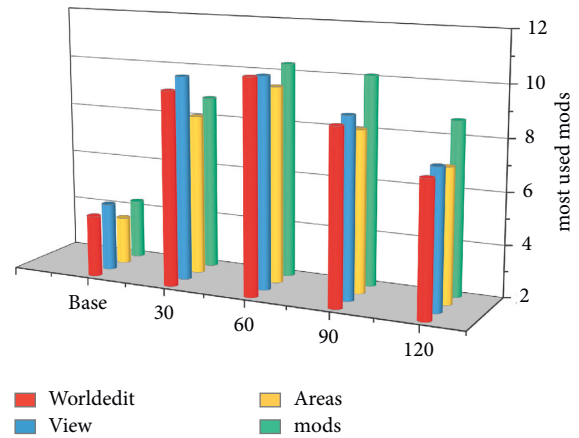


FIGURE 4: The cumulative effect of digital learning resources in quantity.

the virtual laboratory established by using virtual reality technology can conduct virtual training for people, with a realistic environment and a sense of “immersion.”

## 4. Analysis of Results

*4.1. Design Performance Analysis of Teaching Interactive System.* Therefore, form testing is very important to determine the correctness of the form operation function through form testing. For example, users need to submit their user names and passwords in the process of logging in to the system. If the form accepts only specific information, then it must be tested, for example, if it accepts only characters, then the system will see if the error is realistic by skipping characters. The form in this article was tested and found to be able to perform its operation.

White-box testing is also known as structural testing, transparent box testing, logic-driven testing, or code-based testing. White-box testing is an approach to test case design where the box refers to the software being tested and the white box means that the box is visible and you know exactly what is inside the box and how it works. The “white-box” approach provides a comprehensive understanding of the internal logic of the program and tests all logical paths. The “white-box” method is an exhaustive path test. When using this option, the tester must examine the internal structure of the program and start by examining the logic of the program to produce test data.

At present, most online examination systems are implemented by structured analysis and design, which inevitably leads to shortcomings in code reusability and readability, and all functions are implemented on the server side. There is also a lack of experience. Database testing has a very important role in the website, the database is the most important part of the information system, and the correctness of the database function is directly related to the whole website function. Through the test related to each function of the database, we found that the database of the art teaching and research system established in this paper can realize the operation of the system. High performance and multifunctionality are the important goals pursued in



the design and implementation of information systems. The system was tested in terms of functionality and performance, and the forum function was selected as one of the system functions. Through the survey of system users and their feedback information, it is known that the platform is relatively good in the use of various functions, but the overall design of the system still has certain defects and needs further improvement. After a large-scale trial, quantitative tests will be implemented to obtain more detailed data, as shown in Figure 5.

Figure 5 shows a cross-sectional comparison of the usability scores of the theoretical, copying, and practical functions of SUS. The authors believe that the three main reasons for the difference in usability are that the theoretical function involves a more common graphic display, the copying function involves a simpler interaction, and the practice function has a more novel form of interaction. Overall, the first functions contribute more prominently to the usability of the overall system.

We know that light and shadow have an important role in the embodiment of beauty. In the traditional still life placement, the volume relationship and texture characteristics of still life are more obvious, but this constant light source is also difficult to stimulate students' perception desire. Natural light is sometimes unchanging and sometimes suddenly variable, with subtle, harmonious, and vivid effects on the form, tone, and spatial level of the still life, but this instability also brings some trouble to the learners' observation.

Adjusting the intensity of the light can achieve the effect of sunshine on overcast clouds. As the light covers the whole scene, the control of the color of the light will affect the tone of the whole group of still life, which has the effect of unifying the tone, and the user can change between cool and warm light at will. Dividing the dynamic integration of digital learning resources into two dimensions is for the need of theoretical analysis and activity design, but in fact, these two dimensions are closely intertwined with internal consistency, goal consistency, and close correlation, as shown in Figure 6.

On the one hand, dynamic integration is the accumulation of the number of digital learning resources in different activity systems through the interaction of basic elements such as activity subjects, objects, tools, rules, communities, and division of labor. On the other hand, the dynamic integration of digital learning resources is achieved through the interaction of different activity subjects, i.e., in the process of education and teaching practice, learners carry out a certain amount of resources, and with the help of the functional design of the dynamic integration of digital learning resources, effective evaluation and feedback information about the digital learning resource system in the learning process are transmitted to the implementer. The two-way interaction of information realizes the orderly organization and management of relevant resources.

Specifically, the left dimension is the basis of the right dimension and the right dimension is the test of the left dimension, both of which are designed to better play the supporting role of digital learning resources in the digital

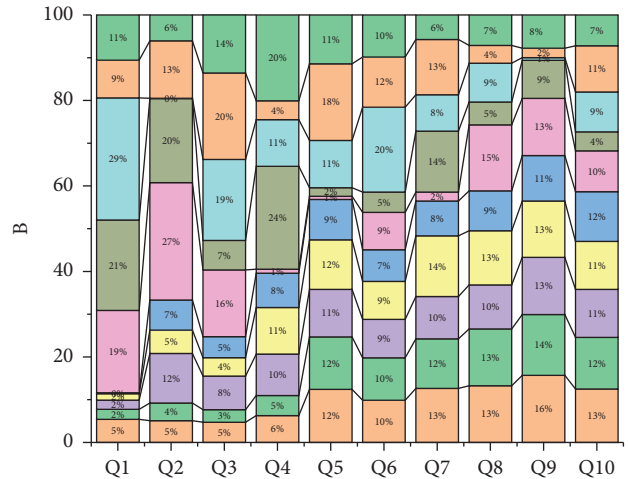


FIGURE 5: Usability evaluation of the whole system.

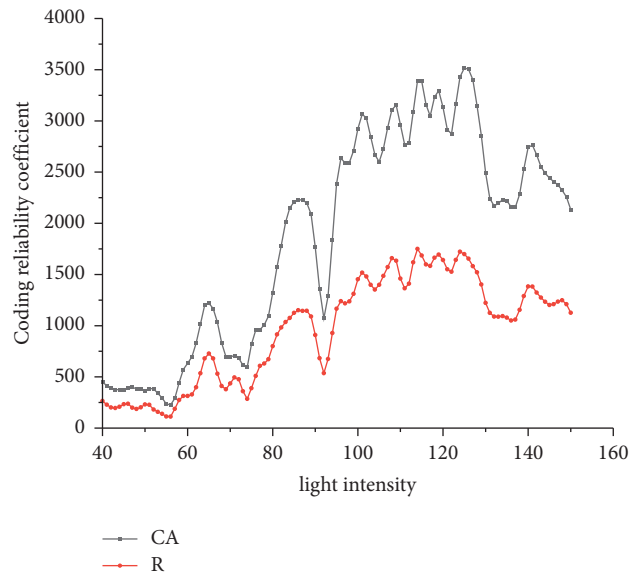


FIGURE 6: Categorization consistency and coding confidence coefficient.

learning process and are dynamically mapped in the digital learning activities, reflecting the “learner-centered” design concept and making it a reality. This means that the resources are dynamically mapped onto activities, reflecting the “learner-centered” design concept and turning it into reality. In the specific study, the process of dynamic integration of digital learning resources is expressed through the specific operations of different activity subjects and thus provides an operational practice for teaching applications. On the basis of relevant research, the research method combining qualitative and quantitative research is adopted, and the concept of “dynamic integration of digital learning resources” is innovatively proposed, and starting from the research problem, the concept of dynamic integration of digital learning resources is defined. Construct the theoretical model of the dynamic integration of digital learning resources and carry out research on the teaching application

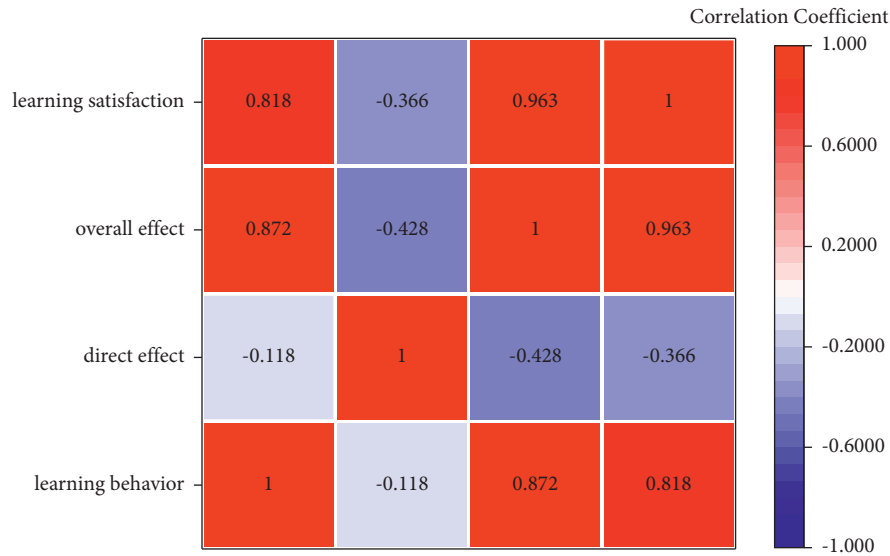


FIGURE 7: Latent variable effect relationship.

of the dynamic integration model of digital learning resources and the evaluation and analysis of the dynamic integration model of digital learning resources.

**4.2. Analysis of Application Experiment Results.** Although the dynamic integration effect model of digital learning resources proposed in this study is based on the relatively mature technology acceptance model and the information system expectation confirmation model, the two models are combined and new influencing factors are added in the specific study. To explore the path relationships of effects more accurately among the variables in the theoretical hypothesis model, this study first adopts an exploratory-oriented structural equation analysis based on the partial least square method to conduct an exploratory analysis of the survey data and initially test the reasonableness of the overall fit of the theoretical model and the assumption of path relationships among the variables. The VIF should be less than 5, and then the model estimation is more accurate. SmartPLS uses the variance inflation factor as a diagnostic indicator to test the covariance of the model, as shown in Figure 7.

The indirect effects of external factors on learners' satisfaction, continuous use intention, and learning behavior were 0.25, 0.33, and 0.15, respectively, by positively influencing perceived ease of use and expectation confirmation, i.e., the higher the quality of content and ease of use of the dynamically integrated digital learning resources system are, the more it is conducive to increasing satisfaction and continuous use. The higher the expectation confirmation is, the more conducive it is to enhance learners' satisfaction, which in turn enhances their willingness to continue to use and their continued use behavior.

The indirect effect of the degree of expectation confirmation on learners' willingness to continue using the system and their learning behaviors was 0.50 and 0.23, respectively,

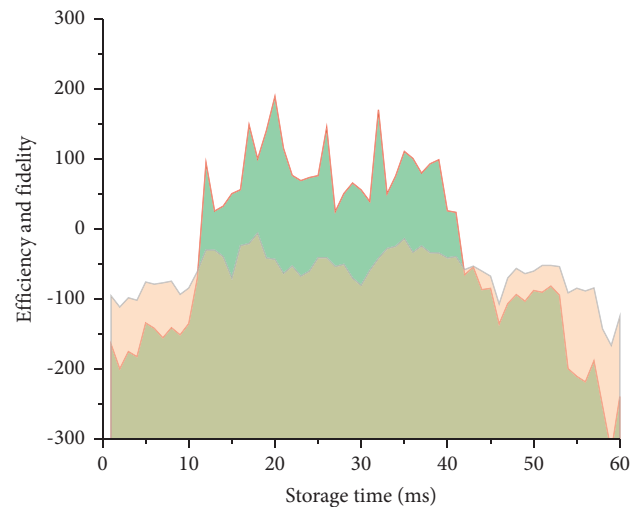


FIGURE 8: Analysis of experimental results.

which means that the higher the degree of satisfaction of learners' psychological expectations before using the system, the more they think that using the system is valuable for improving their learning performance and accomplishing their learning goals, and the higher their satisfaction, the more their willingness to continue using the system.

The learner satisfaction indirectly influences learners' continuous use behavior by affecting learners' willingness to use, and their indirect effects are 0.17, 0.20, and 0.24, respectively, i.e., convenient platform operation, perceived usefulness due to system content quality, and satisfaction due to effective use continuously increase learners' intrinsic willingness to use and indirectly promote continuous use behavior, as shown in Figure 8.

Overall, the scale and effect of digital learning resources construction are related to the deepening of informatization construction. After years of construction and development, in the construction of digital learning resources, the



emphasis on infrastructure construction in the initial stage has developed to the joint participation of multiple forces in the construction until the current abundance of various types of resource libraries and high-quality resources in quantity, which all provide a solid resource foundation for learners to carry out various forms of digital learning.

## 5. Conclusion

This study aims to address the instructional feedback problem that exists in the children's art teaching system, to positively reinforce the motivation of children with instructional evaluation, create a positive and enjoyable teaching experience for them, and visualize feedback information for teachers and parents. Based on the cognitive development theory, the feedback method of obtaining prizes with quantitative teaching evaluation makes the children pay equal attention to the results of teaching and learning after class. Teaching phonics, physical education, and aesthetics have always been key areas of extracurricular teaching for children. Along with the upgrading of the education industry and the renewal of the market, the future teaching evaluation feedback is more diversified and the evaluation criteria tend to be more comprehensive. Parents and teachers can visualize children's teaching process and cognitive development stage process with the help of the teaching evaluation feedback system, and children are rewarded based on the results of teaching evaluation feedback, thus positively reinforcing learning behavior and forming a virtuous cycle. Interactive teaching and learning are characterized by a focus on developing specific, concrete strategies to promote understanding. In practice, interactive teaching values mutual support and facilitation between learners; teachers should help students to discuss their understanding of the text rather than just repeat words and phrases; they should be flexible in using students' understanding and linking it to new knowledge; conversations should be thematic and directed; both students and teachers should understand the objectives of the teaching, and teachers' comments on students' statements should lead to more positive constructive responses. Interactive teaching and learning is a method of teaching and learning in which the teacher's teaching and the students' learning interact equally and autonomously around a particular problem or topic in a micro-teaching situation and on a multipoint free-cutting teaching platform.

## Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

## Conflicts of Interest

The authors declare that they have no conflicts of interest.

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