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Construction and Application of Yancheng Education Cloud Resources and Coping Strategies

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Abstract

Yancheng Education Cloud Platform has made some achievements since 2016, but through research and data analysis, it is found that the following problems exist: the construction of subject curriculum resources is not balanced, the development of curriculum resources is not systematic, the "island" of information resources is serious, the lack of process resource construction and the lack of a positive evaluation system. The education cloud platform resources cannot meet the needs of teachers in teaching. According to the problems in the construction and application of Yancheng education cloud platform resources, through reading the literature and according to the characteristics of Yancheng local resource construction, in order to build a rich and personalized information digital education resource database, the following suggestions are put forward: constantly improve the construction of digital education resource infrastructure; Break through the barriers of inter-regional digital education resource platforms and improve the digital education resource service system; Explore the resource sharing mechanism and promote the co-construction and sharing of high-quality education cloud resources; Improve the information literacy of teachers and students and promote the effective application of education cloud resources; Improve the construction and application guarantee system of education cloud resources and promote the normalized application of resources.

Keywords

Education Informatization, Education Cloud, Network Education Resources, Education Resource Cloud Platform, Regional Education Informatization

1. Introduction

The Action Plan of Education Informatization 2.0 issued by the Ministry of Education in 2018 clearly states that "to meet the needs of talent training in the new era and the information society, we should build a new education ecology centered on learners, achieve fair and quality education, and promote the all-round development of people" (MOE, 2018). Education informatization 2.0 is the inheritance and in-depth development based on the solid achievements made in education informatization 1.0. It takes big data and intelligent technology as the contact point, emphasizes technological innovation and mechanism innovation, and focuses on the comprehensive development of human beings. It aims to reconstruct a new education ecology, and form a Chinese wisdom and China plan of education informatization with international advanced level (Hu & Zhang, 2018). Building a smart education cloud platform based on the big data environment is an important means of China's current education informatization (Luo, 2021). Education cloud is the basic structure of education informatization, and digital resources are the "soul" of education cloud platform. Without digital resources, education cloud cannot realize the network and intelligent education; without digital resources, education cloud can only be a flashy "body" (Wu, Wang, & Peng, 2019). Most of the scholars' research on the construction and application of educational cloud resources focuses on the macro level, mainly studies the problems existing in the overall informatization, and fails to give specific and targeted suggestions, which makes the lack of theoretical discussion on the construction of regional education digital learning resources in China. Therefore, what are the problems existing in the construction and application of regional education cloud resources? How to improve the effectiveness of the construction and application of education cloud resources is of far-reaching significance to improving the level of regional education informatization and promoting the balanced development of urban and rural education.

2. Concept Definition

2.1. Education Cloud Resources

Educational cloud resources is a technology that provides or shares different types of resources through organizers and learners (Zhao, 2018). The main goal is to solve the problem of single source of personalized learning resources, and educational cloud resources belong to one kind of resource construction system. Educational cloud resources belong to the category of learning concept, which refers to all digital resources that can be shared and designed by learners through resource retrieval, management and operation through network technology and communication system.

In the cloud resource environment, learners need basic learning terminal (smartphone, PC), use of education cloud resources database, through the network link to provide extensive learning cloud resources platform, can obtain learning resources anytime and anywhere, so as to realize the extensive learning,

don't spend too much energy to construct their learning terminal on the terminal (Zhang et al., 2022). By carrying out the spatial expression of cloud resources, the single transmission direction of resources is transformed into a ubiquitous and shared multi-dimensional service mode, so as to realize the goal of "discrete resource aggregation and integrated resource sharing" (Zhang, 2014). Yancheng teaching resources cloud platform is in response to the national policy about "three links two platform", coordinate local Yancheng "wisdom" strategy, on the basis of cloud computing, through the information technology and teaching process depth fusion, covering the core application of education cloud platform, gathering the third party high quality resources and application, facing domain education institutions at all levels, teachers, students and parents to provide one-stop teaching service online platform.

2.2. Educational Cloud Resource Application

According to the concept of education cloud resources, a rich teaching cloud resource service platform is built to carry out unified management and collaboration, and provide ubiquitous learning support for learners through cloud service. Especially the library digital resources storage, management is make full use of the advantages of cloud resources technology, convenient for the reader, solve the bottleneck of resources single transfer, for the library and learners between information sharing, so as to improve the digital application level of library and resource utilization (Guo & Sun, 2022). Many educational scholars have carried out in-depth research on the architecture of educational cloud resource service platform. Starting with the organizational structure and knowledge management of cloud resource development, they have classified the knowledge of cloud resources, so as to make the cloud resource construction become the extension and expansion of knowledge management. Canadian scholars (Shih, 2003) for specific research content of academic retrieval, the analysis found that most of the research on knowledge service on knowledge innovation, knowledge management and knowledge industry in several aspects, so will construct the relevant knowledge management cloud repository, knowledge management database and knowledge industry model as a research focus. Through the study of related concepts and structural model of cloud resource system, put forward the educational knowledge service system model based on calyptus system, and realized the goal of adjusting cloud resources through the dynamic factors of resource analysis such as knowledge situation and load capacity (Gao, Zhang, & He, 2010).

3. Research Objects and Methods

This study not only focuses on the construction of educational cloud resources but also the application of completed resources. From the perspective of construction, Yancheng education cloud platform is taken as the research object, and it obtains the policies, plans, programs and platform resources of the con-

struction of education cloud resources in Yancheng. Yancheng education cloud resources application mainly for the city primary and secondary school teachers, students and parents, but the current platform mainly registered users for the construction of school teachers at all levels, so the application of research resources mainly platform primary and secondary school teachers users as the research object, through online questionnaires and offline interviews for research data.

4. Current Status of Yancheng Education Cloud Resource Construction

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4.1. Basic Situation of Education Cloud Resource Construction in Yancheng

As a Prefecture-level city of Yancheng education cloud resources include: national education resources public service platform resources, Jiangsu Province smart education cloud resources, Yancheng smart education cloud resources, some district and county education cloud resources and various third-party education cloud resources. This study focuses on the construction of smart education cloud resources in Yancheng.

1) Build a smart education cloud platform

In 2016, the basic data module of the city smart education cloud platform supports the deployment of municipal, county and school level, and collects the basic data of students, teachers, parents and schools, as well as the maintenance functions of administrative institutions, disciplines, semester, classes, school affairs information, inquiry and adjustment. Platform for all education system users and application system, according to the national Ministry of Education information standard and specification construction unified data standard, provide a unified data management entrance, unified management, maintenance and authority control, is the application system access, single sign-on, basic information connectivity unified certification center. The platform provides a unified information portal to centrally display the application of various subsystems and data summary and statistical analysis. Realize the docking with the basic data of the national and provincial education cloud platform, and share and exchange the data as the education system of the city's information resource management and government affairs cloud platform.

In 2017, the digital resource database, teacher lesson preparation, network teaching and research, activity display, maker education and other modules will be built.

The first and second phases of Yancheng Smart Education Cloud Platform will be built to achieve seamless connection with national and provincial education data centers and smart Yancheng level data centers.

2) Build an online class for famous teachers

In 2020, the "Online Classroom for Primary and Secondary schools in Yancheng" will be built, with 7 viewing paths to meet the viewing needs of various terminals and effectively solve the problem of network congestion. During the implementation of the "school suspension" of "New Crown" of the epidemic, the average daily number of students on-demand exceeded 600,000 times, the average daily on-demand volume reached nearly 1.9 million times, and the cumulative on-demand volume reached 50 million times. All 17,700 classes in primary and secondary schools in the city set up "virtual classes", and teachers carried out online learning guidance through "Wechat group", "QQ group" and "recording classroom", with a coverage rate of 97.79% of students. In December 2020, the case of "Building Famous Teacher Classroom in the Air to Promote the Healthy Development of Students" declared by the Municipal Education Bureau was rated as one of the top ten innovative cases of the city's Internet and information work in 2020 by the Cyberspace Office of Yancheng Municipal Party Committee.

3) Build high-quality and characteristic digital resources.

During the 13th Five-Year Plan period, the audio-visual education and teaching and research departments at the municipal and county levels have built nearly 15,000 micro-courses, covering all sections and disciplines from pre-school education to senior high school. Through organizing activities such as "Yancheng Information Quality Class Evaluation" and "Yancheng Teachers' Multimedia Teaching Software Evaluation", about 6000 various micro-class resources have been gathered. Schools have purchased more than 300,000 high-quality digital teaching resources, including micro-lessons, teaching plans, courseware and classroom records, and the coverage of teaching material resources reaching 60.53%.

4.2. Deficiencies Existing in the Construction of Educational Cloud Resources in Yancheng

1) Unbalanced construction of subject course resources

Statistics show that in the platform, Chinese resources account for 27.2%, the highest proportion, mathematics for 16.7%, English for 14.4%, political for 14.4%, and physics for 10.0%, chemistry resources for 6.1%, information technology resources for 1.68%, music resources for 0.19%, art resources for 0.20%. The data show that the resource construction of the education cloud platform in Yancheng has the following characteristics: firstly, the development of subject resources of Yancheng is unbalanced, mainly in Chinese, mathematics and English subjects, while information technology, science, comprehensive practice course, music, fine arts, physical education and other disciplines, and the service orientation of Yancheng education cloud platform is oriented to the whole users of

basic education stage, but the resources of primary and secondary schools and the resources in the middle school. The 21st century requires the comprehensive development of quality-oriented education, but in the development of resources, ignoring the subjectivity of students.

2) The system of curriculum development needs to be improved

The teaching object in teaching is the subject of learning, that is, learners. In this process, we should first guide learners to learn in the learning process and do a good job in systematic design. First of all, we should be clear about the needs of learners, according to the needs of learners, formulate teaching objectives, teaching strategies, teaching strategies, and teaching activities, and teaching evaluation system. Then design the teaching or learning resources according to the required teaching process. In this process, it is not a simple personal teaching plan, courseware upload. A course is a whole, it has a chapter, unit, section, each section has heavy difficulty, and they are interrelated, and in the education cloud platform, curriculum knowledge development is too fragmented, some chapters is highlight a few sections, and even some chapters have no development resources, knowledge directly lack of links, and in the process of curriculum development, teaching media classification is not complete, most are in the form of document upload, and the amount of audio is less, cannot meet the needs of teachers.

3) Teaching resources are not updated in time, and the classification is not clear

Taking primary school Chinese as an example, it can be found in the resource management center, but each textbook is divided by "groups" with no clear meaning, or by the order of the text; it is not timely enough, most of the resources are updated from 2016 to 2021, and only a few resources are updated in 2022.

4) Lack of process resource construction

Education cloud platform is not only the basis of digital school resources centralized management and use platform, is the user to create courses, personal space, teacher studio, discussion community, project circle activity platform, such activities will create users in the platform for teaching and management and scientific research work, generate the height of the personalized, the characteristics of the process resources.

In the education cloud platform, the resources generated by the famous teachers' studio, topic discussion and individual learning space should be in the "dynamic" but in the process of "static" or "dead" at the present stage. For the new construction of the resources is just the "pendulum" above. Teachers do not improve the total amount of resources in the transformation, utilization and integration of the existing curriculum resources areas according to the teaching objects, teaching objectives, teaching activities, and the evaluation process of the courses, but the quality of the resources in teaching is not improved. This not only affects the teaching effect, but also hinders the development of the school

over time.

5) There is no evaluation index for process resource construction

Teachers' personal space can be curriculum resources construction and writing articles, found in the process of investigation of the teachers teaching task, teaching pressure is too big, no time to dress up their space, most teachers in order to be able to complete the task of the school by copying or write some value less comments, a lot of content and teaching content, this will lead to resource redundancy is too high, cause the waste of storage space platform. The main phenomenon is that there is no evaluation index system in the process of generating resource construction.

5. Application Status of Education Cloud Resources in Yancheng

5.1. Overall Application of Educational Cloud Resources

1) Relying on the carrier to promote the high-quality application

Taking "provincial Teacher Classroom in the air" as an important carrier to promote teacher development, organize teachers to carry out a series of activities such as "provincial Teacher Classroom in the air" for collective lesson preparation and theme discussion to continuously improve application ability and teaching level; municipal and county level research and education departments have organized more than 60 training activities, and provide 408 high-quality digital course resources to "provincial Teacher Classroom in the air". The core indicators such as Yancheng opening application and online Q & A are among the top in the province. Jiangsu Provincial Department of Education has compiled and printed special briefings to promote the experience and practices of Yancheng.

2) Comprehensive promotion of provincial platforms

Since March 2019, in accordance with the unified deployment of the Provincial Department of Education, the city has earnestly promoted the use of "Provincial Famous Teachers' Classroom in the Air", so that every student can enjoy high-quality, public welfare and universal education and teaching resources, and promote the high-quality development of compulsory education. According to the background statistics of "provincial teachers", the number of "provincial teachers students" in Yancheng is 718,500, with a registration rate of 136.74%; the number of teachers is 41,059, with a registration rate of 93.79%.

3) Promote the three classroom applications

Formulate the Implementation Plan for the Construction and Application of Yancheng "Delivery Classroom", "Famous Teacher Classroom" and "Famous School Online Classroom", and actively promote the pilot application of "provincial urban and rural pair interactive classroom" and "provincial Network Delivery Classroom". A total of 82 schools in the city have joined the provincial pilot project of urban-rural pair interactive classes, among which, there are 1 lecture classroom and 81 listening classrooms.

5.2. Teachers' Application of Education Cloud Resources

In this survey, questionnaires were distributed to 7 schools in Yancheng in the form of Tencent questionnaire, and a total of 198 valid questionnaires were collected. The statistical analysis of some representative survey problems is as follows.

1) Statistics on the school information construction of the respondents

Teachers are the main body of the application of platform resources, and the learning information infrastructure has become an important factor to determine whether the smooth use of platform resources. Understanding the information construction of teachers' unit is conducive to ensure that teachers have a certain representativeness and can reflect the information infrastructure construction of most schools in our city. Forty-seven percent of the teachers participating in the survey have accepted the construction of smart campus, and 13.6 percent of the teachers are accepting the construction of smart campus. Therefore, it can be seen that the schools of the teachers participating in the survey have a good information basic environment and can engage in the educational application of cloud platform resources.

2) The use of digital learning resources in daily teaching

Among all the platform resources, the utilization rate of PPT and other courseware resources is the highest, reaching 84.3%, and the utilization rate of video resources is 58.1%. It can be analyzed that the main purpose of teachers using cloud platform resources is to download teaching courseware and video cases, and mainly obtain media resources.

3) Teachers should mainly use the cloud platform resources

Teachers use cloud platform resources mainly for lesson preparation, courseware making, subject teaching and test preparation. Among them, 79.3% use cloud platform resources when preparing for daily teaching preparation, and 85.9% use courseware making. Using cloud platform resources for teaching activities only accounts for 27.8% and 23.2%, which are used for teaching q & A and teaching feedback respectively.

4) The cloud platform resources that teachers need most

Corresponding to the purpose and purpose of teachers' use of the platform for lesson preparation and classroom teaching, 83.3% of teachers think they need courseware most, and 70.2% of teachers need typical demonstration courseware, which reflects teachers' demand for high-quality courseware.86.4% of the teachers choose to hope the platform to submit excellent teaching design cases, which shows that how they use resources to carry out effective teaching in teaching activities has become a difficult problem for them. 51% of the teachers hope that the platform can provide comments resources of famous teachers, and 38.4% of the teachers hope to get electronic versions of teaching theory works.

6. Yancheng Is Concerned about the Construction and Application of Educational Cloud Resources

Combined with the statistics of the objective data of Yancheng Education Yunping

and the analysis of research and interviews, there are the following problems in the construction of local resources on the education cloud platform.

6.1. "More" Registration User, "Less" Users Open

In the survey, it is found that only 2.4% of the teachers using the platform often log on the platform, while 94.22% of the teachers occasionally log on the cloud platform to use the intelligent application system, and 96% of the teachers log in to complete the teaching tasks assigned by the school. For most teachers do they use it for a purpose. The main reason is that teachers think the quality of resources is not high and the login process is too cumbersome.

6.2. The Training Method of Intelligent Application System Is Too Single

In the survey, 58% of the teachers have seen the training, and their training method is mainly about how to operate the platform. 81% think that the training teachers focus on the operation of technology, and 80% think that it will have little effect on the teaching effect. This is also why teachers are not willing to use the education cloud platform. Teachers hope that the training methods can combine theories with specific cases, and can bring different ways to their own teaching effects.

6.3. There Are Quality Resources but Teachers Are "Not Clear"

The high-quality digital education resources that have been built on the platform include synchronous resources and a large number of teaching cases of all disciplines in grades 1 to 9. The construction purpose of these resources is to solve the shortage of teachers in some schools, supplement teaching resources, reduce the burden of teachers, etc.; The completed digital library system includes culture, science, history, geography, astronomy and natural science, "one teacher, one excellent class" suitable for teachers to observe and learn, and highly efficient, convenient and fast access to the NPC copy materials, which can improve the efficiency of teachers' scientific research work, However, during the interview, the teachers did not know that there are so many high-quality resources on the platform and that these resources can be easily obtained through the cloud platform.

6.4. It Cannot Meet the Diversified Needs of Users and Is Lack of Systematic Resources

According to the survey, 57.69% and 76.92% of the animation and audio and video in the digital resources can improve the efficiency of teaching. However, when 92.31% of teachers use the class in teaching, the development of PPT in class resources is not in line with the needs of teachers, Among them, the main problem of teachers in finding resources is that 73.08% believe that resources are dispersed, Not suitable search; 56.9% said the amount of resources is massive, But the relevance and adaptability in teaching are not enough; For the learning

value of resources in the platform, 61.54% of teachers think it is average, 35% of teachers think it is worthless and most teachers are reluctant to recommend the resources in the platform to students; The overall reflection of the interviewed middle school teachers is that the education cloud platform is the high-quality resources of most Chinese primary schools for the construction of primary and secondary school resources is less. We know that different subjects, different teachers and different teaching materials have different forms of teaching resources. According to the overall analysis, the current educational resources are at the same level, which is lack of pertinence for learning users, and cannot meet the diversified needs of users.

6.5. Teachers Lack Systematic and Effective Training in the Application of Platform Resources

The questionnaire found that most teachers have received training in the education cloud platform, but the effect of the training is not particularly ideal, in order to deeply understand the reasons for this phenomenon in teachers, through the interview, most teachers give feedback that they are training on the education cloud platform. First, there is no specific case study presented, in the absence of teaching application scenarios, most of the training process focuses on the application of teaching software, just in promoting the use of teaching software, and a lack of disciplinary support, in teaching, information technology is separated from subjects, not being integrated into one piece, teachers' lack of interest; last, during the course of the training, focus on the teachers of all subjects in the training, the applied cases are other subjects or even college teaching cases. In general, there is no complete bridge between theory and technical guidance in such a training process, which leads to the unimprovement of the application teaching effect of educational cloud resources.

6.6. Insufficient Information Management Personnel of the Platform and the School

Through the interview with the platform and school information management personnel, due to the constraints of funds and objective conditions, mainly as: first, the management of the platform is less, there is no special resource audit personnel and data update personnel, the resources uploaded by teachers can be uploaded, and the platform, the management of the management of the platform is only the publicity of the platform, and the weekly increase of resources. Feedback on problems encountered when using a feature, or stay at the technical level, the lack of personnel leads to the "quantity" of the core support resources of the education cloud platform; second, school teachers have very few information management personnel, in primary and secondary school information administrators are information technology teachers, in a school with about four or six IT teachers, not only do they have to take on about 15 classes a week, and some even run the school's network center, reimbursement of the equipment undertaken, financial affairs and other responsibilities, resulting in more tasks, there is

no more time and task to manage the upload of resources on the school platform and a lot of content in the training, this also leads to the reluctance of smart application systems on education and platforms.

6.7. Platform and School Support Services Are Not in Place

First, in the process of interview, teachers reflect a school has several systems, teachers just familiar with a platform, less than a year need to feel constantly learning the content of the platform, they like to use problems, the background support service personnel can solve problems immediately, don't delay their teaching time, they think, in the process teaching the platform because of the number of more, technical personnel is limited, then feedback the other problems, even if sometimes the system updated the feedback problem is still exist, teachers are slowly not willing to use.

Second, the support of the school is not enough. Although many schools have complete hardware equipment, the concept of software and teaching is relatively weak. Mainly is the school graduation rate, and some school leaders do not pay attention to the information leadership, do not publicize, so the school in the informatization scale and normalized application; third, although our goal is the school platform, class resources, everyone use space, but cannot realize the class resources at the present stage, mainly because the school did not develop a promotion strategy, formulate the corresponding incentive mechanism and let teachers interested in making quality resources to serve the class, the attitude of teachers is just to finish the "task".

7. Yancheng Education Cloud Resource Construction and Application Promotion Strategy

On the basis of the detailed analysis of the current situation and existing problems of the construction and application of educational cloud resources in Yancheng, combined with the concept of Internet education, the strategy of the construction and application of educational cloud resources to meet the actual development needs of Yancheng from the aspects of the basic environment construction, the construction of service system, the construction and the reform of application mechanism.

7.1. Constantly Improve the Basic Environment Construction of Digital Education Resources

A sound network environment and perfect information hardware equipment are the necessary means for the construction and application of digital education resources. In order to ensure the smooth development of the application of digital education resources, it is necessary to further improve the construction of the basic environment of digital education resources, and narrow the gap between the interschool digital education resources. The following is proposed:

1) In the new national infrastructure construction as an opportunity, on the basis of the existing big data, artificial intelligence, Internet of things, chain

blocks, 5G such as a new generation of information technology to support the transformation and upgrading of education informationization, including new education information infrastructure, education resources services, education data management, wisdom education application, education network security system, the construction of more open and flexible Yancheng education informatization of new ecology.

2) The region needs to strengthen the investigation and mapping of school information teaching equipment, and increase the daily management and maintenance of equipment terminals. It is necessary to timely maintain and update the teaching equipment that cannot be used normally and beyond the service, so as to improve the equipment rate of digital education resources related equipment (such as computers, mobile terminals, etc.), and effectively meet the needs of teachers and students for the application of educational digital resources.

3) Have the ability of county or school can build a guest classroom, electronic package, STEAM classroom, the future classroom innovation teaching environment, and provide teachers with search related resources of equipment such as tablet, play to the advantages of innovative teaching environment, deepen the application, training teachers in inquiry teaching, interdisciplinary teaching, project teaching in teaching mode of digital education resources, improve the application ability of teachers' innovation environment.

7.2. Break down the Barriers of Inter-Regional Digital Education Resource Platform, and Improve the Digital Education Resource Service System

"Education Informatization 2.0 Action Plan" emphasizes the need to improve the public service system of digital education resources, optimize the service mode and ability of "platform + education", and realize the transformation from "dedicated resource service" to "large resource service". In view of the problems existing in resource construction and application in Yancheng, the following suggestions are put forward:

1) In terms of the interconnection of digital education resource platforms, the advantages of "the whole city is a chess game" should be given full play. The digital education resource platforms of counties and districts should connect to the national public service system of education resources or the public service system of basic education resources of Yancheng Province, and communicate with other counties and districts or school platforms to share regional characteristic resources.

2) In terms of the construction of digital education resources, we should formulate the access standards for the construction of digital education resources, improve the resource access mechanism, strengthen the interconnection of various resource platforms at all levels, improve the service supply capacity of educational resources, and effectively support schools and teachers and students to carry out information teaching application; Follow the principle of multiple introduction, establish resources introduction standard, led by the government, foster dynamic and competitive digital resources service market, on-demand

purchase quality resources service, and more abundant and more dynamic, more efficient way to reconstruct high quality education resources and service "balance between supply and demand", make the high quality education resources of all levels of primary and secondary schools cover more meaningful.

3) Improve the function of digital education resources platform, improve the digital education resources service system, improve the platform of resources search accuracy, by set dedicated duty, by the professionals understand the current textbook version, update platform resources match the current teaching material, unified version, concentrated class, so as to achieve better resource sharing, platform function design can consider the characteristics of each disciplines, to provide and subject characteristics and more practical operational resources, to facilitate teachers operation and reduce the burden of teachers, improve students' learning efficiency and effectiveness. Appropriate increase of the question bank, such as mathematics, physics and other subjects. In view of the current problems of inaccurate resource retrieval and weak pertinence, big data can be used to analyze users and make intelligent push. Enhance digital education resources platform mobile teaching support function, "mobile, open, sharing, collaboration" is the development direction of future learning, the platform architecture also need to provide matching function, the current counties of some digital education platform can only through the web or PC login, platform can be further optimized, access to my Yancheng APP.

4) In addition, the improvement of the digital resource platform is a continuous process, which needs to continuously integrate and gather resources in the development, improve the subsystems of network lesson preparation and network teaching, and enhance the sense of user experience. The platform should also provide access standards for third-party applications and support the access of third-party system platforms, so that the digital education resource platform has a good expansion.

7.3. Explore the Resource Sharing Mechanism and Promote the Co-Construction and Sharing of Quality Education Cloud Resources

It is the necessary steps to promote education equity and improve the quality and efficiency to use the digital education resource platform and network technology, improve the resource sharing environment and explore the resource sharing mechanism.

1) Strengthen the training of teachers' resource application ability, help teachers to clear away technical obstacles, and improve teachers' teaching ability of information technology and curriculum integration.

2) The digital education resources application of high enthusiasm, resources application effect is good area or schools as a pilot, in the pilot areas or school training digital education resources application backbone, encourage the backbone teachers to break the original use way, try to use the new resources innovation teaching strategy and methods, thus forming a typical case, play the pilot

area or pilot school teachers backbone radiation, promote other areas or school teachers the application of digital education resources in practice.

3) Regularly organize communication, display and teaching and research activities on the application of digital education resources. Through peer communication, expert guidance, teaching discussion and other activities, improve teachers' ability to effectively apply various resources, stimulate teachers' motivation to innovate the application of resources, and further promote the deep integration of digital education resources and teaching.

4) Build intelligence resources sharing system mechanism is the core of high quality education supply side reform, is the high quality teacher resources sharing, should emphasize quality digital education resources sharing, to emphasize the direction of high quality intelligence resources sharing, so the county education departments should gradually build perfect intelligence resources sharing system mechanism, promote the construction of intellectual resources.

5) We will further promote intellectual resource sharing activities such as synchronous classroom, special classroom, famous teachers, and double-teacher teaching, so as to provide high-quality educational intellectual resources for weak schools and promote balanced development among regions.

6) Promote the sharing and assistance of intellectual resources, and carry out the pairing assistance work of "Internet + universities + famous universities + famous teachers" to the county and district education authorities to promote the integrated reform of urban and rural compulsory education in the region. So counties can rely on the provincial digital education resources platform actively promote intellectual resources sharing activities, its activities need to cover all rural schools and rural weak schools and teaching, form the "urban and rural synchronous classroom", "remote classroom", "teacher network training", "teacher network class" a variety of application mode, innovation school pairing support mechanism, promote quality education resources sharing, expand high quality education resources, realize the urban and rural pairing support school management, teaching research, resource sharing, information, interaction between teachers and students, complementary differences.

7.4. Improve the Information Literacy of Teachers and Students, and Promote the Effective Application of Educational Cloud Resources

With the improvement of digital education resources construction of digital education resources literacy become the key to enhance the level of digital education resources application, is one of the important factors in the structure of teachers' information literacy, improve teachers' information literacy, can promote teachers to adapt to informatization, artificial intelligence, actively and effectively carry out education teaching. In view of the existing problems, the following suggestions:

1) Pay attention to the theory of digital education resources, popularize the concept of digital education resources, fully understand the role of digital educa-

tion resources in daily teaching, set up the correct idea, teachers only improve the theoretical accomplishment, truly realize the digital education resources to improve the value of education teaching quality, the digital education resources have a clear positioning, down-to-earth ability to digital education resources applied to the education teaching.

2) Provide teachers with digital education resources to promote information teaching integration application training, training should focus on training and education informatization matching new teaching mode, training content should involve digital education resources, teaching software design and production, information technology and curriculum integration, teaching design and teaching methods, etc., improve the teachers' ability to use digital education resources.

3) Promote the application of digital education resources in the form of "promoting use by competition", and make teachers with low enthusiasm in the application of digital education resources be reflected in teacher evaluation, performance assessment and professional title evaluation, so as to improve the deep integration of digital education resources and courses.

4) Play a leading role of digital education resources application model teachers, form a cross-regional, cross-school pairing support group, build teacher development community, to show, to point with line, to line surface, from the overall application of digital education resources, everyone in good situation, and promote the development of digital education resources application of primary and secondary schools in the city.

5) Pay attention to the cultivation of students' information literacy. In "China Education Modernization 2035", China proposes to encourage students to use information means to explore and find independently, enhance students' awareness of informatization and innovation, and improve students' ability to use information technology to analyze and solve problems, which is in line with the national requirements of cultivating innovative talents under the conditions of informatization. Help students to understand the concept of digital education resources, learn to use digital education resources, know innovation teaching mode (such as 3D printing, new technologies, such as artificial intelligence, a guest, robot programming, STEM education), organize students to participate in hybrid, virtual fusion education teaching activities, improve students' information innovation consciousness, develop innovative thinking, and focus on students' core ability in the 21st century, enhance students' autonomous learning ability, communication and cooperation ability, practical ability and problem solving ability, etc. To sum up, the application of digital education resources and curriculum should be deepened on the basis of improving the literacy level of digital education resources among teachers and students.

7.5. Improve the Construction and Application Guarantee System of Education Cloud Resources, and Promote the Regular Application of Resources

"Education Informatization 2.0 Action Plan" mentioned that we should com-

prehensively improve the ability of "people" as the core basis of promoting the education informatization 2.0 action plan, vigorously carry out education informatization related teacher training, expand the scale of various training, innovate the training mode, and enhance the effectiveness of training. In view of the existing problems, the following suggestions are put forward.

1) At the municipal level, supporting policies should be formulated to ensure the construction and application of digital education resources, and an assessment mechanism and incentive mechanism should be established to promote the sustainable and healthy development of the construction and application of digital education resources.

2) At the school level, relevant assessment mechanisms, incentive mechanisms, school-based training and other mechanisms should be established and improved to promote the construction and application of digital education resources in schools.

3) Guided by practicality, carry out application training for innovative hardware equipment and resources purchased by schools, to help teachers to better use new equipment and new resources to explore new teaching methods, and promote the regular application of resources.

8. Conclusion

This paper studies the education cloud platform resources of Yancheng City from two aspects of construction and application, and draws the following conclusions based on the corresponding survey and data analysis.

First, in the construction of digital resources for education cloud platform, Yancheng has made certain achievements. The number of digital resources for cloud platform is large and the number of cloud platform users is large, but there are still the following problems: the overall quality of resource construction needs to be improved; The distribution of resources in various disciplines in the education cloud platform is uneven, the teaching resources are not updated in time, the classification is not clear, and the systematic development of curriculum resources needs to be improved; Lack of process resources, lack of process resources evaluation index system.

Second, in terms of resource application, there are some problems: few teachers actually use platform resources regularly in teaching; Teachers lack systematic and effective training in the application of platform resources; The information management personnel of the platform and the school are insufficient, and the service is not up to standard.

Thirdly, according to the survey of the current situation of the construction and application of Yancheng education cloud platform resources, combined with the literature and the specific situation of Yancheng City, this paper proposes strategies to promote the construction and application of Yancheng education cloud resources: constantly improve the construction of digital education resources infrastructure; Break through the barriers of inter-regional digital education resource platforms and improve the digital education resource service

system; Explore the resource sharing mechanism and promote the co-construction and sharing of high-quality education cloud resources; Improve the information literacy of teachers and students and promote the effective application of education cloud resources; Improve the construction and application guarantee system of education cloud resources and promote the normalized application of resources.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

Gao, H. Q., Zhang, C., & He, J. (2010). Research on the Educational Knowledge Service System Model Based on Eucalyptus. *Modern Educational Technology, 20,* 121-124.

Guo, L., & Sun, L. (2022). Construction of a Regional Education Resource Cloud Sharing Platform Based on Cloud Computing. *Digital Technology and Applications, 40,* 156-158.

Hu, Q. T., & Zhang, X. M. (2018). Interpretation of the Connotation, Thinking Mode and Systematic Change of Educational Informatization 2.0. *Modern Distance Education Research, No. 6,* 12-20.

Luo, S. J. (2021). Research on the Construction of Smart Education Cloud Platform Based on Big Data Environment. *Education Observation, 10,* 120-122.

MOE (2018). *Education Informatization 2.0 Action Plan.*
http://www.moe.gov.cn/srcsite/A16/s3342/201804/t20180425_334188.html

Shih, B.-Y. (2003). The Research of the Development of an Intelligent Knowledge Service Model. *IKE03 International Conference* (pp. 459-465).

Wu, D., Wang, C. X., & Peng, X. (2019). Overview of Research on Educational Informatization Standards. *Audio-Visual Education Research, 40,* 45-51+76.

Zhang, H. X., Liu, Q., Wang, X. Y., Zhao, H., & Wang, C. J. (2022). Research on the Optimization of the Ubiquitous Teaching Resource System of Leisure Management under the Background of New Liberal Arts. *Journal of Shijiazhuang College, 24,* 142-147.

Zhang, S. (2014). A Ubiquitous Learning Study Based on Education Cloud Resources. *China Education Informatization, 19,* 24-26.

Zhao, J. (2018). Course Resource "Cloud Construction": Trend, Characteristics and Approach. *Curriculum, Teaching Material and Method, 38,* 37-43.