

Research on the Construction and Management Mode of Teaching Materials in Preschool Education Colleges Against the Background of Digital China

Fen Liu¹

¹ School of Arts, Fuzhou Preschool Education College, Fuzhou, Jiangxi, China

¹ Corresponding author. Email: Liufen0630@student.usm.my

ABSTRACT

The digital age has brought about continuous changes in the field of education, profoundly transforming the dissemination of education, teaching methods, and sharing of educational resources with the emergence of digital teaching materials. In the context of China's digital construction in 2023, the development and utilization of digital teaching materials have become a pressing issue for educators and policymakers. To address this concern, education departments and related institutions in China have responded to the call of digital construction, integrating national, local, and school resources to provide digital courses, materials, and establish cloud classrooms. Despite these efforts, the lack of high-quality digital teaching materials remains an urgent problem. Therefore, this paper aims to conduct a study on the design and management mode of digital teaching materials by taking the children's song singing course at Fuzhou Preschool Education College in Fuzhou, China as an example.

Keywords: Digital textbooks, Teaching resources, Children's singing course.

1. INTRODUCTION

In the era of the Internet and big data, print media publications have moved towards the path of digitalization. High-reading media such as People's Daily and Toutiao have kept pace with the development of the times, established special App software and WeChat public accounts, and transferred paper information resources to online digital platform resources. China's education department also closely follows the development trend of modern teaching materials and attaches importance to the construction and application of digital teaching materials. Colleges and universities in various regions have increased material and financial resources to release digital teaching materials for various disciplines on different teaching apps or portals, and gradually built and applied a large number of high-quality digital teaching materials.

The development of digital textbooks is highly dependent on computer networks and media information technology. With the popularization of self-media intelligent terminals, digital textbooks

are gradually integrated with computer applications. Digital textbooks have become an important medium for communication and data sharing between teachers and students, and their advantages of cross-time and space, and co-construction and sharing between teachers and students are gradually emerging. Especially driven by AI technology, digital textbooks have surpassed the content of traditional textbooks. Its built-in dictionary and exercise database can solve students' homework problems in real-time, and it has become an "assistant teacher" to a certain extent.

Against the backdrop of the increasingly prominent advantages of digital textbooks, the development of digital textbooks in art subjects lags behind, which may be related to the long-standing perception of art as a practical course. In the music major of universities, the development of children's music courses has always been in a weak position. Currently, there is no systematic digital textbook for children's song singing courses, and the most common ones are WeChat public accounts and mini-programs for singing children's songs. Although they have some functions of digital

textbooks to some extent, they lack systematic and targeted features and cannot be directly used as textbooks. However, the technological means of these public accounts and mini-programs can provide a reference for the development of digital textbooks for children's song singing courses.

2. LITERATURE REVIEW

Digital textbooks are electronic books or publications that follow students' reading habits, facilitate the organization of learning activities, meet the requirements of course objectives, and are arranged in a book-style format (Chen et al., 2012). According to Zhu Cailan and Li Yi, digital textbooks are a digital entity described based on digital technology, which can be accessed, managed, and supported through network resources (Zhu & Li, 2017).

The use of digital textbooks varies from country to country. In recent years, developed countries such as the United States, South Korea, and Japan have been at the forefront of applying digital textbooks. Textbooks in the United States are not uniformly compiled, and each state manages them independently, resulting in a lack of standardization. In 2007, Course Smart, a company in the United States, collaborated with fourteen publishers to produce more than 7,000 textbooks in electronic versions, which were made available to users through mobile terminals. California implemented a free digital textbook project in 2009 (Brown, 2012). At this time, digital textbook projects mainly placed the electronic version of printed textbooks at the end of the book. The issuance of the "National Education Technology Plan 2010" promoted the application of digital textbooks. Later, important publishers in the United States reformed based on the development of digital textbooks, adding related functions such as searching, dictionaries, and tests (Oliveira et al., 2014). After that, multimedia learning resources were added to digital textbooks based on the content of printed textbooks, but its essence is still an electronic version of printed textbooks. In teaching practice, printed textbooks still play a dominant role, which is closely related to the popularity of hardware at that time.

Chinese scholars (Wang, 2021) pointed out that digital textbooks in China have gone through three stages of development. The first stage is to digitize the content of printed textbooks; the second stage is to present digital textbook resources in a more diverse way than the first stage; and the third stage is to design more digital textbooks that focus on

user interaction. This development method integrates the digitization, tooling, and platforming of teaching resources.

China's earliest digital textbooks appeared in the 1950s and 1960s, and the initial development method was to use multimedia for projection and collect sound and images to form digital textbooks (Li, 2022). Later, these digital textbooks were placed on computer terminals for reading and developed into electronic textbooks. With the research and development of multi-disciplinary digital textbooks in first-tier cities such as Beijing, Shanghai, and Shenzhen, digital textbooks gradually acquired multiple functions such as feedback, interaction, analysis, and evaluation. Through digital textbooks, teachers and students can conduct teaching feedback and performance evaluation, and teachers have changed their role from knowledge providers to guides.

The rise of digital textbooks in China began with the emergence of the Chinese online learning platform "MOOC" in 2012. The new online learning method promoted the emergence of electronic textbooks and gradually formed a trend of textbook digitization. However, due to the global outbreak of the novel coronavirus in 2020, the Chinese Ministry of Education issued a notice on the postponement of the start of the 2020 spring semester on January 27, 2020 (*Notice on the Postponement of the Start of the Spring Semester*, 2020). To achieve the goal of "suspending classes without stopping learning," various schools faced tremendous pressure on how to provide suitable digital textbooks to teachers and students. Teachers and students urgently needed the assistance of digital textbooks.

As of March 20th, 2023, a total of 781 records were retrieved by searching the China National Knowledge Internet (CNKI) database using the keywords "e-textbooks" and "digital textbooks". The earliest studies on this topic date back to 1993, but research has been limited to the electronic version of traditional textbooks. Academic research on digital textbooks mainly focuses on the fundamental aspects of textbooks, teaching applications, design and development, and business models (Dang, 2020). The definition of digital textbooks varies among scholars, but most agree that digital textbooks are an upgraded innovation of e-books that use digital technology and elements to structure, store, transmit, display teaching content, guide the teaching process, and facilitate learning of all information and its organized entities that

meet certain teaching objectives and requirements. For example, (Xiang, 2005) defined digital textbooks as teaching materials that utilize digital technology and elements to structure, store, transmit, display teaching content, guide the teaching process, and facilitate learning, while (Gong et al., 2012) analyzed the origins of electronic textbooks, typical implementation projects at home and abroad, and current research status, concluding that the development of electronic textbooks requires policy support. The article also pointed out that there are still ten key issues in six dimensions, including standards, research and development, publishing, evaluation, management, and effective use, to be addressed in order to design electronic textbooks that are truly suitable for classroom teaching. Recently, (Wang, 2023) has pointed out that current digital textbooks have inadequate targeting, weak interaction, and lack of unified standards. Therefore, from the current research perspective, there is a lack of reasonable, feasible, and accepted digital textbooks, and the development and construction of digital textbooks lack systematic research.

3. REASONS FOR PROMOTING THE CONSTRUCTION OF DIGITAL TEACHING MATERIALS

China's Ministry of Education issued the Compulsory Education Curriculum Programme (2022 Edition) in 2022, which clearly states that textbook development should make full use of the advantages of technology and explore the construction of digital textbooks; teaching reforms should take advantage of new technologies, deeply integrate online and offline, serve personalised learning and create learner-centred learning environments. The importance of digital teaching materials is increasingly prominent (*Circular on the Issuance of Curriculum Programmes and Curriculum Standards for Compulsory Education*, 2022). While promoting the importance of digital textbooks, it also reveals the problems faced by textbooks today.

3.1 Shortcomings of Paper Textbooks

In the environment of the information age, paper textbooks have deficiencies in educational activities, and their problems are mainly manifested as follows: First, in the current era when knowledge lags behind the content, modern technology develops rapidly, knowledge updates are getting faster and faster, and paper textbooks are limited in

form. Second, due to the limited content and space, paper textbooks can only accommodate relatively limited knowledge content. Third, paper books cannot integrate dynamic content such as video and audio, and are mostly presented with static graphics. Fourth, the utilization rate of teaching materials is low, each class of students need to buy new teaching materials, and paper teaching materials are not easy to store for a long time.

3.2 Conceptual Problems

Although traditional paper textbooks are easy for teachers and students to accept, digital textbooks can reflect the uniqueness of teachers' teaching. How to build their own knowledge system and how to build digital teaching mode against the background of building a modern digital campus environment are great challenges for teachers in colleges and universities.

For students who are accustomed to reading paper textbooks, the reading habits of digital textbooks are still at the stage of cultivation and adaptation. At the same time, some publishers have not entered the field of digital publishing due to the traditional publishing concept, lack of understanding of digital teaching materials, or have no plans to systematically publish digital teaching materials, which has a negative impact on the construction of digital teaching materials.

3.3 The Diversified Demand of Educational Informatization Application Leads to the Boundary Ambiguity

The ultimate goal of the design and development of digital textbooks is to promote the modernization of education and support teaching and learning activities under the information technology environment. The development of digital textbooks has gone through several stages, from simply changing the form of textbooks with information technology, to enriching the integration design of media content and textbooks, and then to the deep integration of information technology and textbooks. This is basically consistent with the development stage of China's education informatization from multimedia assisted instruction to the integration of information technology and curriculum, and then to the deep integration of information technology and education and teaching. With the continuous development of educational informatization and the

gradual in-depth application in teaching, the design and developers of digital textbooks are increasingly inclined to meet more new teaching needs through digital textbooks, which leads to the problem of expanding the boundaries of digital textbooks in the development.

Some designers of digital textbooks will have doubts about the boundaries of digital textbooks: Can digital teaching materials that meet the requirements of curriculum standards, can be reviewed and inspected, and bear learning content and strategic information achieve the practical requirements of deep integration of information technology and education and teaching? Indeed, the digital textbook designed and developed according to the boundary principle discussed earlier may not be rich in content but simple in technical functions. Such digital teaching materials, facing the complex and changeable development needs of education informatization, will obviously be a little inadequate. However, from the perspective of rational application of textbooks, such concerns are unnecessary. Similar to traditional textbooks, the rational application of digital textbooks is "teaching with textbooks" rather than "teaching textbooks". Digital teaching material is only one of many digital curriculum resources, and it is not necessary to undertake all information teaching needs alone. On the contrary, only by clearly defining the boundaries of digital textbooks can digital textbooks better realize the core value of "cultivating roots and casting soul, and enlightening wisdom and increasing intelligence".

4. ADVANTAGES OF DIGITAL TEACHING MATERIALS

Compared with paper textbooks, digital textbooks have the following advantages. First, digital teaching materials are fast and convenient in the preparation process, easy to modify, update, store and carry, and can be customized according to actual needs. The cost of teaching materials construction process is low. Secondly, the use of digital textbooks for more vivid, intuitive and vivid teaching plays an important role in stimulating students' interest in learning and improving teaching efficiency. Thirdly, digital teaching material resources have the characteristics of open information. This can not only update teaching resources according to actual requirements, but also enable students to make full use of modern information technology for learning, thus gradually improving students' information awareness and

information technology application ability. Fourth, the compilation of digital textbooks can break through the limitations of time and space to a certain extent and reproduce the content of the textbooks. For example, the application of computer simulation practice scenario process can reduce unnecessary practice demonstration and effectively reduce resource waste.

The blurring of the boundaries of digital textbooks originates from the form of digital resources itself. No matter in theory or in practice, traditional paper textbooks have no problem of blurred boundaries. The form of paper textbooks is books, which naturally has obvious boundaries with other types of curriculum resources. For example, there are obvious morphological differences between textbooks and piano, violin and other teaching instruments for music. Few people will think that piano and violin are textbooks. But in the field of information technology, this situation has changed. The most important feature of digital teaching materials in the teaching material system is digitalization, including its existence and presentation in digital form and its use in digital form. Other types of digital curriculum resources also exist and present in digital form and are used in digital way. Like the music teaching tools that are obviously different from the textbooks, after being transformed into digital form, the differences between them become less and the commonality increases, which becomes difficult to distinguish. In many digital textbook samples, people can see virtual piano keyboard, virtual stylized performance actions and other types of curriculum resources. Physical piano and physical performance actions cannot be combined with traditional textbooks in paper textbooks, but virtual instruments and performance actions can be seamlessly integrated with digital textbooks.

5. STRATEGIES FOR THE CONSTRUCTION OF DIGITAL TEXTBOOKS

In the contemporary era of rapid development of information technology, the development of digital textbooks will also follow the development of the times and adapt to the needs of learners in the new era. The following strategies need to be followed in the construction of digital textbooks:

5.1 Innovation of Concept

As a new modern teaching tool, the use of digital media not only needs to innovate teaching models and update learning models, but also needs to update and share knowledge in time to narrow the teaching gap between paper textbooks and electronic textbooks. Therefore, the construction of digital textbooks, as a very important part of the construction of modern education informatization, will also become an important trend in promoting the development of the publishing industry. In the process of digital teaching material construction, university administrators need to closely combine with online course information construction, pay due attention to the conversion of digital teaching materials, improve teachers' understanding of the preparation of digital materials, advocate teachers to use digital materials for teaching, encourage teachers to innovate digital teaching materials, constantly improve digital teaching resources, and provide rich materials for the changes of digital teaching materials.

5.2 Requirements for Compilation of Digital Textbooks

Digital textbooks have the characteristics of information storage. Therefore, the compilation work has special requirements. The first is that when designing and developing digital textbooks, it is necessary to ensure that the text, formula, table and chart are accurate and consistent with unified national standards. The second method is to ensure the adaptability of page color and content, while maintaining the best match between background color and foreground color, so that the color difference between pages will not change too much. The third is to choose the right background music to make students have a pleasant reading experience. The fourth is to avoid setting multiple teaching points on the same digital page to distract students. The fifth is the format of digital textbooks should conform to students' reading habits. The sixth is that digital teaching materials should be as vivid and realistic as possible, so that students can quickly integrate into the curriculum.

5.3 Constantly Increasing the Development of Relevant APPs

APP has the closed feature of protecting corresponding intellectual property rights and making readers better record. The construction of digital teaching materials in APP has the

advantages of system, convenience and storage. The construction of digital teaching materials in APP can avoid learners from performing other tasks in the process of learning because it occupies the screen for a long time, thus focusing more on learning. When developing digital textbook APP, it is necessary to carry out personalized design for Android, PC, IOS and other systems, and fully consider the differences between different mobile intelligent terminals in the same application platform (computing speed and screen resolution, etc.), so as to improve the compatibility of APP for different types of digital textbooks.

5.4 Basic Ways to Optimize Application

At the beginning of the application of digital textbooks, teachers and students often do not have rich experience. Therefore, it is not only necessary to adjust the appropriate digital resources, but also to continuously optimize the basic methods of applications, enhance the experience of using digital textbooks, and improve the teaching effect. The purpose of digital teaching materials is not only to make it easier for teachers to use the corresponding digital resources for teaching, but also to make it easy for students to grasp and extract the main information content of digital courses. Digital teaching materials make the educational content no longer limited to the classroom, but can open learning anytime and anywhere, use students' fragmented time, stimulate students' ability to learn independently, and make digital teaching materials play a greater role and significance.

5.5 Building a Digital Learning Platform Supporting Professional Education Digital Textbooks

The education of professional courses must have its preparation system for professional education, so that teachers can easily prepare courses, complete courses, and effectively produce teaching materials. Configuring the online education operating system, teachers can organize and modify textbooks with only one click. Professional teachers can use the evaluation function of digital teaching materials to evaluate the collective curriculum of students of different grades, and master the comparison of students' effects before and after learning. By combining massive online learning resources with digital teaching materials, students can understand their learning status and learning gap through self-test and other

tests, and eliminate learning gap through online recording and broadcasting of repeated learning and self-study, consolidate learned knowledge and preview new knowledge.

5.6 Knowledge and Technology

In the context of "Internet plus", digital teaching materials are digital systems that effectively integrate curriculum content, teaching tools, network platforms and terminal equipment based on modern information technologies such as "Internet plus", and have dual attributes of knowledge and technology. Therefore, in addition to the planning, compilation and publication of basic textbooks, it also involves the design and development of rich media resources. The compilation and publication of traditional paper textbooks should mainly consider the content system, chapter structure and other factors of the textbooks. Since digital textbooks in the context of "Internet plus" are integrated with material resources with diverse modes, different types of digital resources such as text, animation, audio and video should be flexibly used according to specific subject types and course characteristics in the process of compilation and publication. Whether it is the planning, compilation and publication of basic textbooks and texts, or the design and development of rich media resources, it is necessary to adhere to the overall principle of science, comprehensively consider the organic integration of knowledge and technology, and "take the curriculum standards as the basis, take into account the needs of social development, the laws of students' physical and mental development and subject knowledge" in terms of content, fully reflect the integration of the book network, modal diversity and platform binding, and fully realize interaction, contextualization and convenience in function.

5.7 Content Compilation and Publication Team and Digitalization Technology Team

The compilation and publication of digital textbooks against the background of "Internet +" not only requires the preparation and publication of basic textbooks, but also the design and development of rich media resources, so it is necessary to form a professional writing and publishing team. In the stage of content writing and publishing and resource development, the preparation and publication of textbook content

needs to rely on a professional textbook writing and publishing team to ensure the scientific nature of textbook content. Since digital technology and media technology are involved, and the quality and richness of media resources directly determine the quality and richness of the content of teaching materials, the design and production of audio and video resources, 3D animation, and diversified interactive modules corresponding to the content of teaching materials require the participation of professional talents such as video shooting and production personnel and digital media developers. In the integrated editing stage of digital textbooks, the professional level of editors should also have corresponding requirements, and some composite editing talents who understand both digital editing technology and digital publishing technology are needed. Therefore, the compilation and publication of digital textbooks against the background of "Internet +" requires bringing together talents with different professional backgrounds such as textbook experts, teaching teachers, textbook writers, video shooting and production personnel, and digital media developers, and the content writing and publishing team of textbooks and the digital technology team must fully communicate and cooperate in order to truly implement the goal of writing and publishing digital textbooks with both knowledge and technology.

6. IMPLEMENTATION OF DIGITAL TEXTBOOKS

The implementation of digital teaching materials for music courses in preschool normal colleges should not only reflect the characteristics and goals of music art talent training in preschool normal colleges, but also conform to the general law of music art talent training, and more importantly, meet the learning needs of students and the teaching environment of digital media. On the one hand, the design of digital teaching materials is mainly based on the singing of children's songs at the elementary school level. Secondly, the design of digital teaching materials incorporates the general knowledge of primary school music pedagogy, such as Kodály teaching method, music game teaching method and other effective teaching methods in the implementation of primary school music curriculum. Finally, the design of digital teaching materials also carries out the design of music practice activities, such as completing music game activities or music action creation, so that the children's song singing digital teaching materials achieve a modern music singing

teaching material that combines music grading knowledge, pedagogy knowledge, and music action games.

The digital teaching materials of children's song singing courses break the traditional teaching progress of the syllabus, form a correspondence between the "performance" and "singing" of children's songs, divide the singing works into different levels, and temporarily edit the combination of course content through the individual differences of students, so that each student can form his own teaching material library. The teaching materials are centred on the score, equipped with text such as the introduction of the style of the work and the difficulties of singing techniques, and the game or action videos are designed for different songs, and the audio and video materials of different singing versions are linked. This design also upgrades the two-dimensional learning space of paper textbooks to a four-dimensional learning space.

In the implementation process of digital teaching materials, the following advantages are summarized: First, compared with paper teaching materials, digital teaching materials for children's songs are more in line with the teaching needs of digital media in colleges and universities, and the effective docking of digital teaching materials with existing online teaching platforms enables students to carry out professional learning anytime, anywhere, and consolidate and review at any time according to their own learning needs. Second, the construction of digital teaching materials for children's songs has promoted the reform of the teaching environment and teaching methods, so that more and better courses are synchronized with the online platform in a timely manner, and students automatically match the current level of learning programs according to different current levels. Third, in the selection of content of children's song digital teaching materials, it not only reflects the rules of children's song singing courses, but also meets the aesthetic needs of current students, which can promote students' active self-directed learning outside of the classroom and effective use of fragmented time.

As a preschool normal college, the construction of digital teaching materials for children's song singing courses not only conforms to the general law of music art talent training, but also reflects the characteristics and target value of music art talent training in preschool normal colleges. Finally, the online use of digital teaching materials will be

realized through WeChat mini programs or special apps.

7. CONCLUSION

To sum up, the Internet and many fields of society are becoming more integrated, and new forms of "Internet +" development have become more and more extensive, such as organizing and implementing integrated development projects in the publishing field, and widely carrying out online teaching or online and offline hybrid teaching in the field of education. This is both an opportunity and a challenge for the development and publication of teaching materials. It has spawned the continuous upgrading and transformation of teaching materials from form, content to function, and promoted new forms, new characteristics and new ideas for the compilation and publication of digital teaching materials against the background of "Internet +". Digitalization, modernization, openness and interactivity are integrated into the construction of digital teaching materials. Only by continuously promoting the compilation and publication of digital textbooks against the background of "Internet +" can people promote the upgrading of textbooks, promote the integration and symbiosis of digital textbooks and curriculum resources, and complement each other's advantages, solve the problem of uneven distribution of teaching resources, ensure the effective improvement of teaching service models, teaching implementation and teaching effects that combine in-class and extracurricular and online and offline integration, and promote the implementation process of the major strategic deployment of overall education modernization in 2035.

ACKNOWLEDGMENTS

This article is a phased achievement of the 2020 Jiangxi Provincial Higher Education Teaching Reform Research Project "Exploration and Practice of Digital Teaching Materials Construction of Children's Song Singing Courses in Preschool Normal Colleges". Project No.: JXJG-20-107-4.

Thanks for the help and support from the Teaching Reform Research Fund of the Jiangxi Provincial Education Department.

REFERENCES

- [1] Bian Jianjun, An Analysis into Omnimedia Digitalized Teaching Material "the General Theory of the Min Culture" [J]. Journal of

- Fujian Radio & TV University, 2018, 129(3): 93-96.
- [2] He Mianshan, *General Theory of Fujian Culture* [M]. Beijing: Peking University Press, 2016.
- [3] Wang Furong, *Construction of Textbooks and Reference Databases and Intellectual Property Protection in University Libraries* [J]. *Inner Mongolia Science Technology & Economy*, 2010, 219(17): 97-99.
- [4] He Mianshan, *Learning Resource Design Elements and Their Relationships: A Case Study of Fujian Radio and Television University's Excellent Courses* [J]. *Distance Education in China*, 2011, 441(10): 65-69.
- [5] He Mianshan, *A Brief Discussion on the Construction of Liberal Arts Textbooks for Distance Education in Fujian in the 21st Century* [A]. He Mianshan. *Education Theory in Fujian and Taiwan* [C]. Xiamen: Xiamen University Press, 2013: 243-248.
- [6] Zhu Zhiting, Hu Jiao, *Technology Enabled Post-Pandemic Educational Transformation: New Patterns of Online-Merge-Offline (OMO) Schooling* [J]. *Open Education Research*, 2021 (1).
- [7] Zhong Qiquan, *Research Issues and Prospect of Textbooks in the Internet Era from "Paper Textbooks" to "Digital Textbooks"* [J]. *Educational Development Research*, 2019 (6).
- [8] Wang Tianping, Yan Junzi, *The Characteristics and Development of Textbooks in the Digital Age* [J]. *Curriculum, Teaching Material and Method*, 2020 (9).
- [9] Brown, Randy, "Preliminary findings from a survey of student acceptance and use of e-textbooks in higher education." *Allied Academies International Conference* [C]. *Academy of Educational Leadership. Proceedings*. Vol. 17. No. 2. Jordan Whitney Enterprises, Inc, 2012.
- [10] Chen Guang, Gong Chaohua, Huang Ronghuai, *Electronic teaching materials: concepts, functions and key technical issues* [J]. *Open Education Research*, 2012, 02, 28-32.
- [11] *Circular on the Issuance of Curriculum Programmes and Curriculum Standards for Compulsory Education* [R]. 2022. Retrieved from http://www.gov.cn/xinwen/2022-04/21/content_5686531.htm
- [12] Dang Xingdan, (2020). *Analysis of the Application and Effectiveness of Digital Textbook "Easy Chinese" in Teaching Chinese in Thailand*. Xi'an University of Petroleum Xi'an University of Petroleum [D]. China National Knowledge Infrastructure.
- [13] Gong Chaohua, Chen Guang, Huang Ronghuai, (2012). *A study on the feasibility of applying electronic teaching materials in primary and secondary schools* [J]. *Research on Electrochemical Education*, 94-99. <https://doi.org/DOI:10.13811/j.cnki.eer.2012.01.011>
- [14] Li, Jiayi, (2022). *Research on the current situation and the use of e-textbook and teaching reference platforms in higher education* [D]. Shanghai International Studies University. China National Knowledge Infrastructure.
- [15] *Notice on the Postponement of the Start of the Spring Semester*. (2020). Retrieved from http://www.moe.gov.cn/jyb_xwfb/gzdt_gzdt/s5987/202001/t20200127_416672.html
- [16] Janaina de Oliveira, Mar Camacho, Mercy Gisbert Tarragona, (2014). *Exploring Student and Teacher Perception of E-textbooks in a Primary School* [J]. *Media Education Research Journal*, 42, 87-95.
- [17] Wang, Jun, (2021). *A Preliminary Study on the Design Ideas of Media Integration for Digital Teaching Materials in China Building a High-Quality Editorial Team to Promote High-Quality Development of Publishing*[C]. *Award-winning Papers of the 22nd Annual Conference of the Chinese Society of Editors*,
- [18] Wang Jianghong, (2023). *A study on the development strategies of digital teaching materials in colleges and universities* [J]. *Education and Teaching Forum*, 2.
- [19] Xiang, Guoxiong, (2005). *From traditional to electronic textbooks* [J]. *Information Technology Education*, 8-10.
- [20] Zhu Cailan, Li Yi, (2017). *Identifying the essence of electronic teaching materials: observations from three worlds* [J]. *Research on Electronic Education*, 11, 75-80.