



**STUDY ON TEACHERS' SATISFACTION WITH DIGITAL
EDUCATIONAL RESOURCE SHARING IN NANCHANG AREA
UNIVERSITIES**

**ZHOU ZIHAN
6417195405**

**AN INDEPENDENT STUDY SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE MASTER'S DEGREE OF BUSINESS
ADMINISTRATION GRADUATE SCHOOL OF BUSINESS
SIAM UNIVERSITY**

2023



**STUDY ON TEACHERS' SATISFACTION WITH DIGITAL EDUCATIONAL
RESOURCE SHARING IN NANCHANG AREA UNIVERSITIES**

ZHOU ZIHAN

This Independent Study has been Approved as a Partial Fulfillment of the Requirement
of an International Master of Business Administration

Advisor:

(Dr. Zhang Li)

Date: 5 / 4 / 2024

.....
(Associate Professor Dr. Jomphong Mongkhonvanit)
Dean, Graduate School of Business Administration

Date..... 9 / 4 / 2024

Siam University, Bangkok, Thailand

Declaration

I, ZHOU ZIHAN, hereby certify that the work embodied in this independent study entitled “STUDY ON TEACHERS’ SATISFACTION WITH DIGITAL EDUCATIONAL RESOURCE SHARING IN NANCHANG AREA UNIVERSITIES” is result of original research and has not been submitted for a higher degree to any other university or institution.



A handwritten signature in black ink, appearing to be "周子涵" (Zhou Zihan).

(ZHOU ZIHAN)

SEP 12, 2023

Title: Study On Teachers' Satisfaction with Digital Educational Resource Sharing in Nanchang Area Universities

By: Zhou Zihan

Degree: Master of Business Administration

Major: Education Management

Advisor:


.....
(Dr. Zhang Li)

..... 5 / 1 / 4 / 2024

ABSTRACT

Driven by the international trend of "resource sharing", the results of regional sharing practices in economically developed regions of China, and the successful demonstration of the Changbei Higher Education Library Alliance in Jiangxi Province, higher education institutions in the Nanchang area of Jiangxi Province are now embarking on a project of building and sharing digital educational resources. Inadequate educational resource sharing in the Nanchang area leads to uneven resource distribution among schools, resulting in disparities in educational opportunities. This imbalance compromises the quality of education, impacting students' academic achievements and prospects. The objectives of the study were 1) to examine the satisfaction of teachers in Nanchang Area with the digital educational resource sharing, 2) To develop countermeasures for the proposal on digital educational resource sharing in the Nanchang Area.

This paper adopted the quantitative research method to investigate the satisfaction of teachers at Nanchang universities with the digital educational resource sharing by extensively collecting domestic and foreign research data, drawing on domestic and foreign successful experiences, and combining expectation-disconfirmation theory and practice with a questionnaire survey method. A total of 200 questionnaires were distributed to teachers at five universities in Nanchang, 199 questionnaires were recovered, with a collection rate of 99.5%, and

after de-duplication and de-waste treatment, 190 questionnaires were valid, with an effective rate of 95.48%.

This study found:1) Many teachers considered that the digital educational resources provided by their schools were not rich and only average and could only meet their basic teaching needs. A significant proportion of teachers looked outside the school because the in-school resources could not meet their needs in terms of quality and quantity. Teachers are not satisfied with the digital educational resources provided by their schools, with only some students and some teachers indicating that they are relatively satisfied or very satisfied. 2) Based on the results of analyzing the attitudes and satisfaction of teachers in Nanchang towards the current digital educational resources and the expectation model, this paper put forward several countermeasure suggestions. It emphasizes the need for updating concepts and deepening understanding of educational resource sharing, defining characteristics and formulating a blueprint for regional resource sharing, harmonizing resource sharing standards and providing basic technical support, forming professional teams and specialized organizations, and strengthening resources and quality control of services to improve the efficiency and effectiveness of digital educational resource sharing among institutions in the region. This can effectively improve the region's ability to share educational resources and improve teaching quality.

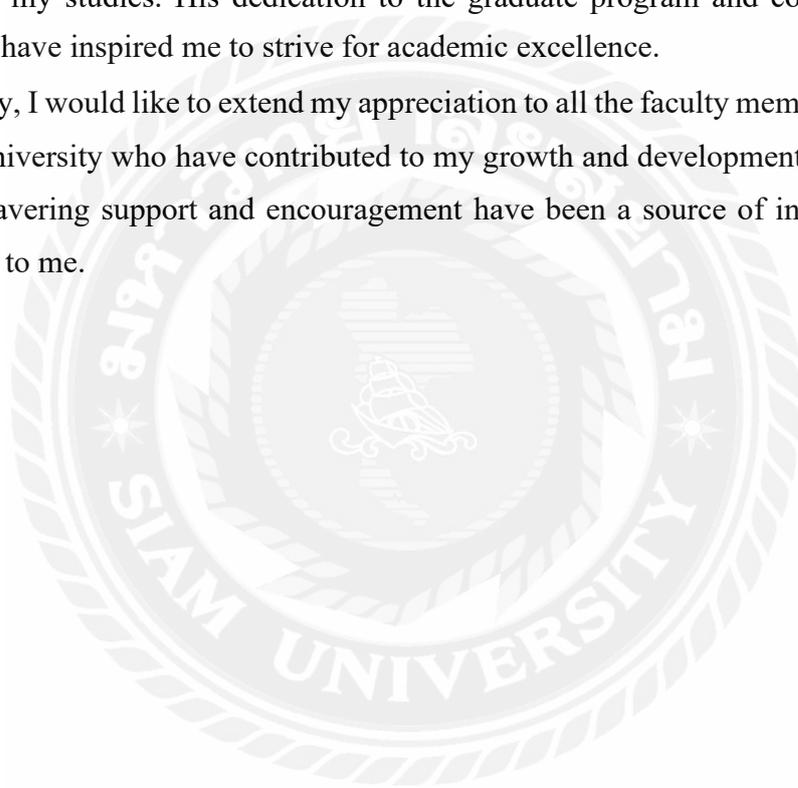
Keywords: digital educational resources, regionalization, co-construction, sharing

ACKNOWLEDGEMENT

I would like to express my deepest gratitude to my advisor, for his invaluable guidance, support, and encouragement throughout my independent study. His insightful comments and constructive criticism have significantly improved the quality of my work.

Additionally, I am grateful to Associate Professor Dr. Jomphong Mongkhonvanit, Dean of, the Graduate School of Business, for his support and encouragement throughout my studies. His dedication to the graduate program and commitment to excellence have inspired me to strive for academic excellence.

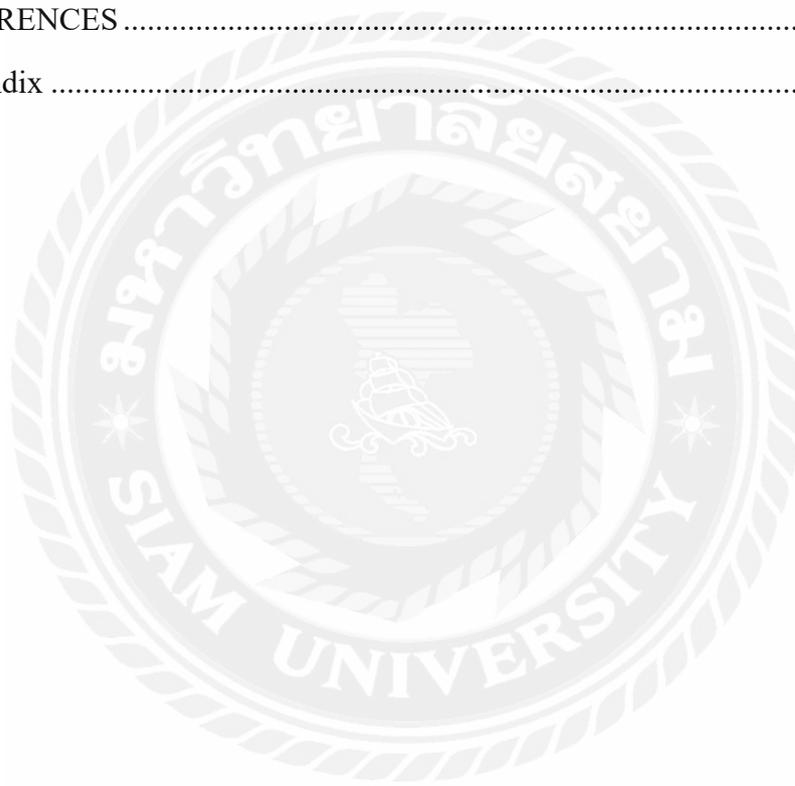
Finally, I would like to extend my appreciation to all the faculty members and staff of Siam University who have contributed to my growth and development as a student. Their unwavering support and encouragement have been a source of inspiration and motivation to me.



CONTENTS

Declaration.....	3
ABSTRACT	4
ACKNOWLEDGEMENT	6
Chapter 1. Introduction.....	1
1.1 Research Background	1
1.2 Research Problems.....	2
1.3 Objective of the study	3
1.4 Scope of the study	3
1.5 Research Significance.....	3
Chapter 2. Literatures Review	5
2.1 Digital Education Resources.....	5
2.2 Sharing of Digital Educational Resources in Higher Education.....	5
2.3 Expectation Model.....	8
2.4 Conceptual Framework.....	9
Chapter 3. Research Methodology	10
3.1 Research Design.....	10
3.3 Hypothesis.....	11
3.2 Population and Sampling.....	11
3.3 Data Analysis method.....	11
3.4 Validity and Reliability Analysis.....	11
Chapter 4. Findings.....	13
4.1 Satisfaction Analysis.....	13
4.2 Countermeasures.....	17
4.2.1 Updating concepts and deepening knowledge of educational resource sharing	17
4.2.2 Defining the characteristics and positioning, and formulating a blueprint for regional resource sharing.	17

4.2.3 Harmonizing of resource sharing standards and provision of basic technical support.....	18
4.2.4 Formatating of professional teams and specialized organizations	20
4.2.5 Strengthening resources and quality control of services.....	21
Chapter 5. Conclusion and Recommendation	23
5.1 Conclusion	23
5.2 Recommendation	24
REFERENCES	26
Appendix	28



Chapter 1. Introduction

1.1 Research Background

Since the 1990s, with the introduction of the concept of "information-based education" and the implementation of the "Information Highway" program in the United States, countries all over the world have begun to carry out the construction of information technology in education. Since then, the efficient opening up, utilization, and sharing of educational resources have become important issues in today's society (Shen, 2010). At the same time, the contradiction between the worsening "digital divide" and the drastic increase in information demand has become more and more obvious. Many countries have realized the urgency and importance of the existence of differences in educational information resources and the problems they bring about, and they have begun to actively seek exchanges and cooperation at the inter-regional and inter-country levels (Jing & Li, 2011).

The United States has not only built regional networks such as AMIGOS, OPAC, Ohio2net, INCOLSA, and so on, but also cross-regional collaborative networks such as CLCNET, OCLC, and so on, and its level of information resource sharing ranks among the top in the world. Germany has formed a multi-level, multi-system information resource sharing model, with regional library networks as the main form of sharing, and the sharing alliance is divided into three levels: regional, national, and international. Japan has built a national comprehensive information sharing system centered on NACSIS, including the National Union Catalog (NACSIS-CAT), the Interlibrary Loan System (NACSIS-ILL), and the retrieval system (NACSIS-IR), etc., targeting at academic information in the fields of humanities, social science, and natural disciplines, and uniting national, public, and private universities (Hu & Lai, 2010). The United Kingdom has also built the BLDSC, which is famous for its massive collection and its occupation of the inter-library loan stage in the United Kingdom, which not only meets the documentary needs of more than four-fifths of the users in the United Kingdom but also pushes the scope of the information service to internationalization.

The libraries of Jiangxi University of Finance and Economics, East China University of Transportation, and Jiangxi Agricultural University have also established the Changbei University Libraries Union. With the concept of sharing as its starting point, resource building as its foundation, and the development of information technology as its support, the alliance aims to realize the integration of sharing, service,

and management, and to reduce costs, share resources, and benefit from each other, greatly expanding the information-sharing space of the libraries of the three universities, and providing a successful example of win-win cooperation among the libraries of the universities in Jiangxi Province (Li & Liu, 2010). Driven by this international trend of "resource sharing", the results of regional sharing practices in economically developed regions of China, and the successful demonstration of the Changbei Higher Education Library Alliance in Jiangxi Province, higher education institutions in the Nanchang area of Jiangxi Province are now embarking on a project of building and sharing digital education resources (Zhuang & Sun, 2012).

1.2 Research Problems

Two significant problems stemming from the inadequate development of educational resource sharing in the Nanchang area are educational resource imbalance and educational quality disparities.

Firstly, the uneven distribution of educational resources among different schools and regions is a pressing concern. Some schools may possess more extensive educational materials, equipment, and teaching personnel, while others grapple with resource scarcity. This imbalance can lead to disparities in educational opportunities, where students in resource-rich institutions have access to a wider array of learning materials and experiences compared to their counterparts in less privileged settings (Hu & Lai, 2010). Consequently, this resource inequality contributes to a stark divide in the quality of education students receive in the Nanchang area.

Secondly, the quality of education is compromised due to the uneven resource allocation. As some schools lack access to essential resources like updated textbooks, technological equipment, or professional development opportunities for teachers, they struggle to provide a high-quality educational experience. This can result in varying academic achievements among students, with those in well-resourced schools outperforming their peers in schools with resource deficiencies (Wang, 2012). Ultimately, the lack of resource parity negatively impacts the overall educational landscape in the Nanchang area, hindering students' academic progress and prospects.

The problems of educational resource imbalance and quality disparities highlight the challenges arising from inadequate educational resource sharing in the Nanchang

area. Addressing these concerns is vital to promote equity and enhance the overall educational experience for students in the region.

1.3 Objective of the study

The purpose of this paper is to investigate the current satisfaction of teachers with the construction of digital educational resource sharing in the Nanchang area through the survey and analysis of the current situation of digital educational resource sharing in Nanchang area colleges and universities in a practical sense.

1.To examine the satisfaction of teachers in Nanchang with digital educational resource sharing in Nanchang

2. To develop countermeasures for the proposal on digital educational resource sharing in the Nanchang.

1.4 Scope of the study

The survey respondents are divided into two categories, one for the users of digital educational resources - teachers, and the other for the builders of digital educational resources, resource construction-related departments such as the Academic Affairs Office, Network Center, Educational Technology Center, the library and other staff. The survey randomly selected 400 undergraduates, specialists, and postgraduates from 20 colleges and universities in the Nanchang area, such as Universities in Nanchang, Universities in Nanchang of Aeronautics and Astronautics, Jiangxi Normal University of Science and Technology, Jiangxi Normal University, Nanchang Engineering College, Jiangxi Institute of Foreign Languages and Trades, Universities in Nanchang of Science and Technology, Jiangxi University of Finance and Economics, Jiangxi University of Science and Technology, Jiangxi Agricultural University, Jiangxi Police College and Jiangxi College of Traditional Chinese Medicine, and 200 teachers and some related staffs. 200 teachers and some related staff, related websites, the survey of the institutions covered a wide range, the object is more representative.

1.5 Research Significance

From a theoretical point of view, this study will not only help to explore the factors affecting the regional sharing of digital educational resources in higher education institutions in Nanchang, reveal the meaning of regional sharing of digital

educational resources in higher education institutions, and improve the theoretical framework and service system for the sharing of digital educational resources in higher education institutions in the region, but also reduce or eliminate the "information gap" among higher education institutions in Nanchang to a certain extent, and promote the formation of the concept of regional sharing of resources as well as regional sharing and utilization of digital educational resources to meet the various information demands of regional users. It can also reduce or eliminate the "information gap" between universities in Nanchang to a certain extent, satisfy the multifaceted information demands of regional users, and promote the formation of the concept of regional sharing of resources as well as the maximization of regional sharing and utilization of digital education resources.

In terms of practice, this study, on the one hand, starts from the needs of education management, removes the time and space constraints, promotes the development and sharing of special and high-quality resources in Nanchang, avoids duplicated construction and unprovoked wastage of digital resources, and thus promotes the healthy operation and optimization of the functions of the universities in Nanchang; on the other hand, it also promotes the balanced development of the educational resources in Nanchang and the realization of educational equity and further demonstrates the "serving society and serving people" principle of the universities. It also promotes the realization of regional balanced development of education resources and equity in education in Nanchang, further demonstrating the service objectives of higher education institutions to "serve the community and the people", and to promote the construction of a harmonious digital campus, a system of lifelong education, and a learning society.

Chapter 2. Literatures Review

2.1 Digital Education Resources

Digitalized educational resources refer to "all educational resources in the form of electronic data in which words, images, sounds, animations, drawings, and other forms of information are stored in the carrier of non-paper media such as optical, magnetic, and so on, and reproduced using network communications, computers, or terminals", and belong to a type of educational resources. It includes "all educational and teaching resources that are self-developed and runs on the Internet, such as teaching pictures, teaching materials, teaching curricula, teaching experiments, teaching courseware, shareware, and network course resources" (Wang, 2012).

In this paper, digitalized educational resources are defined as all kinds of information resources that exist in digital form to support teaching and learning, such as libraries' digital literature resources, multimedia materials resources, online course resources, science resources, software resources, and teaching management information resources (Lu, Zhou & Zhong, 2012).

Compared with traditional educational resources, digital educational resources have the following characteristics: Extensive knowledge, convenient retrieval, interactive transmission, value-added dissemination, and remote sharing.

2.2 Sharing of Digital Educational Resources in Higher Education

Regional digital education resources sharing is a systematic project involving many factors such as policy regulation, technical support, fund allocation, human resources coordination legal safeguards, etc. Its implementation should not only follow the basic attributes of systematic, scientific, hierarchical, and purposeful resource construction but also follow the unique principles of regional resource sharing, including the principles of resource optimization, sharing, mutual benefit, and reciprocity. These include the principles of resource optimization, sharing, mutual benefit and reciprocity, special advantage, regional community, standardization, and so on (Huang & Liu, 2011).

The principle of resource optimization requires that regional tertiary institutions stand at the forefront of the times, face modernization, and devote themselves to the development of high-quality, effective, and conveniently accessible digital educational resources, avoid the development of duplicated and useless resources, and form a regional model for the development of high-quality digital educational resources that has its own focus, complementary strengths, mutual dependence, and interconnectivity, to enhance the efficiency of the development and utilization of digital educational resources (Huang & Huang, 2011).

The purpose of co-construction is to promote sharing, and sharing is also to further guarantee the sustainability of co-construction. Therefore, all tertiary institutions should uphold the principle of co-construction and sharing, cooperate, divide up their work, complement each other's strengths, pool together regional resource construction funds, personnel, technology, etc., plan in a coordinated manner, and work together to construct educational resources and share the results of resource construction (Lei, Huang, Wang & Wang, 2012).

The principle of mutual benefit is the starting point and destination of regional digital education resource sharing. How to balance the interests of the participating parties in the region, fully mobilize the enthusiasm of the participating parties, and safeguard the common interests for a win-win situation are the keys to the success of regional education resource sharing. Given the different sizes, resource bases, equipment conditions, sources and levels of funding, and staff qualifications of the participating institutions, the costs and benefits to be gained by each institution vary greatly (Cen, 2009). In order to safeguard the balance of benefits and expenditures as well as the motivation to participate, the participating institutions need to negotiate and formulate a mechanism for balancing the benefits in accordance with the principle of mutual benefit and reciprocity, set up a specialized coordinating body, and consciously uphold the relevant policies and regulations, so as to ensure that all the participating institutions will receive reasonable returns and rewards for their investment, and to promote the positivity and permanence of the sharing of digital education resources (Gao, 2010).

Commonality and individuality are contradictory unities. Co-construction does not mean uniformity. On the contrary, co-construction does not only require the

universities in different regions to build up resources together but also requires them to build up their own resources with special characteristics and advantages. Only with their own unique advantages can the digitalized educational resources of each region reflect their value in resource sharing (Xiong, Zhu & Huang, 2010). Therefore, all higher education institutions should follow the principle of distinctive advantages and develop their own distinctive resources according to their own characteristics of education, style of governance, subject needs, professional expertise, etc. They should complement each other's strengths, remove the false and preserve the true, extract the rough and make the best of them, and develop their own distinctive resources according to their own needs, to build up their resource advantages and enhance the competitiveness and vitality of their education (He & Huang, 2011).

The process of sharing digital education resources among regional universities involves not only the construction of "things" such as resource libraries, but also the construction of "people" such as administrators, technicians, researchers, teachers, and students, and is a dynamic development process. Therefore, all participating parties should form a regional community, cultivate common interests, visions, and sentiments, and through the drive of common objectives and specific tasks, the macro-control of the government, and the support of relevant training, activities and services, each of them should perform their own functions, display their own strengths, cooperate with each other, exchange experiences and communicate with each other emotionally, so as to accomplish the goal of regional sharing of digital education resources while continuously improving their own abilities (Hu, 2010).

Regularization and standardization have been the two major bottlenecks to the realization of resource sharing. The sharing of digital education resources among regional higher education institutions requires the adoption of uniform data standards, copyright protection agreements, sharing mechanisms, platform service mechanisms, evaluation, and feedback mechanisms, etc., to avoid the phenomenon of digital divide and conflict of interest, and to implement relevant policies and regulations, to ensure the sound development and standardization of regional resource sharing (Yang, 2011).

These principles are both independent of and mutually restrictive with each other. Only by following these principles can the regional sharing of digital education

resources be put on a soundtrack of development, and the effectiveness of regional sharing of digital education resources be ensured.

2.3 Expectation Model

The expectation model is short for the Expectation-Disconfirmation model, whose theoretical basis comes from social psychology and organizational behavior in the 70's. Olshavsky and Miller's article "Customer Expectation, Product Performance and Perceived Product Quality" in 1972 and Anderson's article "Customer Dissatisfaction: The Effect of Inconsistency between Expectation and Perceived Quality" in 1973 both explored the expectation-disconfirmation theory. Olshavsky and Miller's "Customer Expectations, Product Performance, and Perceived Product Quality" in 1972 and Anderson's "Customer Dissatisfaction: The Effect of Expectations and Perceived Quality Inconsistency" in 1973 both explored the basic framework of expectation-inconsistency theory and these two studies, together with Cardozo's experimental study a little earlier, were the basis of the expectation-inconsistency theory. These two studies, along with Cardozo's experimental study a little earlier, form the basis of this model.

The expectation expectancy model posits that satisfaction is achieved through a two-stage process. Prior to purchase, customers form "expectations" about the product's performance, i.e., the benefits and utility that the product will provide, and after making the purchase, they compare the true level of performance obtained from consuming the product with their pre-purchase expectations, resulting in a gap, or "inconsistency," which is the first stage (Cao, 2011). This is the first stage. In the second stage, the customer by the "inconsistency" of different situations to make different "satisfaction" responses: when the actual performance and expectations are the same, that is, "inconsistency" is zero, the customer produces "Moderate Satisfaction" (Moderate Satisfaction); when the actual performance exceeds the expectation, i.e., when the "inconsistency" is positive, it leads to Satisfaction; and when the actual performance does not meet the expectation, i.e., when the "inconsistency" is negative, it leads to Dissatisfaction. Therefore, the expectation model includes three basic variables: expectation, inconsistency, and satisfaction (Zheng & Hu, 2011). Expectation is the customer's expectation of product performance, inconsistency is the difference between performance and expectation, where

performance is the benefit obtained by the customer, and satisfaction is the final attitude and evaluation of the customer. The expectation model is the basis of customer satisfaction theory (Wu, 2011).

This study designs a questionnaire based on the five different levels of customer expectations of products in the expectation model: Very satisfied, Comparatively Satisfied, Average, less satisfied, very dissatisfied, and conducts a satisfaction survey on the construction of educational resource sharing to teachers of Universities in Nanchang.

2.4 Conceptual Framework

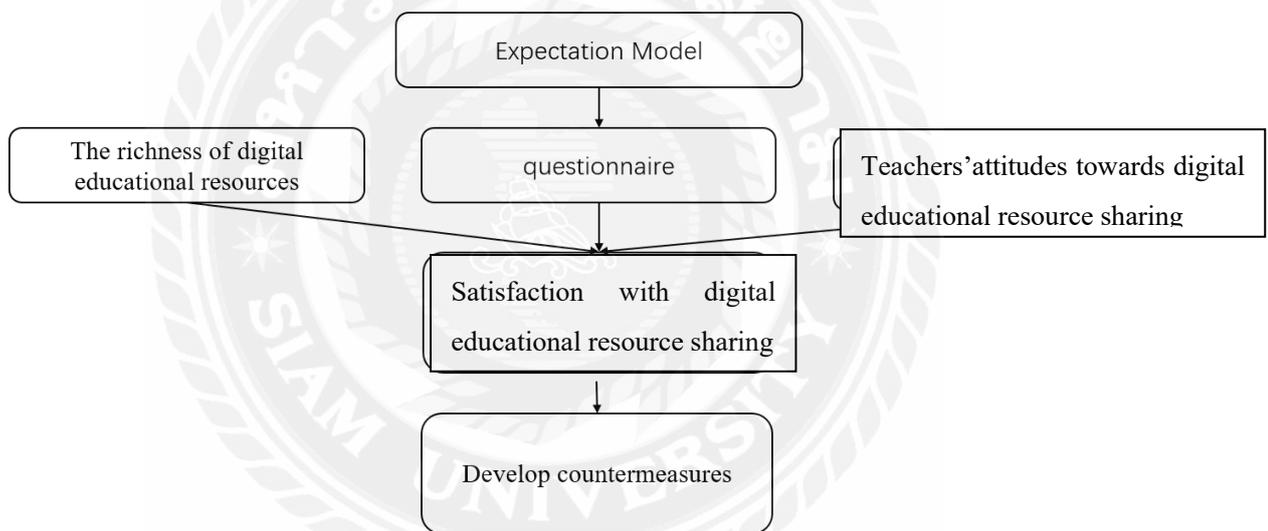


Figure 2.1 Research Framework

Chapter 3 Research Methodology

3.1 Research Design

This paper uses a quantitative research method to investigate the satisfaction of teachers of Nanchang universities with the construction of digital educational resources sharing by extensively collecting domestic and foreign research data, drawing on domestic and foreign successful experiences, and combining theory and practice with a questionnaire survey method.

The questionnaires were self-administered and divided into two parts: the first part was for basic information and the second part was the formal content of the questionnaire, which was mainly related to access to digital educational resources, attitude towards and satisfaction with digital educational resources constructed in the schools, sharing of digital educational resources within and among schools, demand for digital educational resources and the need to share digital educational resources in a regional context. The questionnaire is based on a closed-ended questionnaire with the following five aspects: attitude, participation, and willingness to pay for the sharing of digital education resources in the region. The questionnaires were mainly closed-ended, distributed collectively in an anonymous manner, and collected on the spot so that the information obtained was real and valid. In addition, in order to further ensure the effectiveness and scientific of the questionnaire, a small-scale trial test was conducted before its official distribution, and relevant experts and teachers were invited to evaluate the questionnaire, and according to the teachers' and students' responses to the questions and the filling in situation as well as the guidance of the experts, the questionnaire was constantly revised, so as to make the design of the questionnaire more closely related to the actual situation of the teachers. For the frequency analysis of multiple choice, there are two types of percentages, one is the percentage of responses, i.e. the number of responses selected divided by the total number of responses selected; the other is the percentage of cases, i.e. the number of responses selected divided by the total number of valid responses. In this study, the percentage of cases was used in all multi-choice frequency analyses, which was the percentage of those who chose that answer out of the total number of respondents who filled in the form.

3.3 Hypothesis

H1: The number of teachers with positive attitudes towards sharing digital educational resources is higher.

H2: The satisfaction of teachers with digital educational resources in Nanchang is low.

3.2 Population and Sampling

A total of 200 questionnaires were distributed to teachers at five universities in Nanchang, 199 questionnaires were recovered, with a collection rate of 99.5%, and after de-duplication and de-waste treatment, 190 questionnaires were valid, with an effective rate of 95.48%.

Table 2.1 Distribution of questionnaires

Category	Number of questionnaires distributed	No. of questionnaires returned	Recovery rate	Number of valid questionnaires	Effective rate
Teacher	200	199	99.5%	190	95.48%

3.3 Data Analysis method

With the help of SPSS and Excel statistical software, we analyze the frequency by quantitative means, such as frequency, median, and plural to describe the degree of concentration or dispersion and use a graphical method to show the variations. There are two types of percentages for the frequency analysis of multiple choice, one is the percentage of answers, i.e., the number of choices divided by the total number of choices, and the other is the percentage of cases, i.e. the number of choices divided by the total number of valid scripts. In this study, the percentage of cases was used in all multi-choice frequency analyses, which was the percentage of those who chose that answer out of the total number of respondents who filled in the form.

3.4 Validity and Reliability Analysis

Using the data detailed in Table 3.1, this study conducted a reliability analysis via SPSS27.0. The Cronbach's Alpha coefficient for all the evaluated dimensions exceeded the 0.8 threshold, positioning it within the optimal range.

Table 3.1 Reliability test

Variable	Cronbach 'Alpha
Richness of types of digital educational resources	0.821
Teachers' attitudes toward digital educational resources	0.833
Teachers' satisfaction with digital educational resources	0.813

With the assistance of the KMO values, the SPSS27.0 software was employed to evaluate the integrity of our questionnaire. The results confirm its solid structural validity, paving the way for subsequent analysis. As gleaned from the factor rotation matrix, all variable factor loadings meet the prescribed criteria. To sum it up, with reliability coefficients consistently surpassing 0.6 for our data, we are confident in both its reliability and validity.

Table 3.2 KMO and Bartlett test data

	Richness of types of digital educational resources	Teachers' attitudes toward digital educational resources	Teachers' satisfaction with digital educational resources
KMO	0.725	0.812	0.691

Chapter 4 Findings

4.1 Satisfaction Analysis

According to different resource classification methods, digital educational resources can be divided into different categories. This paper, based on the summary of relevant information and the construction of educational resources sharing in the Nanchang area, decides to start the investigation with the following different kinds of educational resources: library digital literature resources, multimedia material resources, subject resources, network course resources, software resources, and teaching management information resources.

To analyze the satisfaction level, we should first analyze the attitudes of students and teachers toward the construction of digital educational resources in their colleges and universities. At present, the digital educational resources in colleges and universities are mainly library digital literature resources, multimedia material resources, subject resources, network course resources, software resources, and teaching management information resources. Survey data show that teachers basically hold a general attitude towards the digital educational resources built by their institutions, the number of people with a rich attitude is relatively small, only more than 40% of teachers think that the library digital literature resources built are relatively rich, and the number of people with rich attitude towards other digital educational resources built basically stays at 10%-20%.

So, H1: “The number of teachers with positive attitudes towards sharing digital educational resources is higher” is rejected.

Table 4.1 Attitudes of Teachers towards Digital educational resources in their Institutions

	Teacher			
	Abundant	General	No	Not clear
Library digital literature resources	42.11	55.79	2.11	0.00
multimedia material resources	21.05	69.47	8.42	1.05
subject resources	11.58	77.89	10.53	0.00

online course resources	11.58	76.87	8.42	3.16
software resources	10.53	60.00	22.11	7.37
teaching management information resources	20.00	72.63	2.11	5.26
	19.48	68.78	8.95	2.81

Analysis of the satisfaction situation of faculty and students with the digital educational resources built into their institutions

Table 4.2 Teachers' satisfaction with the construction of digital education resources in their institutions

	Very satisfied		Comparatively Satisfied		Average		Less satisfied		Very dissatisfied		total	
	N	%	N	%	N	%	N	%	N	%	N	%
Teacher	6	3.16	52	27.37	88	46.32	36	18.95	8	4.21	190	100

Although most teachers are relatively satisfied with the digitalized educational resources constructed in their schools, a considerable proportion of teachers are still dissatisfied with the digitalized educational resources constructed in their schools, and the digitalized educational resources constructed do not fully meet the needs of teachers.

So, H2: “The satisfaction of teachers with digital education resources in Nanchang is low” is accepted.

H1: The number of teachers with positive attitudes towards sharing digital educational resources is higher	rejected
H2: The satisfaction of teachers with digital educational resources in Nanchang is low	accepted

Up to 60% of the teachers thought that the digital education resources built by the school were not rich and only general, and could only meet the basic teaching or learning needs. A significant proportion of teachers looked outside the school because the resources in the school could not meet their needs in terms of both quality and

quantity. It was evident that teachers were not satisfied with the digital education resources provided by their schools, with only 27.06% of the students and 30.53% of the teachers indicating that they were relatively satisfied or very satisfied.

Most tertiary institutions have initiatives to build digital education resources, but the level of construction and the degree of emphasis are not the same, on the whole, the undergraduate institutions are higher than the specialized institutions; the mode of construction is mainly purchased, supplemented by self-built, and the school and university have built their own libraries independently; the departments involved in construction include the Academic Affairs Office, the Education Technology Center, the Network Center and the Library, and so on, and the departments and the staffs are not sufficiently coordinated and each of them has its own way of doing things; the type of resources built is mainly the digital literature resources in the Library, and a small number of universities have also built rich test questions library, case study library, multi-media courseware resources, multi-media materials resources and online course resources; the level of resources construction has also increased, and there are more than 100 universities in the world. A few tertiary institutions have also built rich question banks, case banks, and other disciplinary resources, multi-media courseware resources, multi-media materials resources online course resources, etc. The overall level of resource construction is average, with the phenomenon that the quality and quantity of the resources built can hardly satisfy the teaching and learning needs of all teachers; some tertiary institutions have built online course resources for their specialized courses but the pace of construction lags behind the needs of teachers; most tertiary institutions have built Chinese Academic Journals Data Center and Libraries, which have been used by the Chinese academic community. Most colleges and universities have library resources such as the China Academic Journals Database, Wanfang Database, Wipu Database, Digital Library Database of Jiangxi Higher Education Institutions, Excellent Master Thesis Database, etc. The phenomenon of duplicated construction of resources is obvious.

The dataset provided above offers insights into the perceptions and satisfaction levels of teachers concerning digital educational resources. It reveals a landscape where digital mediums, particularly web pages and e-books/periodicals, are heavily favored over traditional resources like paper books and CD-ROMs. This preference underscores the importance of digital accessibility and the evolving nature of educational resource consumption.

When exploring the sources from which these digital resources are obtained, it becomes apparent that individuals are not solely reliant on campus networks. Instead, there's a significant inclination towards utilizing internet networks and library e-reading rooms, indicating a broader search for resources beyond the immediate educational environment. This diversity in sources highlights the proactive measures individuals take to supplement their educational materials.

The methods employed to acquire these digital resources further reflect an active engagement with technology, with search engines and personal purchases being predominant. This suggests that users are not just passively receiving information but are actively seeking out and investing in the resources they need, which may reflect a desire for more specialized or comprehensive content that current institutional provisions might not fully satisfy.

However, the satisfaction with the construction of digital resources within educational institutions leaves much to be desired. A significant portion of respondents describe these resources as either "fair" or "nonexistent," indicating a gap between the needs of the educational community and the resources provided. This gap extends to both the quantity and quality of resources, with many expressing only moderate satisfaction. These findings highlight a critical area for improvement in how educational institutions curate and develop their digital resource libraries to better meet learner needs.

Remarkably, there is overwhelming support for the sharing of digital educational resources among regional universities, with a vast majority recognizing it as necessary or very necessary. This consensus points towards a collective understanding of the potential benefits of resource sharing, such as enhanced access to diverse materials, improved resource quality, and the fostering of a collaborative educational environment.

4.2 Countermeasures

Based on the results of the analysis of teachers' attitudes and satisfaction with the current digital educational resources in Nanchang and the Expectation model, this paper proposes the following countermeasures and suggestions:

4.2.1 Updating concepts and deepening knowledge of educational resource sharing

Although the use value of digital educational resources has been recognized by the majority of users, and the survey results also show that more than 60% of teachers' main source of resources is digital educational resources, some organizations and individuals are reluctant to upload their own resources to the Internet and share them with others due to the influence of the traditional concept of education and the awareness of the protection of property rights, believing that this will reduce their own competitive advantages and damage their legitimate rights and interests, thus This hinders their understanding of and participation in resource sharing activities. In this regard, we should abandon the old concepts, establish a new concept of resource sharing for mutual benefit and cooperation, and break down school and regional barriers. We can cultivate stakeholders' awareness of regional resource sharing by increasing inter-school exchanges and cooperation and conducting training on digital educational resource sharing, to promote their overall knowledge and consensus on the common vision of "building, knowing, sharing, and winning together", and then guide their determination and behavior to participate in regional resource sharing. Behavior.

4.2.2 Defining the characteristics and positioning, and formulating a blueprint for regional resource sharing.

The regional resource sharing blueprint is an overall plan for all aspects of regional digital educational resource sharing, a guideline for the actions of the members of each organization, and an important guarantee for the achievement of goals. Its formulation requires the education administrative department to make clear the positioning of regional characteristics in accordance with the actual conditions and development needs of the region, to make use of policies, regulations, administration and other means to predict and regulate the main factors affecting the sharing of regional digital educational resources, to establish the input and output structure of the resources, to make clear the division of responsibilities and allocation of tasks of the

various participants, to take the application of the benefits as the core, and to realize regional digital educational resources through the full cooperation and mutual cooperation of all regional participating bodies. With the efficiency of application as the core, and in combination with the full cooperation and mutual assistance of all regional participating bodies, we can realize the common goal of "common construction, common knowledge, common sharing and win-win" of regional digital educational resources.

The reason why we emphasize the positioning of regional characteristics is that characteristics determine advantages, which in turn determine market competitiveness. The purpose of building and sharing regional digital educational resources is to avoid duplicated development and unnecessary waste of resources, to reap maximum benefits with minimum investment, and to improve the efficiency of resource investigation and utilization. Survey results show that more than 90% of teachers think that regional digital educational resources are duplicated, and about 66% of teachers think that the duplication of resources without timely updating is a major obstacle that restricts them from sharing regional digital educational resources. The duplication of resources has become a major drawback in the construction of regional digital educational resources. Therefore, we should increase the macro-control of educational resource construction, take the principle of characteristic advantage as the guide, clarify the characteristic positioning of regional digital educational resources, rationally adjust the input and output structure of resource allocation, and formulate a practical blueprint for the common construction and sharing of regional resources.

4.2.3 Harmonizing resource sharing standards and provision of basic technical support.

As can be seen from the survey results, one of the major obstacles to the regional sharing of digital educational resources is the slow process of standardization of resource construction. In view of the fact that regional digital educational resources sharing involves cross-school, cross-region and cross-branch, in order to realize the division of labor and cooperation among participating departments and personnel and the interconnection of resource libraries, it is necessary to carry out reasonable planning, formulate unified data standards, construction standards and service standards, provide standardized data interfaces, interoperable resource construction and sharing platforms, and improve the efficiency of resource development,

organization, storage, retrieval and utilization. utilization efficiency, and provide basic technical guarantee for regional resource co-construction and sharing.

First, unify the digital educational resources co-construction and sharing standards of regional universities. Metadata standards can be uniformly adopted for data collection, organization and processing to ensure the standardization of data interfaces; the standards of the Ministry of Education can be uniformly adopted to guide the construction of resources; and digital campus grid technologies such as grid intermediate technology, data grid storage technology, metadata access and resource replication and management technology, and grid security technology can be uniformly adopted to increase the interoperability and coordination of resources, and to address the issue of "Distributability, autonomy, heterogeneity, dynamics and security of resources" Consultation on the formulation of unified resource service standards, including platform authentication standards, resource delivery and use standards, charging standards, quality assessment standards, etc., to increase the accessibility and utilization of resources.

Secondly, the construction of regional central resource base, build a regional platform for the common construction and sharing of digital educational resources. In view of the fact that regional colleges and universities have not established a unified regional central database, regional users have limited authority to build and share digital educational resources, which is mainly realized by accessing the databases of each school with the help of accounts or remote access systems, with troublesome formalities, limited service contents, and users' willingness to build and share and their lack of participation in the status quo, it is important to build a regional central resource base and a regional platform for building and sharing digital educational resources. It is an effective way to realize the effective construction and sharing of regional digital educational resources.

The regional center resource base is the foundation for connecting the databases of regional universities, and it is the link for realizing the interconnection between the regional center resource base and the databases of regional universities. The resources of the regional central resource base are mainly composed of three parts: first, the digital educational resources that can be shared by regional universities are integrated according to certain classification standards, such as subject classification; second, the

general educational resources are purchased from some commodity resource banks according to the regional demand; and third, the self-constructed local educational resources. The regional shared platform has a powerful management function, which is a bridge to realize the interoperability between the regional central resource base and the school-level resource base, and a button for users to build and share resources. By setting different usage rights for different users, it enables users to upload, audit, retrieve, browse, and apply the resources conveniently and quickly. The regional center resource library and regional resource sharing platform can be in the resource library of the regional network, facing all the personnel in the region, and truly realizing the regional construction and sharing of resources.

4.2.4 Formulating professional teams and specialized organizations

The lack of professionals and specialized organizations has become two major obstacles to the sharing of regional digital educational resources. If we want to substantially promote the regional digital educational resources sharing project, we need to start from the following two aspects:

First, a professional team should be formed to update, manage, and maintain the resource library and resource platform. On the one hand, more professionals can be attracted to join the regional resource co-construction and sharing by formulating relevant incentive policies to expand the original talent team; on the other hand, professional training can also be provided to existing personnel to improve their professional knowledge and professional skills, to improve the overall level of the team.

Secondly, a special organization should be set up for the coordination and division of work among personnel and resources, to improve the management performance of the organization and the execution of tasks. For example, a regional organization and management committee for digital education resources sharing is set up to be responsible for planning, organizing, coordinating and implementing matters of resource construction; a regional supervision committee for digital education resources sharing is set up to be responsible for supervision and evaluation of resource construction; and a regional management committee for special funds for digital education resources sharing is set up to be responsible for preparation and allocation of funds, and so on.

The professional team is the core of regional resource sharing and is the fundamental guarantee to improve the efficiency of resource construction. And the establishment of a specialized organization is an effective solution to the problem of multi-sectoral operation and fragmentation, and a favorable guarantee for improving sectoral efficiency and implementing the predetermined plan. Therefore, in the process of building and sharing regional digital educational resources, attention should be paid to the selection and training of professionals, accelerating the pace of construction of specialized organizations, and improving the specialization and standardization of their operations.

4.2.5 Strengthening resources and quality control of services

The quality of resources has a direct impact on the effectiveness of their use and the sustainability of their sharing. In the survey and statistics on the barriers to the sharing of regional digital educational resources, it was found that the outdated and untimely updating of the content of the resources was one of the major barriers. Therefore, in order to realize the effective co-construction and sharing of regional digital educational resources, it is necessary to strictly control the quality.

First of all, the construction quality monitoring of regional resources should be strengthened. Establish an assessment system for the quality of regional resources, test, evaluate and select the quality and application efficiency of the developed digital educational resources, remove the roughness and extract the essence, remove the false and keep the true, increase the exploration and development of high-quality educational resources and regional characteristics of educational resources, and guide the construction of resources with quality and efficiency orientation to ensure that the overall quality of the digital educational resources and the sustainability of the regional co-build and share.

Secondly, the service quality monitoring of regional resources should be strengthened. This can be achieved in two ways: first, monitoring the service breadth of regional resources, i.e., whether the jointly built regional digital educational resources meet all the needs of regional users in terms of quantity; second, monitoring the service depth of regional resources, i.e., whether the jointly built regional digital educational resources meet all the needs of regional users in terms of quality.

Service quality monitoring is an important part of quality monitoring, involving a number of indicators such as the quantity, type, presentation, access, duplication status, update status and post maintenance of resources, which is an extension of resource construction quality monitoring. Therefore, the construction of resources and the quality of service should be listed as the two major indicators of quality monitoring, without bias and with emphasis on each, so as to promote the comprehensive monitoring of the quality of regional digital educational resources.



Chapter 5. Conclusion and Recommendation

5.1 Conclusion

The construction of information resources tends to be regionalized and internationalized, and sharing has become the main theme of domestic and foreign digital resource construction. Therefore, it is urgent to build and share digital education resources in regional universities.

Based on the expectation model, this paper investigates and analyzes the current situation of digital education resource sharing in Nanchang universities by means of a questionnaire, and proposes countermeasures and suggestions to promote the sharing of regional digital education resources.

The implementation of regional sharing of digital educational resources in colleges and universities is conducive to the equal distribution of educational resources and the promotion of educational equity; it eases the contradiction between resource expansion and resource shortage, reduces the duplication of resource development, and lowers costs; it makes up for the shortcomings of the "school-school database" and avoids the "data divide"; and it also helps to reduce the cost of education and to improve the quality of education. "The survey found that in Nanchang, there is no data gap. The survey found that most colleges and universities in the Nanchang area have already taken initiatives to build digitalized educational resources. The types of resources built in the region are mainly library digital literature resources, while a few colleges and universities have also built rich subject resources such as test databases and case databases, multi-media courseware resources, multi-media material resources, and online course resources, etc. The level of resource building in the region is generally satisfactory. The overall level of resource construction is general, and there is a phenomenon that the quality and quantity of the resources constructed can hardly meet the teaching and learning needs of all teachers. Some schools have already constructed online course resources for their professional courses, but the pace of construction lags far behind the needs of teachers, and most of the teachers are not satisfied with the digital education resources constructed by their schools.

Finally, based on the results of analyzing the attitudes and satisfaction of teachers in Nanchang City towards the current digital education resources and the expectation model, this paper puts forward several countermeasure suggestions. 1. update the concept, deepen the knowledge of "common knowledge, common construction, sharing, win-win" vision; 2. clear characteristics of the positioning, the development of regional resource construction and sharing blueprint; 3. unified resource construction and sharing standards, to provide the basic technical support; 4. set up a special organization, the development of professional teams; 5. strengthen the regional resource construction and quality control of services; in short, the regional digital educational resources should be a regional spatial carrier, to promote regional development goals of cooperation with regional multi-party forces, using effective mechanisms and strategies to strive to achieve regional digital educational resources "common construction, common knowledge, sharing and win-win". In short, regional universities should take the region as the spatial carrier for digital education resources sharing, aim at promoting regional development, unite the cooperation of many regional forces, adopt effective mechanisms and strategies, and strive to realize the common vision of "common construction, common knowledge, common sharing, and win-win" of regional digital education resources.

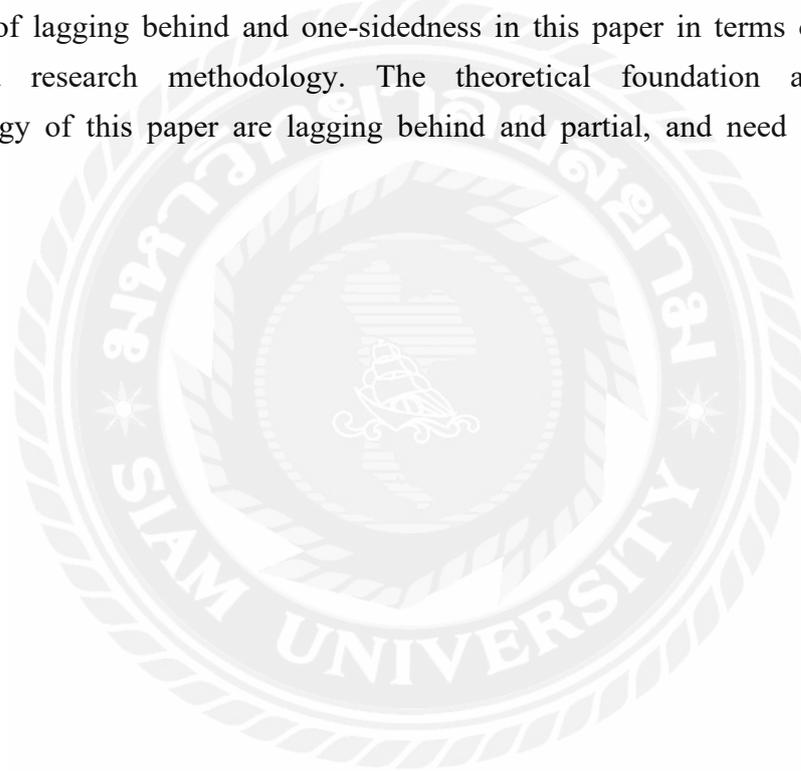
5.2 Recommendation

Based on the survey and analysis of the current situation, this study explores the problems and causes of the sharing of digital education resources in regional higher education institutions, and puts forward a few countermeasures and suggestions to achieve the research objectives at the initial stage. However, the sharing of digital education resources in regional higher education institutions involves a wide range of contents and influences many factors, and with the progress of society and regional economic development, there are still many problems that need to be solved in the future, and the development situation is still serious.

Therefore, future research needs to make breakthroughs in the following areas:

Due to the limitations of human, material and financial resources, the survey targets and areas were restricted, the sampling was insufficient, and the data obtained had large errors, which made it difficult to reflect the current situation of the sharing of digital education resources in Nanchang, thus affecting the analysis of the current situation and the exploration of its causes; due to the influence of their own

knowledge and abilities, the indicators of the questionnaire were incomplete, and the understanding of the relevant things was still shallow, so the views they put forward were somewhat naïve and difficult to fully grasp the situation of regional high school education. It is difficult to fully grasp the interactions and interconnections among the factors of digital education resources sharing in regional universities, which may easily lead to disorderly masonry and shallow description of strategies, thus reducing their practical value and operability; domestic and overseas research on regional resources sharing is under constant development and change, and the relevant theoretical systems and technical means are also under constant updating, so there are problems of lagging behind and one-sidedness in this paper in terms of theoretical basis and research methodology. The theoretical foundation and research methodology of this paper are lagging behind and partial, and need to be further improved.



REFERENCES

- Cao, Q. (2011). Talking about digital education resources in the capital city from the outline of the medium- and long-term education reform and development plan of Beijing Municipality (2010-2020). *China Education Informatization*, (8), 6-10.
- Cen, J. L. (2009). Regional education informatization strategy research and practice. *Research on Electrochemical Education*, (6), 50-53.
- Gao, B. (2010). A comparative study of regional library alliances in China and abroad: Implications for the library alliance of Wuhan City circle. *Learning and Practice*, (10), 136-140.
- Gao, F., & Xu, Y. (2006). Progress of library alliance research in foreign countries. *Library Intelligence Work*, 50(4), 83-87.
- He, L. L. & Huang, Y. S. (2011). Discussion on the development mode of China's digital educational resources under triple-network integration. *Science and Technology Perspectives*, (8), 9-10.
- Hu, X. Y. & Lai, L. M. (2010). Study on the balanced development of regional educational information resources: Case comparison and optimization strategy. *Modern Distance Education Research*, (6), 58-61.
- Hu, X. Z. (2010). Regional quality resource sharing in the process of education informatization: a theoretical framework and personality study. *Electronic Education Research*, (3), 48-53.
- Huang, Q. Z. & Huang, Y. (2010). Exploration of network education resources sharing mechanism in colleges and universities. *Higher Education Exploration*, (3), 60-63.
- Huang, Y. S. & Liu, Q. (2011). Survey and analysis on the status quo of digital education resources integration in Jiangxi universities. *Old District Construction*, (6), 57-60.
- Huang, Y. S., Liu, Q. (2011). Research on the integration status and countermeasures of digital educational resources in colleges and universities. *Modern Intelligence*, (9), 67-70.
- Jing, Y. J. & Li, X. (2011). Regional basic education information resource construction community model practice research. *China Electrochemical Education*, (1), 83-86.

- Lei, J., Xu, L., Huang, A. T., Wang, Q. & Wang, C. (2012). Sharing of digital resources in Wuhan Military School Library. *Science and Technology Perspectives*, (2), 44-45.
- Li, J. Q. & Liu, J. (2010). Research on barriers to regional information resource sharing. *Research in Librarianship (Theoretical Edition)*, (12), 37-40.
- Lu, P., Zhou, D. D. & Zhong, S. C. (2012). Research on resource sharing support platform for regional basic education. *Modern Education Technology*, 21(12), 104-108.
- Shen, R. (2010). Technology alliance: The new direction of university library digitization construction a digital library alliance construction of Zhejiang Province universities as an example. *Library Information Work*, 54(5), 71-74.
- Wang, Z. L. (2012). Network information resources co-construction and sharing mechanism and realization strategy. *Journal of Library*, (2), 29-31.
- Wu, X. Y. (2011). Philosophical reflections on intellectual property protection issues in university libraries. *Modern Business Industry*, (20), 210-211.
- Xiao, X. M. & Gu, C. C. (2012). Library policy research in European countries, *National Library Journal*, (1), 3-8.
- Xiong, C. P., Zhu, A. Z. & Huang, P. P. (2010). Research on the development and application mode of "Regional Co-construction and Sharing" of educational information resources. *Development Education Research*, 16(1), 40-44.
- Yang, X. Y. (2011). Analysis of the status quo and countermeasures of China's education information resource construction. *Software Guide*, 9(3), 190-192.
- Zheng, P. F. & Hu, S. Y. (2011). Research on the integration and sharing mechanism of regional digital educational resources. *China Education Informatization*, (2), 71-74.
- Zhuang, S. J. & Sun, Y. M. (2012). Bottlenecks and countermeasures of regional information resource co-construction and sharing in Jinchunmei. *Heilongjiang Historical Journal*, 5(12), 72-73.

Appendix

Survey on the Sharing of Digital Educational Resources in Regional Universities

Hello, Thank you very much for your participation in this questionnaire survey!

This questionnaire is anonymous and aims to investigate the situation of digital education resource sharing in regional universities. The data collected is for research purposes only and does not involve any personal or school interests, please read it carefully and answer the following questions truthfully by ticking "10" on the options that suit your situation, and we sincerely thank you for your cooperation!

Digital education resources refer to all kinds of information resources that exist in digital form to support teaching and learning, which mainly include digital literature resources in libraries; multi-media resources; online course resources; subject resources such as teaching courseware, case studies, and test databases; software resources such as learning tools; and information resources for teaching and learning management.

A. Basic Information

Name of school:

Gender: Male Female

Level of education: Graduate student Undergraduate student Specialized student

B. Questionnaire content

1 The educational resources you often use come from () (Multiple choice)

a. Web pages b. CD-ROMs c. E-books and periodicals d. Traditional paper books and periodicals e. Others

2 Where do you usually get your digital education resources from () (Multiple answers)

a Campus network b Internet network c Library e-Reading room d Resource library e Others

3 The main means by which you obtain digital education resources are () (Multiple choices)

a Search engine b Purchase on your own c Login to relevant learning websites or resource-sharing platforms

d Cross-pollination among teachers, students, and friends e Others

4 What do you think about the construction of the following digital education resources in your school?

a Abundant b Fair c None

5. How satisfied are you with the digital education resources built in your school? (a)

a Very satisfied b Quite satisfied c Fairly satisfied d Less satisfied e Very dissatisfied

6 Do you think the digital education resources in your school can meet your learning needs in terms of quantity? (a) Yes

a Very satisfied b Quite satisfied c Fairly satisfied d Less satisfied e Very dissatisfied

7 Do you think the quality of digital education resources in your school can meet your learning needs? ()

a Very Satisfied b Comparatively Satisfied c Fairly Satisfied d Less Satisfied e Very Dissatisfied

8 Do you think it is necessary to share the digital education resources of regional universities? ()

(a) Very necessary b) Necessary c) Normal d) Not necessary e) Not necessary at all

