Improvement of The MAY FOURTH COMMUNE Online Learning Platform

Xiaochong Li

A Thesis Submitted in Partial Fulfillment of Requirements for
degree of Master of Science in Creative Media
November 2023

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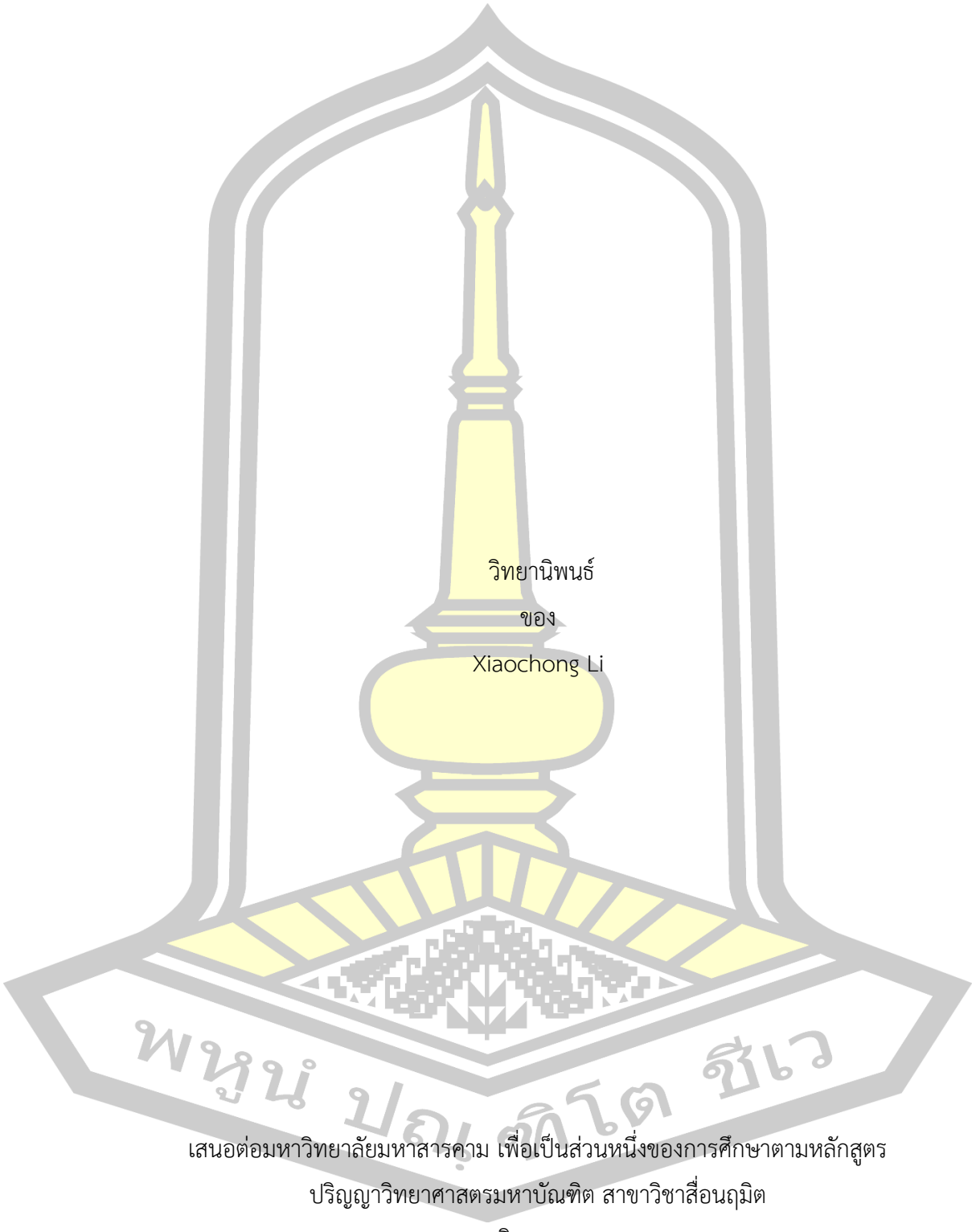

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เสนอต่อมหาวิทยาลัยมหาสารคาม เพื่อเป็นส่วนหนึ่งของการศึกษาตามหลักสูตร

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for Master of Science (Creative Media)

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The examining committee has unanimously approved this Thesis, submitted by Mr. Xiaochong Li , as a partial fulfillment of the requirements for the Master of Science Creative Media at Mahasarakham University

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ABSTRACT

Due to the bugs in the curriculum design and teacher-student interactions during the use of the May Fourth Commune, the use of this system has caused some problems for both students and teachers. This research aims to 1) study the problems in the use of online learning platforms ; 2) redesign and develop the online learning platform of the May Fourth Commune; 3) study the efficiency of online learning platforms. This study decides to adopt a mixed research method. Firstly, a preliminary interview was conducted with 10 students to collect their feedback; conduct a questionnaire survey on 100 students in the later stage to obtain user feedback data.

This research has found that there were 2 main problems during the use of the May Fourth Commune Online Learning Platform, namely the Task Treasure function and competition platform. Students can not only integrate their knowledge but also monetize it. The optimization of the May Fourth Commune Online Learning Platform has a high promoting impact on students' learning efficiency and a significant benefit on their enthusiasm for learning.

Keyword : Online Learning, Satisfaction, Task Treasure, Competition

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TABLE OF CONTENTS

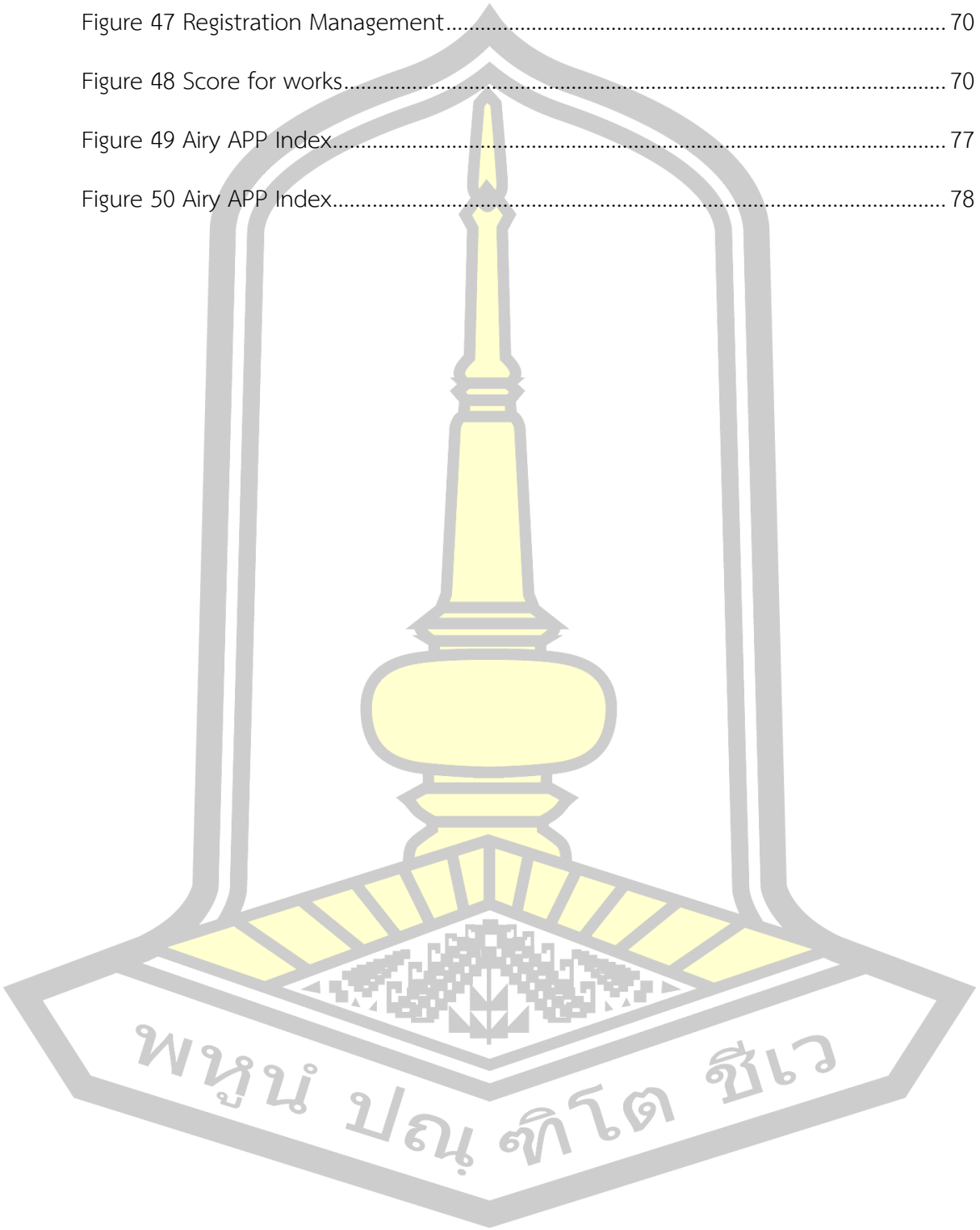
Page

LIST OF TABLE

Page

LIST OF FIGURE

Page



Chapter 1 Introduction

1.1 Background and Problems of Research

Yao Xiaojuan (2021) mentioned that with the rapid development of the social economy and the continuous progress of science and technology, numerous information technologies have gradually been closely integrated with university work and played an important role. The traditional teaching mode is no longer able to keep up with the rapid development of learning needs, and it is necessary to continuously optimize existing learning modes. Especially with the rise of internet technology, by providing online teaching modes, different users can complete corresponding learning content in different places according to their own needs, meeting people's specific needs for online learning. Through this approach, it has gained relatively high support and has gradually become mainstream at present. Compared to traditional courses, online learning utilizes online teaching mode to complete learning, relying on the Internet to obtain teaching knowledge. Internet technology can also demonstrate great flexibility in fields such as information transmission, storage, and use. Being able to provide a large number of rich teaching resources according to user needs, online learning systems have gradually gained recognition from users. At the beginning of COVID-19's popularity in 2020, the use of online teaching systems solved the learning problems of a large number of students. Through the use of online learning systems, regardless of the user's identity and age, or a series of other conditions, there were no restrictions on the content and knowledge learned by system users. Different users can analyze their specific levels and obtain corresponding knowledge, and the application of these conditions can provide convenience for students to quickly improve their abilities.

Huang Pengfei (2019) informed about autonomous learning for college students refer to the process of independently determining learning goals, selecting learning resources, executing learning activities, supervising and evaluating learning outcomes without the guidance of teachers. The diverse learning needs of current

college students have led to an increasing proportion of independent learning time. With the development of "Internet plus Education", online learning platforms have emerged in large numbers, such as Courser, Udacity, edX, China Learning Connect, Xuetang Online, China University MOOC, etc. Due to the advantage of accessing global teaching resources anytime and anywhere, online learning platforms have quickly attracted the attention of contemporary college students, who are indigenous to the Internet, and have become their preferred choice for independent learning. In particular, from 2020 to 2023, affected by the COVID-19, the Ministry of Education of China proposed the initiative of "suspending classes without stopping classes" for colleges and universities, making online learning platform the main battlefield for college students to learn independently and an important way to acquire knowledge. According to the 46th "Statistical Report on the Development of China's Internet" released by CNNIC in 2020, the scale of online education in China has reached 381 million, of which the proportion of college students who mainly aims to obtain knowledge and information exceeds 70% of the total number of college students.

E-learning Learning Platform (2023) shown information of an important means of modern training, although online learning platforms have been widely used and developed in recent years, there are many products of enterprise online learning platforms on the market with more and more refined functional designs, which still face some dilemmas and challenges. 1) Insufficient content innovation: Due to the influence of traditional offline training mechanisms, the course content provided by some online learning platforms is still relatively traditional and boring, lacking in attractiveness and interest, making it difficult to meet users' learning needs. Therefore, how to improve the innovation and interest of online learning content has become a challenge faced by online learning platforms, 2) Insufficient user stickiness: The user stickiness of online learning platforms is one of the most important factors affecting their long-term development. However, factors such as the quality of course content, user experience, and learning styles provided by online learning platforms may all affect the sustained utilization rate of users. Therefore, how to improve the user stickiness of online learning platforms so that users are willing to

learn on the platform is another issue that online learning platforms need to solve, 3) Technology and security issues: With the widespread application of online learning, network security issues and technical issues have gradually become problems that online learning platforms need to face. For example, e-learning platforms need to safeguard the security of course content against theft and leakage; at the same time, the platforms need to have stable technical support and reliable server facilities to ensure that users can learn happily at anytime and anywhere, and 4) Diversified learning needs: With the progress of science and technology as well as the development of society, the learning needs of users' are becoming increasingly diversified. How to provide more personalized and diversified learning content on the online learning platform to better meet the needs of users is also a problem that needs to be solved by the online learning platform.

In conclusion, the dilemmas and challenges faced by online learning platforms are multifaceted, but at the same time, they also nurture more opportunities and innovations. Only by continuously improving the innovation and stability of online learning platforms and meeting the learning needs of corporate users can we remain invincible in the fierce market competition.

The "May Fourth Commune" self-media learning platform is a self-media interactive community integrating news and information reading, course teaching, innovation and entrepreneurship. It is developed by in-service teachers of Zhengzhou Normal University, and the main service object is college students. The platform is committed to helping colleges and universities realize real-time interaction between teachers and students, seamlessly connecting teachers' teaching methods with students' learning methods. By combining the popular media communication methods, students can not only learn interactively, conduct operational training, but also engage in content entrepreneurship in practice.

1.2 Objective

1) to study the problems related to stakeholder interaction, design, and user experience on the May Fourth community's online learning platform.

2) to redesign and develop an online learning platform specifically tailored for the May Fourth community.

3) to assess the effectiveness of the May Fourth community's online learning platform.

1.3 Scope of Research

1.3.1 Population group and sample group:

1.3.1.1 Population group is student of Zhengzhou Normal University.

1.3.1.2 The sample group is firstly, 10 students were selected for interview and questions were collected. After the completion of the development, 100 students were randomly selected to investigate their satisfaction with the platform in the form of questionnaire survey.

1.3.2 The tools used in the research are:

1.3.2.1 Online learning platform satisfaction scale.

1.3.2.2 Online learning Efficiency Scale.

The research framework of this article is as follows:

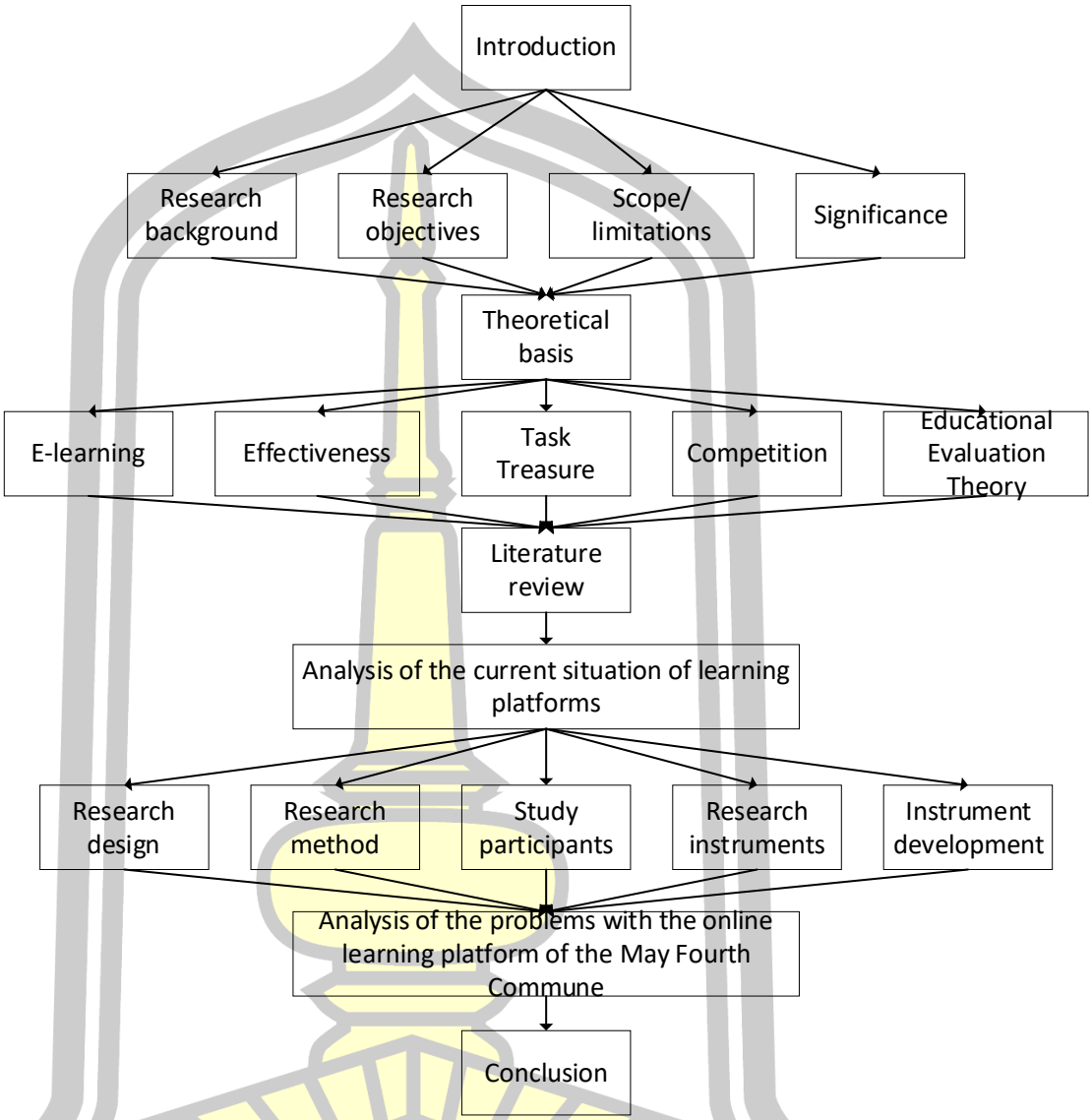


Figure 1Procedure for conducting research.

1.4 Research Significance

Currently, online learning is growing rapidly. With the development and popularization of internet technology, more and more educational institutions, enterprises, and individuals are beginning to invest in the construction and operation of online learning. With the popularization of mobile devices, more online learning platforms have also begun to focus on mobile development. Students can learn anytime and anywhere, no longer limited to schools and classrooms, nor influenced

by differences in teachers. At the same time, the Internet has made personalized learning models possible. Online learning platforms can provide diverse course resources, and the development of artificial intelligence also makes course recommendations more intelligent and more suitable for students' personal learning situations. Improving the online learning platform can not only enhance students' practical experience, improve their independent thinking ability and confidence, but also promote the close integration of curriculum and practice. Moreover, it has very important practical significance in enhancing the quality of students, increasing their interest in learning, strengthening their self-learning ability, and improving their career development ability. For education managers, the improvement of online learning platforms makes it easier for them to identify the interests and weaknesses of students in different majors, making it easier for them to grasp the learning situation of students, improve and enhance the formulation of management policies through data analysis. In addition, for the development of online education, this research proposes more innovative improvement plans for the improvement of online learning platform by using education reform theory, education management theory, and education Development theory, which has important theoretical significance for the development of education.

1.5 Theoretical Basis

1.5.1 Online Learning

The concept of online learning&E-learning was first proposed by Shields. He believed that online learning refers to a network application that puts the home page and related materials of a course in the Web to form a shared virtual Learning space to achieve a face-to-face (FTF) learning effect. Later, many foreign scholars elaborated on the meaning of online learning, among which the current commonly used definition of online learning was proposed by the AOL Learning Association (iNACOL). iNACOL pointed out that online learning refers to education in which teaching activities and content are mainly delivered through the Internet, including web-based resources, media, tools, interactive activities, courses, teaching methods, etc. In this study, online learning refers to the use of learning tools and platforms by

college students to learn online courses for their teachers based on course arrangements, with both teachers and students in different spaces. Online learning is a method based on modern science and technology, breaking through time and space limitations, and utilizing the Internet to achieve synchronous learning between teachers and students in different places. Online learning has the characteristics of convenient usage and low cost of resource acquisition, making it a reality to have better access to high-quality educational resources and an ideal learning environment for equal sharing of knowledge and information. With the advent of the post pandemic era, the employment pressure brought about by the slowdown in market economy growth has forced college students to focus more on improving their abilities. Through online learning, it has become the best choice to achieve self-improvement during the pandemic period. According to the statistical report issued by China Internet Network Information Center every year, the scale of online learning has increased year by year, and the research on the teaching mode and development direction of online learning has gradually become the focus of many scholars.

From high-frequency keywords, it can be seen that online learning is divided into three categories, namely remote education, MOOC, and online learning in the context of the rapid development of artificial intelligence. The three are intertwined and each has its own characteristics, reflecting the development process of online education in China.

In the current literature on the willingness to use online learning platforms, individuals' willingness to learn online is mainly studied from the perspective of technical means. However, technological means only focus on the tool usage attributes of students' online learning, and research on online learning should focus more on education itself. This is not only an important fundamental attribute of online learning, but also focuses on the personal experience of students' growth. Once an individual lacks strong learning motivation, it will be more difficult to enter a learning state. Therefore, studying the technological means of learning cannot change or enhance students' psychological demands and learning willingness in the online learning process. By analyzing learning motivation and identifying individual

factors that affect online learning, it will be more conducive to fully unleashing students' subjective initiative, thereby improving their online learning effectiveness. Through in-depth research on individual online learning mode, we seek psychological factors that stimulate individual learning needs, so as to promote them to better carry out independent E-learning.

In 2012, MOOC began to rise and quickly gained influence worldwide. Since 2013, the number of MOOC research articles in China has been increasing linearly, forming a trend of explosion. Mu Ke is based on the values of "high-quality, large-scale, openness and onlineness". Learners learn independently and openly through free or affordable course platforms. Its fundamental starting point is to achieve the sharing of high-quality educational resources through the Internet, and learners receive equal and inclusive high-quality education. Its operating mode conforms to the trend of globalization and informatization in higher education, and is of great significance for the improvement of educational innovation, social services, international influence, and other aspects of universities themselves.

However, whether it is remote education or MOOCs, there are generally the following problems: poor social interaction among students, reduced sense of presence among students, failure to fully exert students' autonomy, and doubts about the quality of education. Currently, the deep integration of artificial intelligence and higher education will lead to breakthroughs in fully developing students' potential and teachers' teaching methods.

The integration of artificial intelligence technology with education and teaching has also become one of the core driving forces for educational development; The development of artificial intelligence technology poses serious challenges to traditional educational concepts, educational functions, traditional roles and authoritative positions of teachers, and the labor market. The deep integration of AI and education is expected to solve the problems of insufficient sense of presence, poor interaction effect and so on. However, the impact of AI on education cannot be overestimated or underestimated. It may not have a substantial impact on education in the short term, but it may also have a subversive change on

education after being combined with Internet, Big data and other information technologies.

The May Fourth Commune is an online learning platform developed by Zhengzhou Normal University in Henan Province, China, where the author works. The platform serves all college students in China and provides a large number of online learning resources, such as videos and e-books. The system has been running online for some time, but currently there are also some defects and issues.

Mainly manifested in the following three aspects:

1) Lack of high-quality original educational resources. The ability of learning resources to meet students' strong thirst for knowledge is an important influencing factor in determining whether students' online learning motivation can be stimulated. However, most of the learning resources provided by the "May Fourth Commune" are mainly collected and introduced by platform developers based on relevant agreements, with open source and free learning courses, whose resources are less systematic and less complete. Due to the lack of high-quality learning resources, it is difficult to effectively stimulate students' online learning motivation. For example, platform developers have failed to effectively contact authoritative teachers and experts in various fields to assist them in developing high-quality learning resources, and the platform has not effectively established a learning resource update system, resulting in slow learning resource updates and difficulty in stimulating students' online learning motivation.

2) With the increasing number of courses released by online systems, users are easily at a loss due to the abundance of course resources, which increases the difficulty of obtaining resources for users. Online learning resources are too scattered and lack systematicity, making it difficult for students to accurately and quickly identify the most valuable and suitable teaching resources among a large number of online course resources. This leads to students spending a lot of time in the retrieval process, while also weakening their motivation for online learning.

3)The actual learning effectiveness and evaluation mechanism of the system are not perfect enough, especially since the system design and development

can provide an environment for student users to operate and process, while utilizing teaching resources from the Internet to supplement their own data deficiencies. In addition, learners also need to monitor and analyze their learning status. Students can understand the learning situation, and the system can help them improve their grades. Students can analyze problems that arise during learning and provide targeted supplements. The online learning system should also provide the function of electronic assessment to help students detect learning effects.

1.5.2 Online learning effectiveness

The term 'satisfaction' comes from management and refers to customers' feelings and evaluations of service. Satisfaction is essentially a psychological state that arises when consumers compare their expectations with actual performance. In the process of education and teaching, students are consumers of educational products, and their evaluation of the obtained educational products can be called learning satisfaction. College student satisfaction is the starting point of higher education quality evaluation, which refers to the overall perception of the education process by college students compared to their preset expectations when receiving higher education. In this study, online learning satisfaction refers to the attitude of students towards whether they are satisfied or not due to the difference between their actual experience and expected results during online learning, which is closely related to their own learning ability and teacher teaching. Therefore, the research on online learning satisfaction of college students in this study is divided into comparison between expectations and reality, students' satisfaction with their own learning status, and satisfaction with teacher teaching.

1.5.3 Task Treasure

The May 4th Commune task subcontracting platform is a task docking platform integrating task release, task undertaking and knowledge services. The platform mainly serves college students. The platform pioneers a bilateral marketplace between students and enterprises, seamlessly connecting students and enterprises through online and offline resources and big data deposition.

It provides a platform of mutual trust between college students and enterprises. Enterprises release knowledge service tasks such as WeChat promotion, Personal

media promotion, logo design, product design, and Twitter writing on the platform. Students receive compensation after taking on tasks and completing services.

1.5.4 Competition

The May Fourth Commune Learning Competition Platform is a skills competition software designed to support practical teaching of online marketing and e-commerce related majors. The design of the competition platform is based on the core concept of "promoting learning, teaching, reform and construction through competition", and fully integrates Personal media, soft writing, marketing promotion, product design and other teaching contents, which can effectively test students' mastery of various skills such as online marketing promotion, cultivate students' online marketing skills, and enhance their professional quality, promote communication and coordinated development between students' professional abilities and the talent needs of enterprises.

This system provides teachers to build their own competitions and students to participate in competitions freely. Through the built-in network scoring mechanism, the scoring and ranking of participating works can be achieved. Through this system, teachers can move various practical assignments in the teaching process to the competition platform, achieving the organic integration of various evaluation methods such as netizen scoring, student mutual evaluation, and teacher answer scoring, improving the efficiency of homework evaluation, mobilizing students' initiative in practice, and effectively improving teaching effectiveness.

1.5.5 Education Evaluation Theory

Education evaluation is an activity that makes judgments on the degree to which educational activities meet the needs of society and individuals. It is a process of judging the current and potential value of educational activities, in order to achieve the appreciation of educational value. The value of education is determined by whether or to what extent educational activities can meet the needs of the subject. Since different subjects have different experiences, they will have different emphasis on the needs generated by education, and then have different value judgment on educational activities. Therefore, educational evaluation combines objectivity and subjectivity.

Education evaluation can be divided into "individual evaluation" and "social evaluation" types based on the different needs of its subjects. Among them, the individual evaluation of education is a value judgment made by individuals from their own needs, interests and emotions. And individual evaluation can be divided into individual evaluation of oneself and evaluation of others' affairs. The subject of individual self-evaluation is the self, and the object of evaluation is the behavior and results of the self. The evaluation of others by individuals refers to the evaluation of objects other than oneself, and the evaluation of teachers by students belongs to this type.

The evaluation of online learning by college students in this study belongs to individual evaluation, which takes college students as the subject of evaluation, and includes college students' self-evaluation and individual evaluation of other people and other things. The evaluation of students' satisfaction with their online learning status, self-efficacy in their online learning process, and improvement of learning ability all belong to college students' self-evaluation; And college students' evaluation of the effect of interactive communication in online learning, their willingness to use online learning as a learning method, and their satisfaction with teachers' online teaching are all individual evaluations of other people and other things.

Any evaluation has a certain purpose on the basis of reflecting value judgment, and education evaluation is no exception. Educational evaluation has the purpose of promoting learning, improving teaching, strengthening management, and developing research. Firstly, the purpose of this study is to understand the evaluation of online learning by college students. Through self-evaluation and evaluation of other people and other things, it reflects the current problems in college students' online learning. During the evaluation process, it guides students to reflect, thereby stimulating their learning motivation and promoting learning; Secondly, this study explores the influencing factors of online learning for college students from the perspectives of teacher characteristics, teaching characteristics, curriculum characteristics, etc., and identifies the problems and areas that need to be strengthened in the personal quality and teaching organization implementation

process of teachers, in order to achieve the goal of improving teaching and learning; Finally, online learning is playing an increasingly important role as a learning method. Developing online education is a way for colleges and universities to achieve the deep integration of "Internet plus education". The ultimate purpose of the countermeasures and suggestions of this study is to play a management role and improve the quality of online learning. Therefore, the online learning evaluation of college students in this study conforms to the relevant theories of educational evaluation.

Chapter 2 Review of Literature

2.1 The general problem of MAY FOURTH COMMUNE

1) Initial restrictions

If emerging self-media platforms cannot quickly obtain accurate traffic, they will narrow the audience area. For learning platforms, the lack of teacher resources will not highlight the platform's characteristics.

2) Insufficient funds

"We do not have sufficient working capital, and we cannot invest a large amount of funds for operation and promotion at the beginning of the project. Although our project belongs to the type with relatively small investment, there is always investment, so capital turnover has become the biggest difficulty in the implementation of this project.".

2.1.1 The current status of use of May Fourth Commune

The "May Fourth Commune" self-media learning platform is a self-media interactive community that integrates news and information reading, course teaching, and innovation and entrepreneurship. Its main service target is college students. The platform is committed to helping universities achieve real-time interaction between teachers and students, seamlessly integrating teachers' teaching methods with students' learning methods. Combining with popular media dissemination methods, students can have both interactive learning, operational hands-on training, and conduct content entrepreneurship in practice.

Autonomous learning is not easy, as one has to face various dull textbooks and exercises every day. A concise and easy to understand learning method is very important for a learning user. However, the micro course section launched by the May Fourth Commune can help users learn the essence of a course in just a few minutes, making them more fond of online autonomous learning. The May Fourth Commune will also strictly monitor the content of micro courses and retain every attentive user.

Student: For students studying in school, a new online video learning has been launched, allowing them to learn new knowledge online and preview knowledge that they have previously learned but have not yet mastered. You can also ask and learn from the resident teachers online. Teachers: On the self-media learning platform of the May 4th Commune, teachers will experience a new way of teaching and interaction with the help of the Internet, which can not only bring them closer to students, but also improve their own popularity and influence.

News Reading - Daily update of the most comprehensive news information, the most concerned hot topics, and the favorite high-quality micro courses for college students.

Course training - can be used as a learning platform for students, to meet their learning content needs, including pre-class previewing, after-class review, achievement testing, classroom assignments, subject competitions, etc,.

Characteristic micro class - teachers turn the most essence part of each class into videos, text tutorials or galleries to present to students.

2.2 The Software Development Life Cycle (SDLC.)

2.2.1 The Analysis

After determining the feasibility of software development, a detailed analysis of the individual functions that the software needs to perform is conducted. The requirements analysis is a very important stage, and if done well in this stage, it will lay a solid foundation for the success of the entire software development project. "The only thing that remains unchanged is the change itself." Similarly, requirements are constantly changing and deepening throughout the software development process, so we must develop a requirement change plan to cope with this change and protect the smooth progress of the entire project.

Online education breaks through the restrictions of time and space, meets the demand of users for fragmentation of learning time in the mobile Internet era,

and realizes large-scale open sharing of educational resources. The survey found that 84.9% of users believe that online education can partially replace offline education. Among them, 49.4% of online education users believe that offline education is primary and online education is secondary. The online education industry can provide scientific, reasonable, and quantifiable evaluation criteria for offline education, can improve teaching efficiency, assist in personalized education, and achieve individualized teaching. According to the development trend of the industry, the future education industry should be a combination of online and offline development in parallel.

2.2.2 Software Design

In the software design stage, the whole software system is designed mainly according to the results of demand analysis, such as system framework design, database design, etc. Software design is generally divided into overall design and detailed design. Good software design will lay a solid foundation for software programming writing.

The May Fourth Commune platform adopts Restful architecture based on Net technology, supporting multi-terminal access and making rapid deployment of applications enable.

Presentation: provides a user interface to realize user interaction.

Application: coordinates the presentation layer and domain layer, and coordinates business object to execute specific application tasks. It does not contain business logic.

Domain: includes business object and business rules, which is the core layer of the application.

Infrastructure: provides general technology to support higher layers. For example, the infrastructure layer's repository can achieve database interaction through ORM.

Distributed Service: This is used to expose application program interfaces for remote clients to call. For example, it is implemented through the ASP. NET Web API and WCF.

2.2.3 Implementation

Execution is the process of converting the results of software design into program code that can be run by a computer. It is necessary to establish unified and standardized writing standards in program coding, to ensure the readability and maintainability of the program, and improve its operational efficiency.

2.2.4 Software Testing

After the software design is completed, it needs to undergo rigorous testing to identify and correct any problems that may exist throughout the entire design process. The entire testing process is divided into three stages: unit testing, assembly testing, and system testing. There are two main test methods: white box testing and black box testing. During the testing process, it is necessary to establish a detailed testing plan and strictly follow it to reduce the randomness of testing.

2.2.5 Deployment and Maintain of Software

Software maintenance is the longest lasting stage of the software life cycle. After the software development is completed and put into use, due to various reasons, the software cannot continue to adapt to user requirements. To extend the service life of software, it is necessary to maintain the software. The maintenance of software includes two aspects: corrective maintenance and improvement maintenance.

2.3 Related Research

College students' learning satisfaction refers to their overall perception of the education process compared to their preset expectations when receiving higher education. College students' learning satisfaction is one of the important indicators for measuring the organization and management of higher education, which has a significant impact on the quality of love education for students during their university years. (Wen Jing, 2015) In distance education, students' learning attitudes and behaviors are closely related to their learning satisfaction. Due to the fact that

learning satisfaction can directly reflect the physical and mental experiences of college students during online course learning, it can intuitively reflect their self-evaluation. Therefore, studying the satisfaction of current college students in China with learning online courses is of great significance in improving the teaching quality of online courses in China. This study measures college students' overall perception, interaction experience, and whether online learning has helped them improve their professional learning and educational development, in order to study their satisfaction with online learning.

1) Current research status on the relationship between interaction and online learning satisfaction

Interaction can serve as a proactive organizer, allowing learners to connect new and old knowledge and generate new meanings or frameworks. (Juwah, 2006) In online learning, the most famous interaction framework proposed by Moore includes three elements: interaction between learners and teachers, interaction between learners and learners, and interaction between learners and learning content. （Moore，1989a）

There are various forms of interaction between learners and teachers, such as teachers evaluating, encouraging, and providing guidance to learners, learners' responses to teaching, and so on. The research by YuKselturk and Yildirim shows that in online learning, communication between learners decreases, while communication between learners and teachers remains constant throughout the entire learning process. (Yukselturk&Yildirim, 2008b) Further research suggests that interaction between learners and teachers is the most important indicator for predicting online learning satisfaction. (Battalio, 2007) These research results all indicate that the interaction between learners and teachers is the most important factor affecting learners' learning satisfaction.

Research has shown that the interaction between learners has a greater impact on online learning satisfaction than the interaction between learners and teachers. (Jun g, Choi, Lim, 8lLeem, 2002) In the process of online learning, learners engage in peer to peer interaction with other learners through various

communication channels, which can enhance their interest and emotions in learning the course, deepen their understanding of the content learned, and promote the construction of new knowledge systems. Therefore, if online learning can provide a platform for interaction between learners, learners' satisfaction with the online course will increase. However, interaction is not more better. If online learning requires too much communication and cooperation between learners and learners, learners' satisfaction with online learning will decline.

Unlike the two types of interaction mentioned above, the interaction between learners and learning content refers to a one-way communication process that occurs between learners and carefully crafted materials that reflect the course theme or content. (Moore, 1989b) When learners reflect on the information, knowledge, or viewpoints gained in course learning and use them as experiences gained in course learning, the interaction between learners and the learning content occurs. In the teaching context of learning with money, learners spend most of their time interacting with the content of learning with money. For example, pr-class materials related to learning allow learners to establish a preliminary connection between old knowledge and new knowledge, achieving the goal of being an early organizer; The systematic online course content can enable learners to master the knowledge they have learned; The extension materials related to this learning content provide learners with the opportunity to expand the depth and breadth of their learning. Therefore, learners' experience with learning content can greatly affect their satisfaction with online learning.

2) Research status of the relationship between Internet self-efficacy and online learning satisfaction

Previous studies have shown that Internet self-efficacy can regulate learners' use and choice of the Internet, and it can slightly regulate learners' perceived learning and learning satisfaction. Some studies have found that Internet self-efficacy has a certain impact on learning motivation, learning process and learning results. For example, Liang and Tasi pointed out that learners with high self-efficacy of the Internet prefer online learning environments, and are more willing to

use the Internet to solve problems, demonstrate the sources of various problems and describe knowledge in detail in learning activities. (Liang&Tsai, 2008b) At the same time, in web-based learning, the higher the Internet self-efficacy, the more positive the learning motivation. However, some scholars are skeptical and believe that there is no decisive relationship between Internet self-efficacy and satisfaction. For example, Rodriguez Robles tested a prediction model of adult online learning satisfaction and found that Internet self-efficacy is not the main predictor of learning satisfaction. (Rodriguez Robles， 2006）

Looking at previous studies, we can see that different scholars have different views on the relationship between Internet self-efficacy and online learning satisfaction, and there is insufficient research on the importance of Internet self-efficacy to online learning in the existing literature. Therefore, this study decides to take Internet self-efficacy as another important research factor besides interaction.

3) Current research status on the relationship between self-regulated learning and online learning satisfaction

In recent years, research has shown that self-regulated learning has a certain impact on online learning. Unlike previous classroom teaching, online learning places learners at the center of teaching, giving them more autonomy and taking on more responsibilities. Online learning has the characteristics of flexibility, immediacy, and learner centeredness, requiring learners to use more self-regulation skills. The more self-regulation skills learners possess, the greater their chances of success in online learning. Therefore, this study suggests that self-regulated learning may affect online learning satisfaction. Puzzifer ro found a significant correlation between metacognitive self-regulation, time management, and learning environment with learners' learning satisfaction (Puzzifer ro, 2008). Peterson found in his 2011 survey that a certain attribute of self-regulation can be used to predict learners' willingness to active learning online courses in the future. Therefore, from these studies, more research is needed on the relationship between self-regulated learning and online learning satisfaction. According to Puzziferro's research, this study explores the

impact of self-regulated learning on college students' satisfaction with online learning from four aspects: learning motivation, time management, metacognitive self-regulation, goal setting, and planning, based on the dimensions of self-regulated learning and the characteristics of flexible and autonomous online learning time.

4) To improve the online learning of the may fourth community platform. The researchers studied and analyzed related theories and research as follows:

Duan Gangping (2021) conducted research on the key elements of online learning platform learning experience based on the Carnot model. From the perspective of learning experience, he screened and analyzed the factors that affect the learning experience in the construction of online learning platforms, seeking breakthroughs in the development of online learning platforms themselves and the improvement of user experience. He used the Carnot model questionnaire analysis method, expectation factors, etc., to accurately identify the positive and negative impacts of each element on the learning experience. The results showed that through the selection line of key elements, 7 key elements such as "establishing feedback mechanism" were selected, providing reference for the optimization and construction of online learning platforms.

Wu Xiaolong (2019) studied the design and implementation of online learning system based on Microservices architecture, developed an online learning system based on Microservices architecture, so that college students can learn and assess courses through online teaching platform, solve problems such as learning efficiency decline, inability to understand in class, difficulty in reviewing after class, etc. Using the design method of Microservices architecture, the system is divided into four Microservices according to business logic: user service, course service, review service and exam service. The online learning system based on Microservices architecture can integrate many excellent teaching resources, cover multiple disciplines, and meet the personalized learning needs of college students.

Zhao Yang (2019) studied the design and implementation of adaptive learning system for online courses. Online education platforms enable learning to be no longer limited by time and space. How to enable learners to find the possibility of

truly achieving learning goals in a rich and complex curriculum has become one of the focuses of attention in the field of education and educational platforms. Based on the general model of the adaptive learning system, the functions of each module in the overall architecture of the domain oriented turn discipline system are improved, and the overall workflow of the system is designed. Taking the subject of network security as an example, this paper designs and implements the adaptive learning system of network courses, aiming to provide new ideas for the research of adaptive learning system in subsequent professional fields.

Xue Kunyu (2018) studied the design and implementation of online lesson preparation and classroom interaction systems in universities. Traditional lesson preparation is paper-based, and the preservation of information has become a major problem, resulting in low efficiency in querying data. At the same time, the interaction between teachers and students in the classroom is not flexible enough. The traditional education model is no longer able to adapt to the rapid development of modern teaching. It is mainly divided into five modules: online lesson preparation, classroom interaction, online learning, online tutoring, and learning reports. The teacher platform is based on the B/S model, while the student platform is an APP. Through the use of the system in the Information College of Shanxi Agricultural University, it is simple in operation and friendly in interface, which can effectively help teachers improve their work efficiency, make teaching work more collegial and management more scientific.

Ni Jingyue (2019) studied the design and implementation of a one-stop autonomous learning platform for Era Guanghua, to solve the shortcomings of the traditional distance education courseware in terms of security, compatibility and other aspects, such as the single form of recess and the tedious production process. During the system development process, software engineering concepts, NET platform, and three-layer architecture design were adopted. Course management can manage course information on the platform, as well as information related to courses, such as discussion areas, handwriting information, etc. In the learning mall, students can purchase courses and teachers can sell courses; In statistical analysis, platform administrators can analyze the usage of the platform through reports.

Yao Xiaojuan (2021) studied the design and implementation of online learning systems on cloud platforms. Compared to traditional courses, online learning utilizes online teaching mode to complete learning, relying on the Internet to obtain teaching knowledge. Internet technology can also demonstrate great flexibility in fields such as information transmission, storage, and use. Being able to provide a large number of rich teaching resources according to user needs, online learning systems have gradually gained recognition from users. During the outbreak of the epidemic in 2020, the use of online teaching systems solved the learning problems of a large number of students. Through the use of online learning systems, regardless of the user's identity and age, or a series of other conditions, there will be no restrictions on the content and knowledge learned by system users. Different users can analyze their specific levels and obtain corresponding knowledge, and the application of these conditions can provide convenience for students to quickly improve their abilities.

Liu Chunfang (2021) studied the impact of online learning resource organization on the effectiveness of autonomous learning among college students. The significance of constructing an online learning platform is determined by whether it can effectively organize online learning resources to provide precise and personalized resource services for college students' autonomous learning. Through empirical analysis, this study explores the impact of technical characteristics of online learning resource organization (tag integrity, tag effectiveness, resource relevance) on the effectiveness of autonomous learning for college students. This provides a framework for the establishment of organizational rules for online learning resources on online learning platforms, which helps them effectively organize online learning resources, thereby providing appropriate resource services for college students' autonomous learning, and give full play to the value of online learning platform construction.

Wang Wanying (2022) studied the impact of teacher-student interaction in online Chinese classrooms on students' learning outcomes. The specific dimensions of teacher-student interaction in online Chinese classrooms - interaction content, interaction types, interaction motivation, interaction tools, interaction quantity, and

time - have an impact on students' learning outcomes. Targeted application suggestions were proposed to optimize teaching activities, promote student discussions, stimulate student interest, supervise and guide students, participate in student discussions, provide timely feedback and evaluation, enhance teacher-student emotional communication, and build a harmonious learning atmosphere. This provides teaching reference for teachers' online Chinese teaching practice, which is conducive to promoting the application and development of online Chinese education, improving the effectiveness of students' online learning, and has certain practical significance.

Zhou Tao (2019) studied the analysis and practical research of student behavior data on high school online learning platforms. Using online learning platform student behavior data to propose teaching optimization strategies for high school information technology classrooms. Based on the analysis of student behavior data on the information technology teaching platform, establishing a performance prediction model, and verifying the accuracy of the prediction by combining it with the latest comprehensive exam results. Then, by analyzing the relationship between student behavior data and learning outcomes, corresponding conclusions are drawn. Strategies are proposed and put into practice from the perspectives of teachers, students, and platforms, and the optimized teaching outcomes are analyzed to verify whether the strategies are beneficial.

Li Yuping (2019) studied the design and implementation of an online learning platform based on WeChat mini programs. Firstly, the development status of distance education and online education is analyzed, and the advantages and disadvantages of some existing online learning platforms are proposed. The feasibility, functional requirement and non-functional requirement of online learning platforms were analyzed through UML use case modeling. Considering the characteristics of WeChat small programs that are ready to use and have a large flow, the system client is determined to use WeChat small program architecture for development, and the basic structure and functional modules of the system are designed. On the basis of analysis and design, Java is used to complete the system code writing work, MySQL is used for the database, and Redis' storage tables and

caching mechanism are used to avoid frequent read and write operations on the database. Users can watch teaching videos for online learning and interact with teachers and students through the system. Finally, performing functional testing, performance testing, and compatibility testing on the system to ensure that the system is safe and available.

Yuan Feng (2013) studied the design and implementation of online learning platform for software engineering core courses. China's online education is undergoing comprehensive and accelerated development. Developing a good online platform is an important prerequisite for helping the rapid development of China's education industry. The "Software Engineering Professional Learning Platform" can upload and download corresponding course courseware, review questions, etc., providing convenient ways for students to learn new knowledge, saving students time searching for information online, and improving teaching effectiveness, optimizing teaching methods, and providing students with a lively and visual learning atmosphere.

Huang Pengfei (2019) studied the design and implementation of online learning system based on cloud platforms. We have designed an online learning system based on internal education and training within the enterprise, which provides a large number of learning resources and can provide a powerful auxiliary tool for the learning and communication of enterprise employees, and promote the process of enterprise information construction. We have conducted research on enterprise online learning platform based on cloud computing, and its architecture, functional modules, etc. Were designed in detail to ensure the establishment of a highly reliable online learning system.

Chapter 3 Research Methodology

3.1 Research Process

This study starts with collecting course and student information, and then conducts statistical analysis on the collected data to summarize the influencing factors of students' online learning efficiency. It also provides a new course organizational structure and development design plan, and finally summarizes the impact mechanism of students' online learning efficiency. Finally, the overall architecture, modules, and outline design of the May Fourth Commune online learning platform were determined, and further detailed design was carried out to complete the coding implementation of each module. Afterwards, we tested and debugged the developed May Fourth Commune online learning platform, and found out the problems again, corrected them and launched into the production environment.

In this study, 10 students were firstly selected for interviews to collect students' problems and find out the problems of May Fourth Commune learning platform, and the data were analyzed for the problems to find out the solutions; Then the May Fourth Commune learning platform was redesigned and developed according to the program; After the development was completed, 100 students were randomly selected to conduct a questionnaire survey on platform usage satisfaction; Finally, the data was analyzed to see if the problems were solved.

3.1.1 Study the problems in the use of online learning platforms

1) Curriculum design.

2) Interaction between teachers and students

3.1.2 Redesign and develop the online learning platform of the May Fourth Commune.

1) In the case that the development of online platform is feasible, each function of the platform needs to be analyzed in detail.

2) In the stage of platform design, we mainly design the platform according to the results of analyzing user needs, such as system framework design, database design and so on.

3) The essence of platform operation is to convert the design concept of the platform into the program code that can be run by the computer. It is necessary to develop uniform and standards-compliant writing specifications when coding programs.

4) After the design of the platform is completed, strict testing should be carried out to find the problems existing in the whole design process of the platform and correct them. The whole test process is divided into three stages: unit test, assembly test and system test.

5) The maintenance of a platform is the longest lasting phase of the platform lifecycle. After the development of the platform is completed and put into use, due to various reasons, if the platform cannot continue to adapt to the requirements of users. To extend the service life of the platform, it is necessary to maintain the software.

3.1.3 Research the efficiency of online learning platforms

1) The questionnaire was **designed,** and the reliability of the questionnaire was analyzed, such as whether the data collection and analysis of this study were reliable and whether the design of the questionnaire was reasonable.

2) Analyze the influencing factors of online learning efficiency.

3) Analyzes the differences of dimensions before and after the May fourth Commune's online learning platform is perfected.

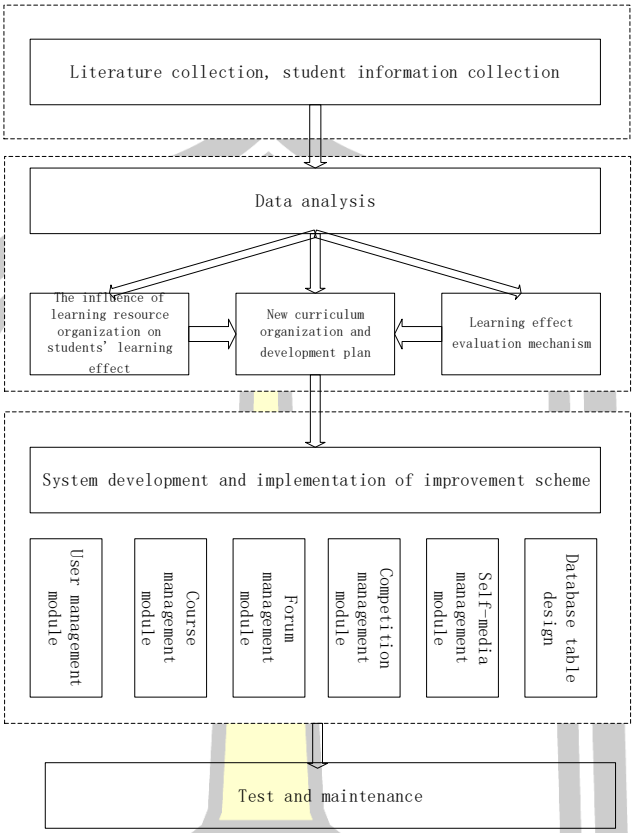


Figure 2 Research framework

3.2 Research Target Groups

3.2.1 Investigators & Developers

The main target group of this study is college students. According to the disciplinary and professional settings of each university and the career fields of the graduates, universities can be divided into teacher training, political and legal education, art education, sports, finance and economics, language education, comprehensive education, science and engineering, medicine, etc. The different types of universities determine the different resources required for autonomous learning among college students. For example, the resources required by finance and economics colleges are mainly in the economic field; The resources required by normal universities are mainly in the field of education; The resources required for science and engineering colleges are mainly in the industrial field. Task technology matching requires providing the necessary resources for autonomous students in

higher education, and the resources required for autonomous learning vary among different types of schools. For example, the resources required for autonomous learning of normal university students are mainly resources in the educational field. The resources in the educational field are characterized by strong divergence and weak relevance, and their dependence on resource relevance is weak, leading to the weak dependence of normal university students on resource usability for autonomous learning. The resources required for self-directed learning among college students in science and engineering colleges are mainly in the industrial field, and the strong correlation between industrial resources leads to a strong dependence on the ease of use of resources for self-directed learning among college students in science and engineering colleges. The degree of dependence on resource usability varies among college students of different school types, resulting in varying effects of task technology matching on the effectiveness of autonomous learning among college students of different school types. This survey used the Likert scale, where 1 indicates "strongly disagree" and 5 indicates "strongly agree". Considering that students of different genders, grades, and school types have different requirements for online learning resource organization, this study selected three provincial-level high schools in Henan Province. The types of these schools are finance and economics, normal education, and science and engineering, and the survey subjects are defined as freshmen, sophomores, juniors and senior year students enrolled in the three universities.

3.2.2 Sample

Before the online learning platform was perfected, the questionnaire of this article was filled out via QR codes through the Questionnaire Star WeChat platform. Compared to traditional paper questionnaires or email links, QR code questionnaire filling is more convenient and efficient. Respondents only need to scan the QR code through mobile devices such as their phones to start filling out the questionnaire, without being limited by time and location. The QR code questionnaire can control the content filled in by respondents by setting rules and restrictions, avoiding errors and loopholes in manual input, and improving the accuracy of the data. In order to

gain a more accurate understanding of students' attitudes towards online learning platforms, this survey determined the middle of the semester as the distribution time. A total of 100 questionnaires were distributed, and 100 questionnaires were collected with a recovery rate of 100%. There were no randomly filled out questionnaires, no missing answers, and the questionnaire efficiency was 100%. Therefore, the validity rate of this questionnaire is greater than 70%, and the survey results can be used as the basis for the conclusion of this study.

3.3 Research Instruments

Online learning platform satisfaction scale: Design a satisfaction scale based on the characteristics of universities in Henan, China, through the questionnaire star platform. The questionnaire includes four dimensions: curriculum design, platform operation, learning behavior, and teacher-student interaction. Through the survey of these four dimensions, it is determined whether the platform will help students use it, whether it can help students develop learning plans and review exams, the degree of relationship between students' learning emotions, and the degree of emphasis on students' problems.

Online Learning Efficiency Scale: Conduct a questionnaire survey on students before and after platform modification through the Questionnaire Star platform. Including 4 questions, my knowledge has expanded; My professional knowledge and skills have been improved; My communication skills have been improved; My problem-solving ability has been improved.

3.4 Instrument Development

3.4.1 Online Learning Platform Satisfaction Scale

This study is based on Kuhn's "learning participation" theory, Pascalella's comprehensive causal model for student development, and Astin's IEO model theory. Referring to relevant literature and design, and based on the characteristics of universities in Henan Province, China, an online learning platform student learning satisfaction scale was designed. The questionnaire includes four dimensions: course design, platform operation, learning behavior, and teacher-student interaction.

Course design is used to measure the novelty, practicality, completeness, and difficulty of course content in online learning platforms. The platform runtime is used to measure whether the platform is running smoothly, whether there are issues such as slow speed, and students' satisfaction with the smoothness and ease of use of online learning platform operations, as well as the use of platform design. Student behavior is used to measure the level of support for student learning behavior in online learning platforms, whether it can improve students' learning ability, and whether it can stimulate students' interest in learning. The teacher-student interaction dimension is used to measure the level of support provided by teachers on online learning platforms for students' learning behavior, including whether they will help students use the platform, whether they can help students develop learning plans and review exams, the degree of relationship between students' learning emotions, and the degree of attention paid to students' problems. Please refer to the attached table for specific questions.

3.4.2 Design of online learning efficiency scale

The development of the online learning efficiency scale for this study mainly comes from two aspects. Firstly, based on the systematic review of existing literature on learning ability, online learning ability, and other related factors, element extraction is carried out. Drawing on the relevant scales of domestic and foreign research on learning ability and online learning ability, a prediction questionnaire for online learning ability of college students is developed, and the scale is adjusted according to the characteristics of college students and online learning. The second is based on the experience summary of online learning ability of university students, and adjusted through discussions with learning ability research mentors. Finally, the online learning strength table of this study is divided into two parts. One part is the basic personal information of students, including gender, grade, major, university type, learning platform and other basic Demography variables. The second part is the online learning efficiency scale, which includes four questions. My knowledge has expanded; My professional knowledge and skills have been

improved; My communication skills have been improved; My problem-solving ability has been improved.

3.5 Data Collection and Analysis

This study aims to explore the impact of online learning resource organization on the effectiveness of autonomous learning for college students, and provide reasonable suggestions for the organization of online learning resources for the upcoming online learning platform and currently operating online learning platforms. This study was conducted through the WeChat questionnaire program to distribute the questionnaires before and after the platform was improved, and two surveys were conducted in total. Finally, Excel was used for data processing, missing value samples were deleted, and the answers to the questions were coded and entered. The scores of each dimension were calculated by summation, and the raw data of data analysis was finally obtained.

1. Before the platform was perfected, a questionnaire survey on students was conducted and the results were analyzed for data. After understanding the major problems in online learning platforms and the efficiency issues of online learning platforms, we redesigned and developed the May Fourth Commune online learning platform.

2. After the platform was perfected, we conducted a questionnaire survey on students and analyzed the results with data. Is there a significant improvement in students' satisfaction with the operation of the learning platform after its improvement? Is there a significant difference in the three dimensions of platform operation, course design, and teacher-student interaction between before and after the improvement of the online learning platform?

In this study, 100 questionnaires were distributed for each survey, and a total of 100 questionnaires were collected. The recovery rate was 100%, with no incomplete or random responses. The questionnaire efficiency was 100%, so the survey results can serve as the basis for the conclusion of this study.

Chapter 4 Issues in the Use and Optimization of the MAY FOURTH COMMUNE Online Learning Platform

Through a questionnaire survey on the problems encountered by various users during the use of the learning platform, a survey was conducted and the results of the survey were statistically analyzed. We understood the major problems in the online learning platform and learning efficiency issues of the online learning platform. We have redesigned and developed the May Fourth Commune online learning platform, adding task treasure and competition functions.

This analysis was conducted by using of SPSS25 data analysis professional tools, while different individuals' basic information in the study may have some influence on the research conclusion. Therefore, if there is no significant difference between individuals' basic information, the control variables will have no significant influence on the establishment of the model. At this time, the credibility of the model is higher and the model is more reliable.

4.1 Problem in using the MAY FOURTH COMMUNE Online Learning Platform

Through interviewing with 10 students, this study found that there are two key issues with the platform: curriculum design and teacher-student interaction. In response to the curriculum, the platform has added a task treasure function to enhance students' learning effectiveness and interest; Increasing competition platforms for teacher-student interaction, and the purpose of competitions is to integrate course content, clarify learning objectives, and thereby enhance students' initiative and enthusiasm in learning.

SPSS25 data analysis tool was used in this analysis, and different basic information of individuals in the study may have a certain impact on the research conclusion. Therefore, if there is no significant difference between basic information of individuals, control variables will not have a significant impact on the establishment of the model, so the model is more reliable and reliable.

1) Task settings lack of personalized and differentiated tasks

The task lacks personalization and differentiation, and each student usually adopts the same task design. This teaching model often overlooks students' differences and affects their learning outcomes and interests. Curriculum design is usually based on current needs and educational policies, but the continuous changes in teaching environment and methods often affect the actual effectiveness of curriculum design. Therefore, the curriculum often lacks sufficient flexibility and adaptability. Some schools and institutions have rigid curriculum settings that focus on imparting knowledge while neglecting the cultivation of practical operations and comprehensive abilities. Therefore, students often lack practical experience and personal ability improvement. Some schools and institutions have knowledge gaps or insufficient teaching in certain subjects in their curriculum. This situation will lead to students spending more time and effort outside of class to fill these knowledge gaps. Therefore, addressing the cultivation of comprehensive abilities is a problem that needs to be addressed, and the function of the task treasure is to test the effectiveness of students' course learning.

2) Many data competition platforms have emerged in China, such as Tianchi under Alibaba Cloud, DataFountain incubated by Chinese Academy of Sciences, and DataCastle founded by University of Electronic Science and Technology of China. Especially after Google Cloud acquired the world's leading data science, machine learning developer community and competition platform Kaggle last year, the big data competition platform presented a thriving scene. However, how stable and sustainable is the market space for data competitions, what is the industry outlook, and how to achieve commercial monetization are the issues that organizers and operators of all data competition platforms need to face. The lack of competition platforms in the May Fourth Commune is an urgent issue that needs to be addressed.

The majority of respondents believe that the interface is simple, easy to understand, and aesthetically pleasing, as both the student user group and the teacher user group have a high recognition of interface aesthetics; The operation of the interface is smooth and stable, and can respond to user actions in a short period of time. And the layout of the interface and the selection of elements are

professional, in line with visual psychology. In addition, the student user group also believes that the online learning platform of the May Fourth Commune has abundant course resources, and the respondents have high selectivity in courses in the same field, including public courses, professional courses, interest courses, and vocational training courses, which can meet different learning needs. In addition, the teaching modes provided by the May Fourth Commune are also quite diverse, including online live streaming courses in different fields and new tutoring functions. Therefore, this article believes that recruiting more teachers to complete the production and development of more course resources can improve the learning efficiency of the May Fourth Commune online learning platform and solve current problems. In addition, through this survey, it was found that in the use of online learning platforms by students, due to the lack of interaction in the learning process of online learning platforms, it is difficult to effectively supervise and evaluate the learning situation, resulting in difficulty in ensuring the quality of learning; The presentation of course content on the May Fourth Commune online learning platform is relatively single, mainly in the formats of text, images, videos, etc., lacking more high-quality and innovative methods. This is also a manifestation of the lack of practical links among students. Many online learning platforms lack practical links in their courses, which cannot provide students with practical opportunities and help them apply theoretical knowledge to practical life. At the same time, online learning platforms, due to their single communication method, mainly using dialogue for text communication, resulting in low communication efficiency between teachers and students and inability to provide instant answers to all students. There is also a lack of social design in the online learning platform of the May Fourth Commune. Due to the fact that the online learning mode is usually a personal learning mode, it is difficult to meet the interaction and exchange between students and peers, which affects students' learning experience and interests.

3) Improvement Summary

3.1) Can meet the needs of personalized teaching by teachers and individualized learning by students

Firstly, the platform should have flexibility and openness, allowing teachers to add, delete, and integrate existing resources according to their teaching goals and styles, and optimize teaching design with the operational functions provided by the platform, thereby customizing their own exclusive classroom. For example, on the MindTap platform, teachers can edit or hide existing text or videos on the platform, add annotations to the key and difficult points of this chapter, and share them with student. Teacher can also use the App in the application panel to import external resources, such as adding news links or videos through the "RSS Feed" App, and through the "My Content" app to import PPT, texts, Excel sheets, PDF documents, etc. as additional materials for the classroom.

Secondly, the platform should be equipped with diversified and hierarchical learning resources to facilitate students to develop learning plans according to their own habits and learning abilities; It should also have online testing and instant functions, so that students can independently test their mastery of relevant knowledge points. For example, the Adaptive Test Prep module on the MindTap platform allows students to select the content of any chapter in the textbook to customize individual test papers (for each knowledge point, there are a large number of alternative questions, and the questions for each test are randomly generated based on a massive question bank in the backend). After completing each online test, student will receive precise and immediate feedback, including ratings, error analysis, clear guidance on corresponding points in the textbook, and even a teacher’s explanation videos called "Quick Coach". This type of adaptive tests can be repeated countless times until students confirm mastery.

3.2) Capable of process recording, achievement display, task reminder, and supervision functions

To build a successful online learning platform and complete a closed-loop teaching process, a learning task tracking system and analysis tools are essential. On the one hand, teachers can assign learning tasks through the platform, such as learning content, requirements and deadline, and understand the progress of students' self-study through background management software, so as to give timely

learning diagnosis and suggestions; On the other hand, task reminders, study calendars and other learning AIDS help students to complete their learning tasks more effectively。 For example, on the MindTap platform, the "Aplia" App can help teachers generate detailed analysis reports on students' progress on tasks; "Pathbrite" App can build students' personal files, record and display students' learning results through documents, pictures, videos and other forms, and save and share students' process of learning knowledge and skills.

3.3) Diversified evaluation function

In order to establish a scientific and effective comprehensive evaluation system, the teaching platform should have multiple evaluation functions 。 It should pay attention to both the learning result and the learning process. It should not only have automatic evaluation and scoring functions, but also leave enough flexibility for teachers in the scoring mechanism and evaluation system. In addition, the platform should also have an analytical function, which can be used to summarize, analyze and calculate the data from all aspects in the future, and then give a comprehensive evaluation report.

Again, let's take the MindTap platform as an example. The "Progess" App on the platform can not only record students' scores on homework, unit tests and other learning tasks, but also generate a class score book. It can also generate a scatter chart on the relationship between students' scores on a certain learning task and their participation and time spent. And see if the performance of the class as a whole or the performance of an individual student is significantly above or below the average.In addition, the platform also gives teachers enough flexibility in the evaluation system. For example, teachers can classify learning tasks and assign different grading weights to different types of tasks; Teachers can also manually grade certain learning tasks. After completing these Settings, teachers submit to the system, which generates a final grading and analysis report.

3.4) The ease of knowledge acquisition

In order to facilitate self-learning, many international education publishers have developed mobile applications associated with their e-learning

platforms, such as Pearson's REVEL mobile App and Cengage's Cengage mobile App. Such apps enable students to access platform resources anytime and anywhere, complete exercises and online tests, and flexibly switch between devices such as mobile phones, tablets and laptops, thereby enhancing students' course engagement and learning efficiency.

3.5) Electronic textbooks-- function extension of paper teaching materials

In order to facilitate students' independent learning, electronic textbooks with paper textbooks are obviously one of the necessary resources for online learning platforms. This kind of electronic textbooks should not be limited to the "handling" of the paper textbook content, but can do a lot of function extension, we can call it "enhanced version" of electronic textbooks, or electronic textbooks with interactive functions. At present, many international publishers and publishing and sales groups have developed such electronic textbooks to optimize the user's reading experience. For example, the most central resource on the MindTap platform is its Interactive Book. Not only will students be able to read online, but they will also be able to look up dictionaries, highlight and add notes to the e-book (those highlighted content will be stored in a personal study center called StudyHub, where it can be viewed and reviewed at any time). In addition, students can also use the ReadSpeaker function of the e-book to meet the desire to "listen to the textbook" anytime and anywhere.

3.6) Derived resource

Besides the enhanced version of electronic textbooks, diversified derivative resources developed on the basis of textbook content, such as animation, audio and video, interactive simulation, etc., are the biggest features of online learning platforms. The publisher develops the relevant digital content simultaneously with the determination of the core text content of the textbook (often when reviewing the proofs), and then the editorial team select the key and difficult points of the textbook, after that the author and the technical team work together to develop a diversified form, and finally the editorial team approves and goes online.

The specific type of derived resources should be developed according to the characteristics of different disciplines and courses。 Take economics as an example, the difficulties for students in the process of self-study may lie in: many concepts in economics are abstract and not easy to understand; Many theories or models need to be illustrated with graphical tools; It takes a lot of calculation. In view of the above characteristics, on the MindTap platform that is compatible with the "Principles of Economics" course, the publisher has designed the following featured resources: First, the animated short film named "Concept Clip", each short film explains an abstract economic concept in a vivid and intuitive way. The second is Video Lessons with Quick Quizzes, which are interspersed with multiple choice questions. Students watch the videos and answer them as they learn, testing their understanding of concepts to decide whether to move on or relearn. The third is a learning tool called Graph Builder, which allows students to see how the complex economic graphs in the textbook are built step by step, or to draw them themselves. The fourth is the explanation Video titled "Video Problem Walk-through", which shows the calculation and solving process step by step for typical problems in this chapter.

Due to the characteristics of visualization and interaction, these derived resources can replace the blackboard writing function of teachers to a certain extent, so as to realize the purpose of flipped classroom.

3.7) Other complementary and expanded learning resources

Besides electronic textbooks, audio and video, interactive simulation learning tools and other content, the platform should also be equipped with other complementary and expanded learning resources according to the characteristics of different disciplines and courses. For example, extended chapters and data materials that cannot be reflected in paper textbooks due to space limitations; Teaching AIDS developed for textbooks include homework question bank, self-test question bank, study guide opens to students, and exam question bank open to teachers, PPT, teacher guidance manual, etc. These resources not only require a large number of

supports, but also require high accuracy and adaptability, usually need to be completed with the help of professional teaching and development teams.

4.2 Optimization of the MAY FOURTH COMMUNE Online Learning Platform

4.2.1 Task Treasure Platform

Task Treasure Platform is a task docking platform that integrates task publishing, task undertaking, and knowledge services. It builds a mutual trust platform between college students and enterprises, and enterprises publish knowledge service tasks such as WeChat promotion, self media promotion, logo design, product design, and tweet writing on the platform. Students receive compensation after taking on tasks and completing services.

1) Introduction of the front desk

A high-quality user experience platform needs to have a reasonable and perfect layout setting, good layout, which can facilitate user operation and enhance the interaction between users and the system. The homepage module of Task Treasure shows the web pages that users can click to jump to mainly include user login, task hall, and personal center.

After the user login can undertake all tasks in the task hall, the system supports WeChat and QQ login; The task hall contains three categories, and each category contains several sub-categories, namely, e-commerce entrepreneurship tasks, WeChat promotion tasks, and we-media promotion tasks; The Personal center includes task publishing, order management, and user center.

After opening the system, it defaults to the system homepage, the homepage is shown in Figure 3**:**

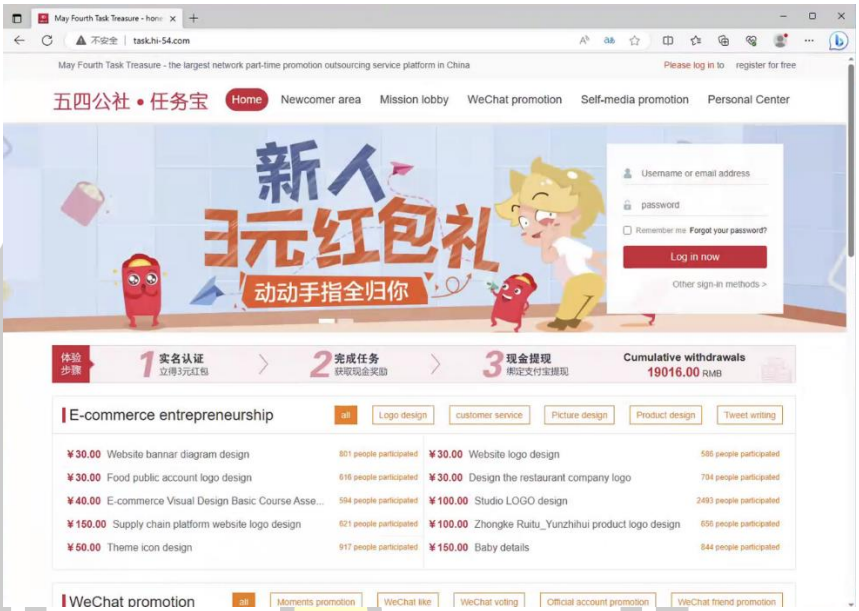


Figure 3 Task Treasure Homepage

2.Task Hall Design

Click on "Task Hall" in the main menu of the system to view all task information on this platform. As shown in Figure 3:

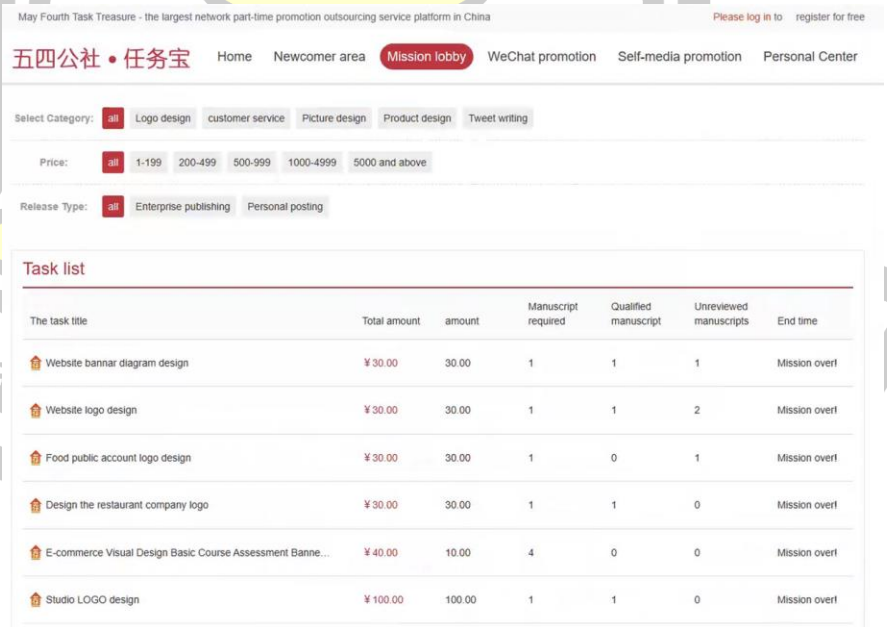


Figure 4 Task Hall

Among them, selecting a type can filter tasks by task subcategory. Tasks can be filtered by price through price ranges.

The task information displayed in the task list includes: task title, total amount, single piece amount, required number of articles, qualified articles, unapproved articles, task end submission time, etc. Click on the task title to enter the task display page to view task details.

3) Personal Center

The personal center includes three items: publishing task, order management and user center. To publish a task, the user selects the corresponding entry based on the task type to be published and fills in the task requirements to publish the task. Order management includes the tasks I undertake, the tasks I post, and my collections; The user center contains the user information and I want to recharge, the user can withdraw money in the face of the commission in the profile, but also can recharge in order to post tasks.

(1) Publish tasks.

In the left navigation of the personal center, under the category of "task management", there are three task publishing portals, namely "publishing e-commerce entrepreneurial tasks", "publishing WeChat promotion tasks" and "publishing self-media tasks", as shown in Figure 5:

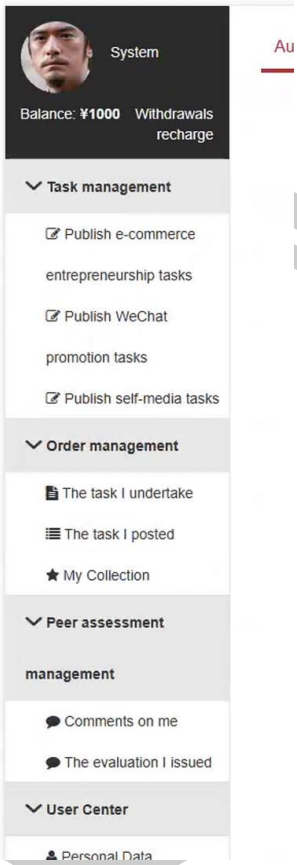


Figure 5 Personal Center

Select the corresponding entry based on the type of task to be published, click to enter, as shown in Figure 6:

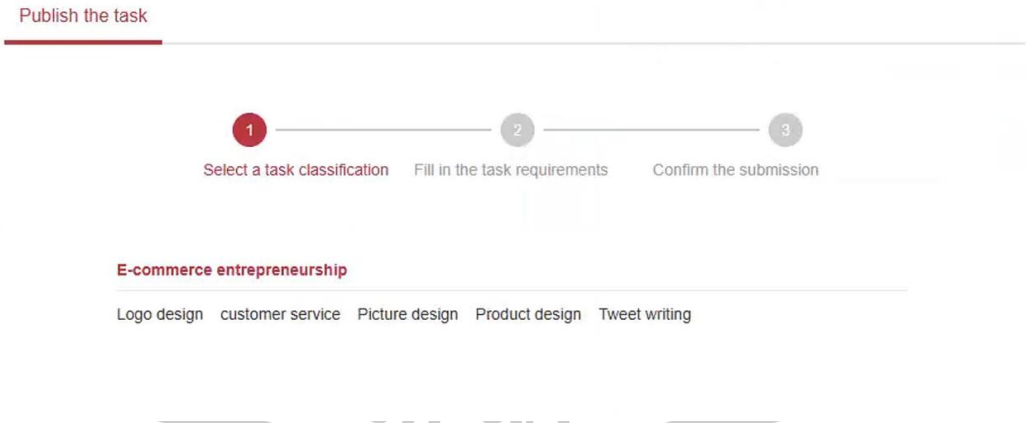


Figure 6 Publish tasks

The first step is to select the secondary classification of the task to be published, and click on the classification name to proceed to the next step.

The second step is to fill in the task requirements, the page is shown in Figures 7:

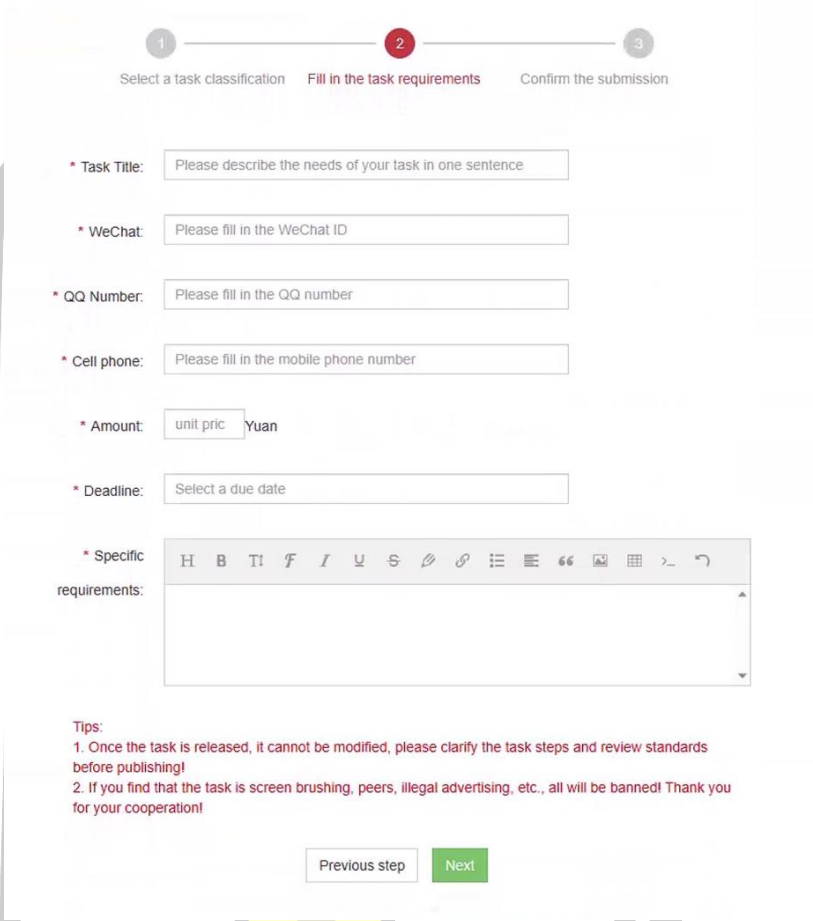


Figure 7 Task requirements

The task requirements include the following content: task title, WeChat account, QQ number, mobile phone, unit price, number of copies, deadline, and specific requirements.

Special instructions:

(1)Once the task is published, it cannot be modified. Please clarify the task steps and review standards before publishing!

(2)If the task is found to be screen swiping, peer-to-peer, illegal advertising, etc., all accounts will be banned! Thank you for your cooperation!

After filling out the task requirements, click the "Next" button to enter the third step.

The third step is to confirm the task information. This step will calculate the amount to be consumed for the task based on its unit price and number of copies. If the amount is insufficient, the task cannot be published. You need to recharge before publishing the task. After confirming that the information is correct, click "Confirm Submission" to complete the task release. As shown in Figure 8:

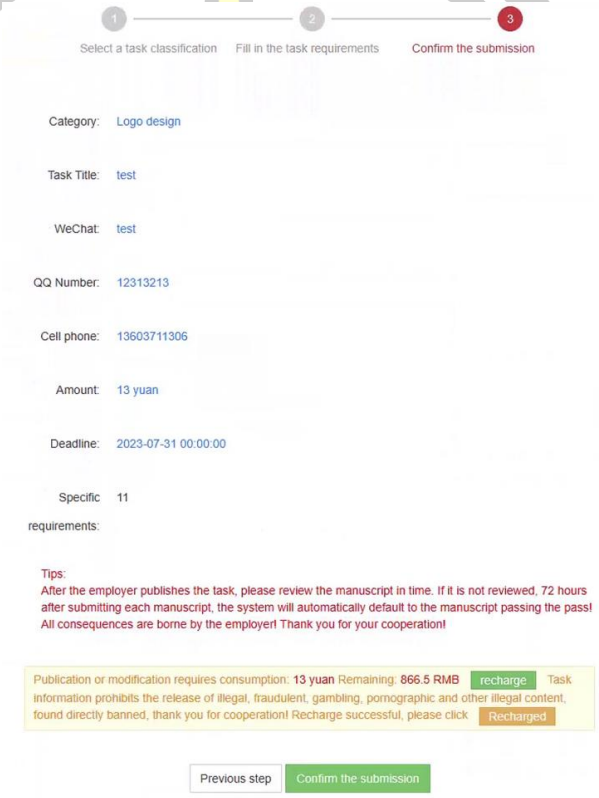


Figure 8 Confirm Task

2)Click on the "Tasks I Undertake" menu on the left to enter the task viewing page, As shown in Figures 9:

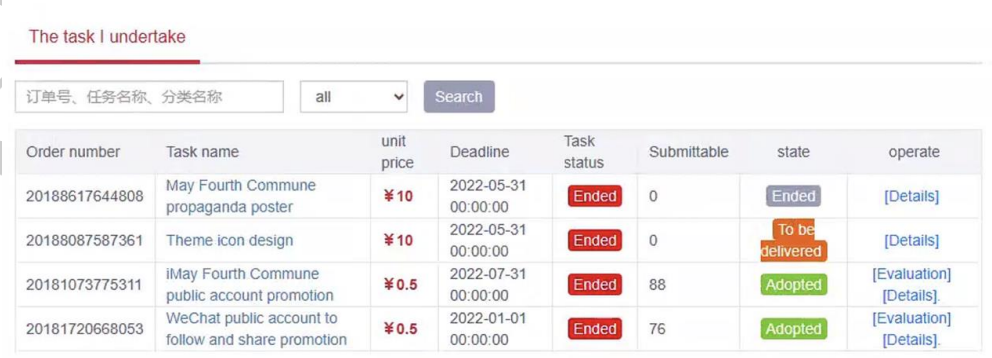


Figure 9 Tasks I Undertake

This page displays all tasks undertaken in a list format and displays the current status of the tasks. You can search by order number, task name, classification name status, and other criteria.

The tasks have the following statuses in order: pending delivery, delivered, adopted, not adopted, and ended.

Click on the "magnifying glass" icon in the list operation column to view task details.

If the current task status is "to be delivered", click the edit button in the operation column to submit the manuscript content. As shown in Figures 10. The submission content mainly includes description of the manuscript, screenshots of the manuscript (multiple copies can be uploaded), and attachments to the manuscript.

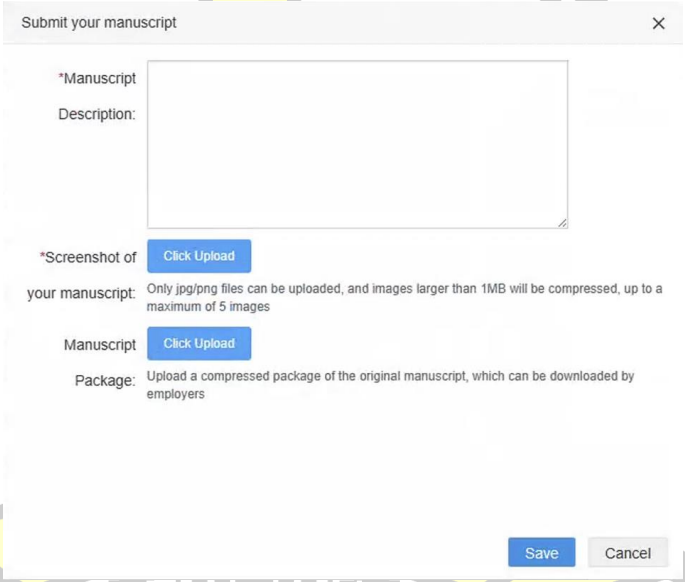


Figure 10 Submit manuscript.

3) Tasks I Published

Click on the 'Tasks I Published' menu to access the management page for my published tasks. This page displays the status of all published tasks in a list format, as shown in Figures 11:

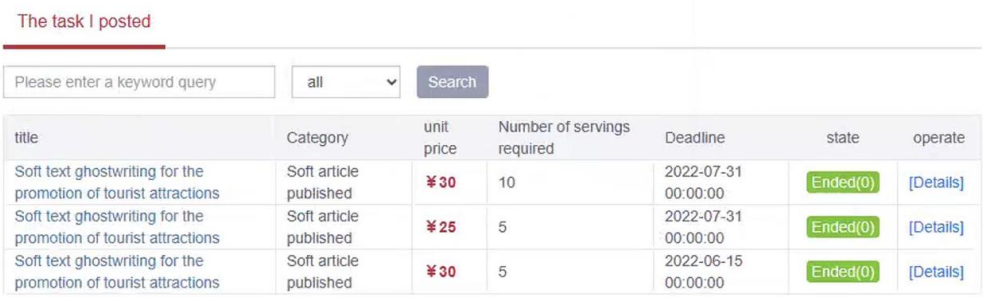


Figure 11 Tasks I posted.

You can filter by task title and task status.

If the task status is in submission, the current number of submissions will be displayed in parentheses after the status.

Click the view button in the operation column to enter the selection page. As shown in Figures 12. The selection page displays information such as the total number of submissions, the number of articles to be reviewed, the number of accepted articles, and the number of unaccepted articles.

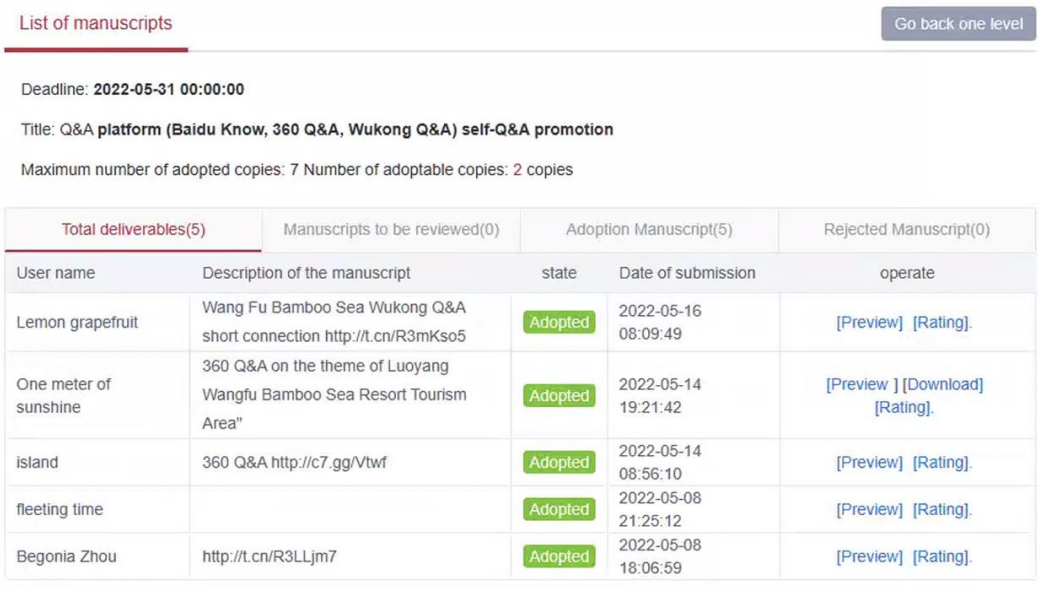


Figure 12 List of manuscripts

Click the view button after the manuscript to view the details of the manuscript and proceed with the review operation.

4) My Collections

Click on the navigation bar 'My Favorite' to open the page, displaying all favorite tasks and task status, as shown in Figures 13:

Figure 13 My Favorite

You can search by task category, task subcategory, and task name.

5)Personal Information

Click on the left menu "User Center">"Personal Information" to enter the data management page, as shown in Figures 14. This page is divided into three tabs: basic information, Alipay account and Alipay withdrawal.

The default basic information page is in viewing status. Click Modify to enter modification mode.

The system needs to bind Alipay to withdraw cash and click the "Alipay Account" tab to bind.

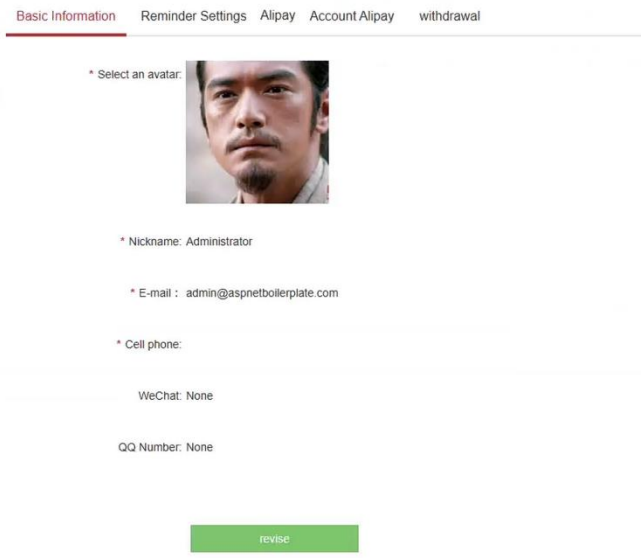


Figure 14 Personal Information

6) Recharge

Click on the menu "User Center">"I want to recharge" to enter the recharge interface, as shown in Figures 15:

Figure 15 I want to recharge.

After selecting the recharging amount, click the "Confirm recharging" button to call up WeChat Pay for recharging.

7) Real Name Authentication

Click the menu "User Center">"Real Name Authentication" to enter the authentication interface, or you can enter the authentication interface through the text prompt "Real Name Authentication" above the home screen of the personal center, as shown in Figures 16 and 17.

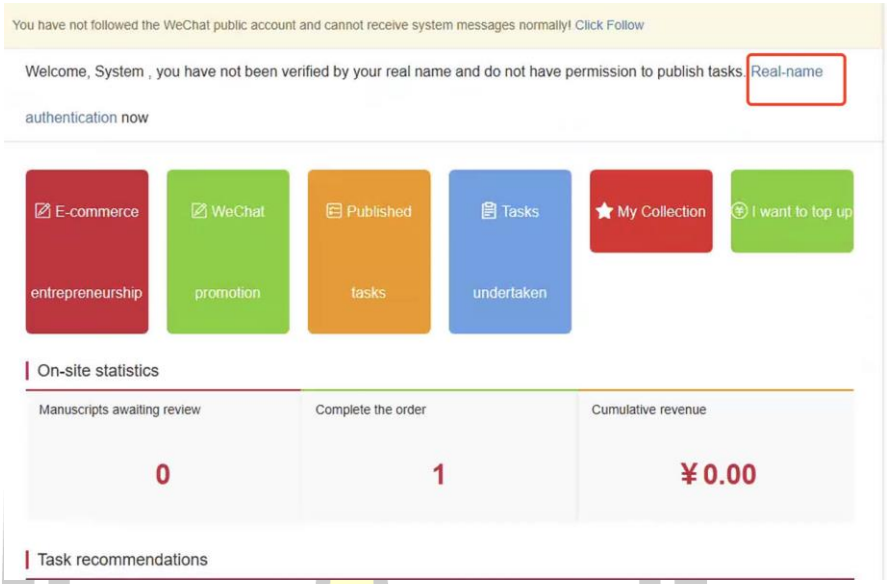


Figure 16 User Center

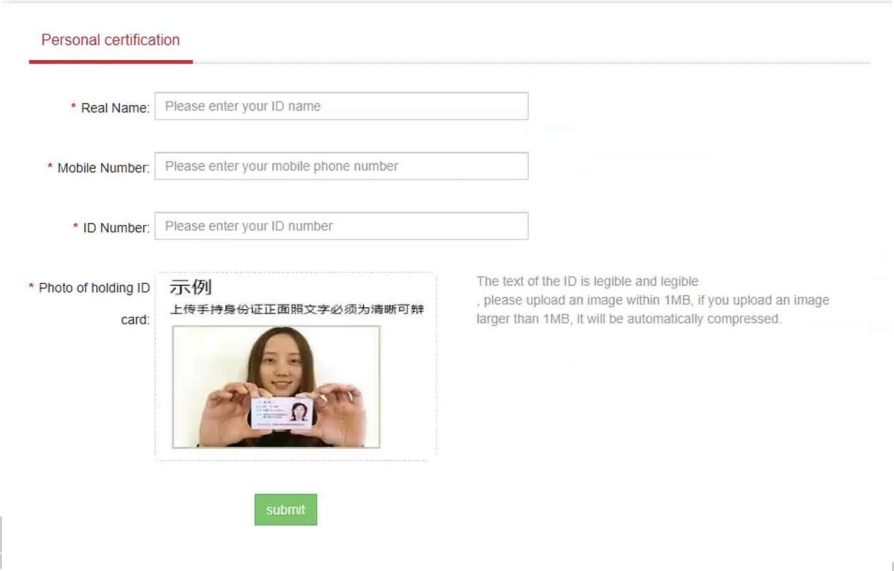


Figure 17 Real Name Authentication

8) Bill Management

Under the menu "Bill Management" on the left side of the personal center, you can view the operation records on the platform, including recharge records, consumption records, reward records, withdrawal records, etc. The interface is shown in 18:

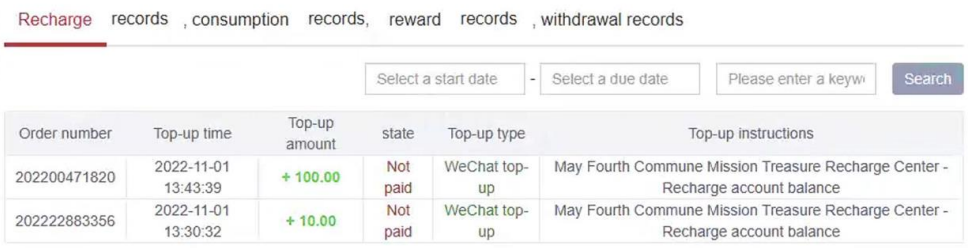


Figure 18 Bill Management

Click on the tab to switch between each record. You can filter records by date.

9) Release Flyer

Click on "Flyer Management" ->"Publish Flyer Task" in the left menu to enter, as shown in 19:

Figure 19 Publish Flyer

The flyer requirements include the following content: flyer title, number of readings, unit price/copies, deadline, distribution channel, upload cover, and content introduction.

Special instructions:

1. Once the flyer is published, it cannot be modified. Please clarify the task steps and review standards before publishing!

2. If the task is found to be screen swiping, peer-to-peer, illegal advertising, etc., all accounts will be banned! Thank you for your cooperation!

After filling out the flyer requirements, click the "OK" button to enter the verification page.

Check the page for flyer information confirmation. This step will calculate the amount to be consumed for the flyer based on its unit price. If the amount is insufficient, the flyer cannot be released. It needs to be recharged before releasing the flyer. After confirming that the information is correct, click "Confirm Submission" to complete the flyer release. As shown in Figures 20.

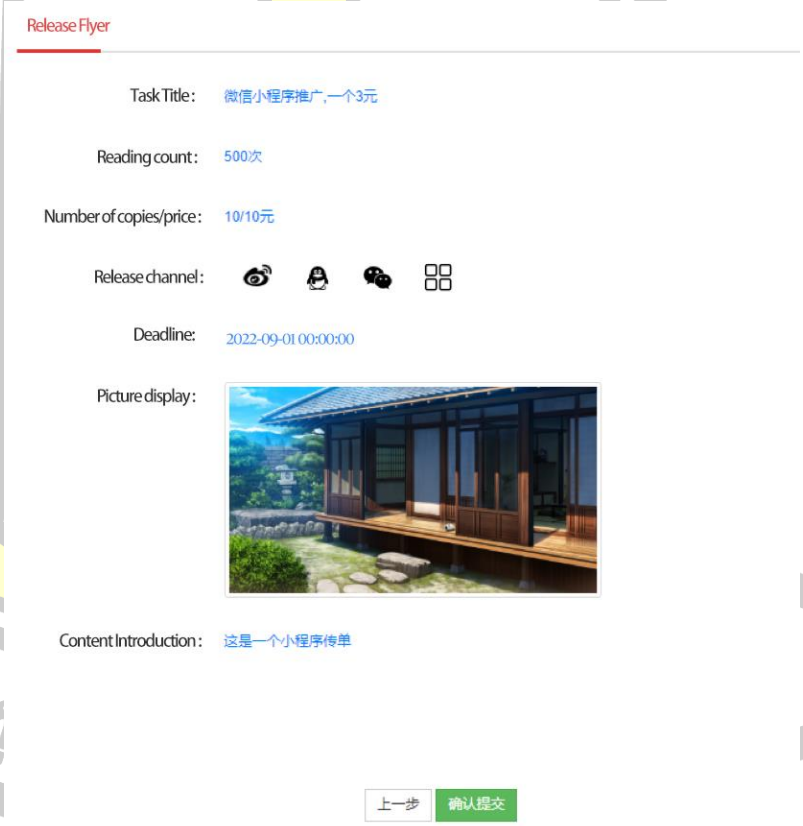


Figure 20 Release Flyer

If the information is incorrect, you can click on the previous step to modify it.

10) My Business Opportunities

Click on "My Business Opportunities" in the menu to enter as shown in Figure 21.

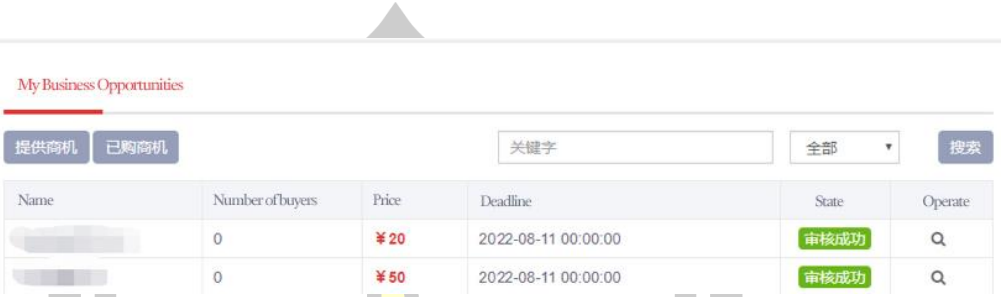


Figure 21 My Business Opportunities

The created business opportunity information is displayed, including name, number of buyers, price, deadline, status. Approved business opportunities can be viewed by clicking on the 'magnifying glass' in the operation bar.

The button "Search" in the upper right corner filters names and statuses, and there are two buttons in the upper left corner: "Provide Opportunities" to create a new opportunity, as shown in Figure 22:

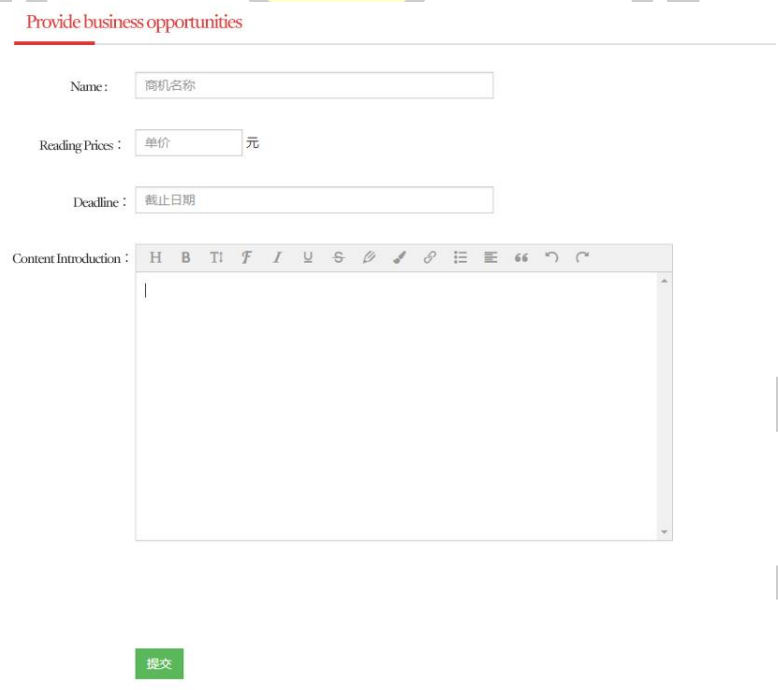


Figure 22 Provide Opportunities

The business opportunity requirements include the following content: business opportunity name, reading price, deadline, and content introduction.

Special instructions:

1. Once a business opportunity is published, it cannot be modified. Please clarify the business opportunity steps and review standards before publishing!

2. If any business opportunities are found to be tampering with others, screen swiping, peers, illegal advertising, etc., all accounts will be banned and dealt with! Thank you for your cooperation!

The other button 'Purchased Opportunities' is shown in Figure 23:

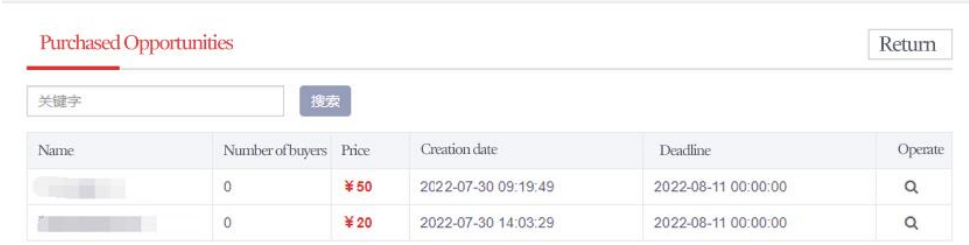


Figure 23 Purchased Opportunities

Display the purchased business opportunities. By clicking on the "Post a Mirror" button in the operation bar, you can view the specific content of the business opportunities, the comments of the purchased buyers, and post comments. As shown in Figures 24:

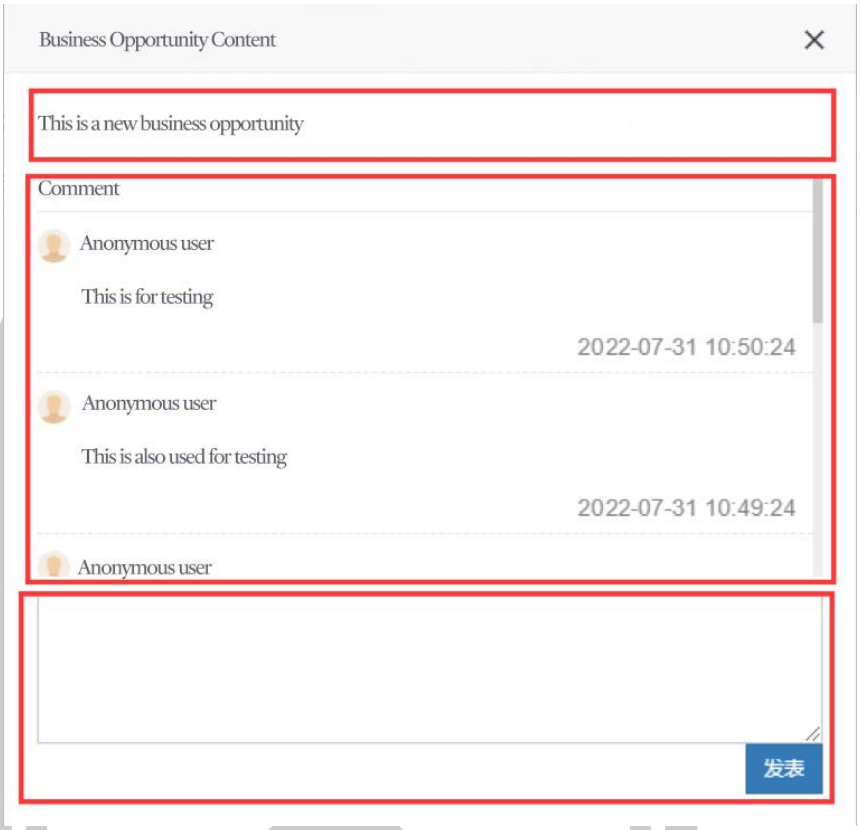


Figure 24 Business Opportunity Content

11)View all business opportunities

Click on the menu "View all business opportunities" to enter, as shown in Figure 25:

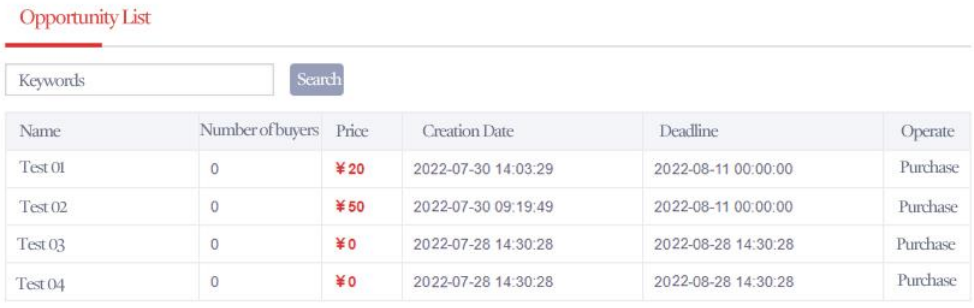


Figure 25 Opportunity List

Display and approve all opportunities created by users, including name, number of buyers, price, creation date, and deadline. After successfully making the payment by clicking 'Purchase', it will automatically jump to 'Purchased Opportunities' for viewing.

This page displays all tasks undertaken in a list format and displays the current status of the tasks. You can search by order number, task name, classification name status, and other criteria.

12) My Clues

Click on the menu 'My Clues' to enter, as shown in Figure 26:

This page displays all user created leads in a list format and can be searched by name and introduction criteria.

Figure 26 My Clues

In the upper left corner, enter "Add Clue", as shown in Figure 27:

The clue requirement includes the following contents: clue name and content introduction.

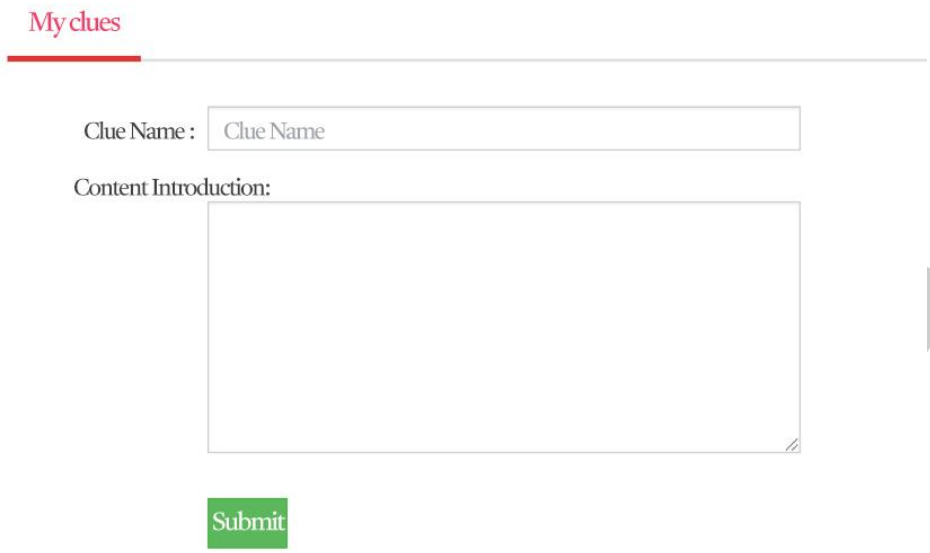


Figure 27 My clues

4. Task Management

Task management is the process of organizing, distributing and tracking tasks effectively. It can effectively help users to achieve the efficient completion of tasks, improve work efficiency, and achieve the expected goal. There are various methods and techniques for task management. Users can choose the right task according to the actual situation, which contains all the published tasks. You can classify and search the tasks to facilitate users to access the tasks.

Click on the "Task Management" ->"Task List" column on the left to enter the task management interface; This page displays all task information, which can be classified and viewed through task classification, as shown in Figures 28:

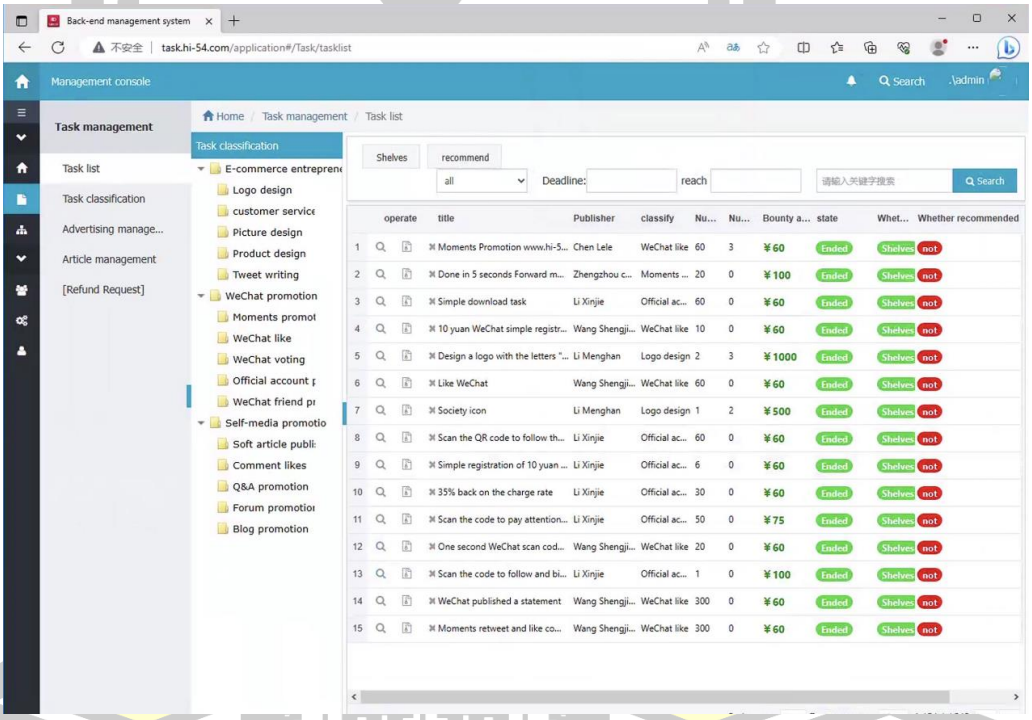


Figure 28 Task List

This interface displays task information in the form of a table, including title, classification, number of copies, reward amount, status, whether to list, whether to recommend, and deadline. The task can be reviewed through the 'magnifying glass' in the' Operation 'column, as shown in Figures 29 and 30:

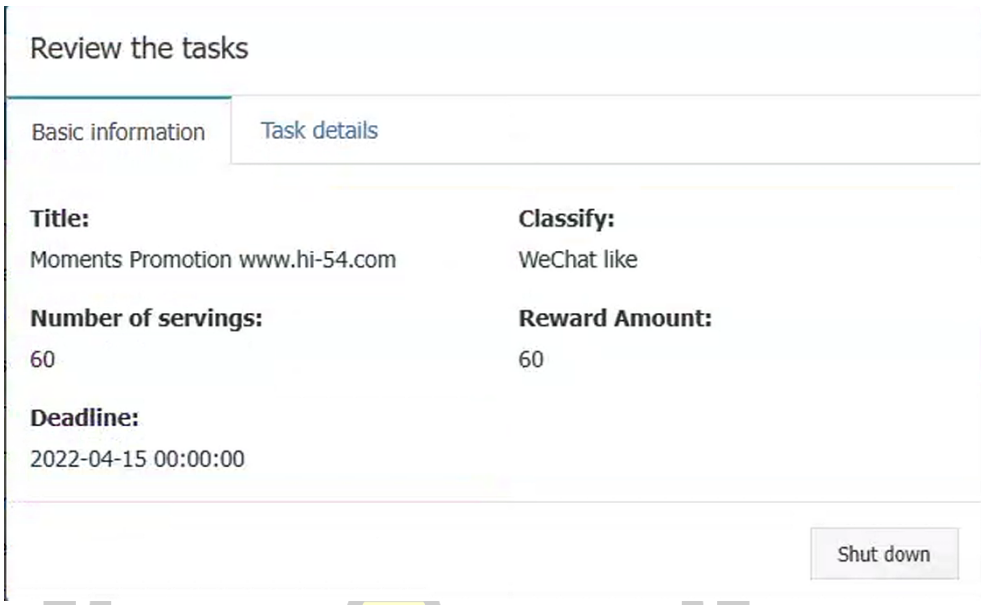


Figure 29 Basic information

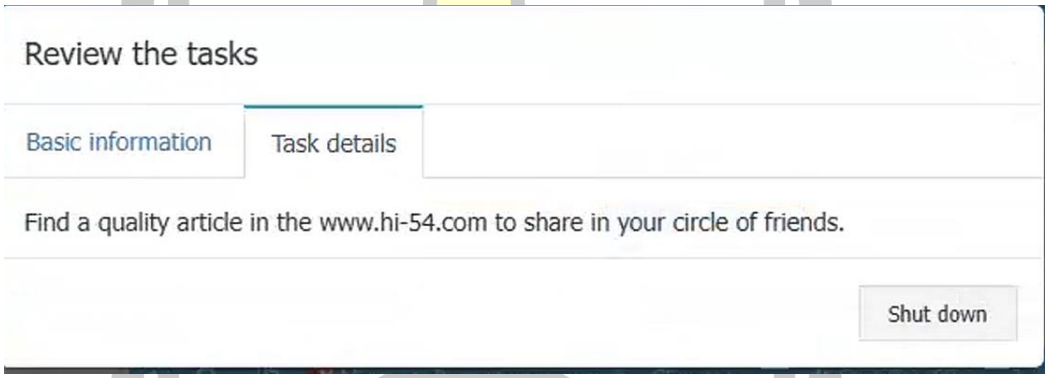


Figure 30 Task Details

The 'Shelves' and 'Recommend' buttons in the upper left corner can be used to go/go and recommend specific tasks; The "Search" in the upper right corner can filter status, deadline, and title. As shown in Figures 31:

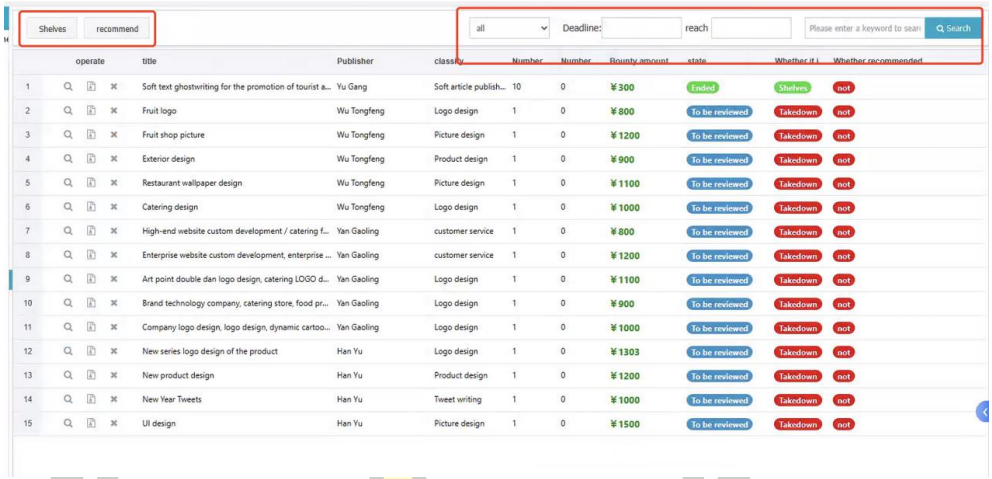


Figure 31 Shelves and Recommend

5. Order Management

Order management is an effective extension of customer relationship management, the tasks published by the user are displayed in it, you can view the completion of the task, you can also pay the task according to the completion of the task.

After successfully publishing the flyer, you will directly enter "My Posted Flyer" or click "Flyer Management" ->"My Posted Flyer" in the menu to enter, As shown in Figures 32:

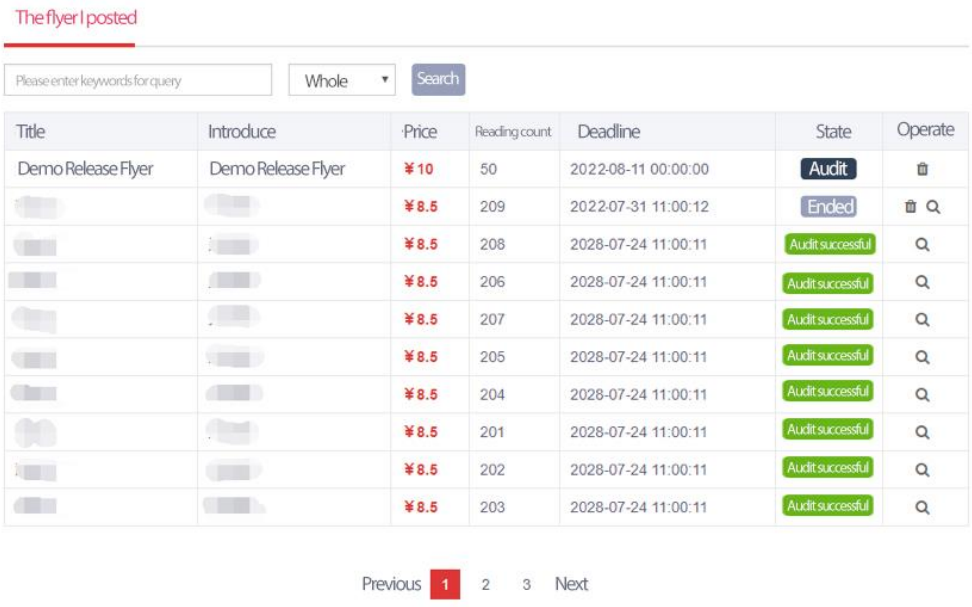


Figure 32 My Posted Flyer

You can filter by flyer title and task status.

The status displayed as' approved successfully 'can be viewed through the' magnifying glass' in the corresponding operation bar, displaying the distribution of the flyer's claimants, visits, and visit time periods, As shown in Figures 33:

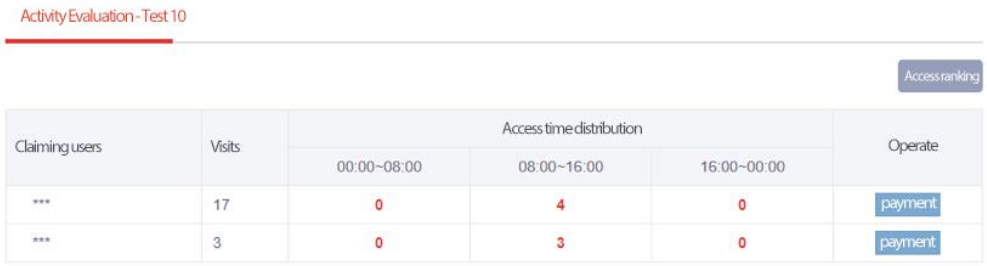


Figure 33 Activity Evaluation

After the traffic meets the requirements, the "Payment Fee" in the operation bar will automatically light up and the user clicks to complete the payment.

Click on the "Access Ranking" button in the upper right corner to enter the ranking of the number of views claimed, As shown in Figures 34:

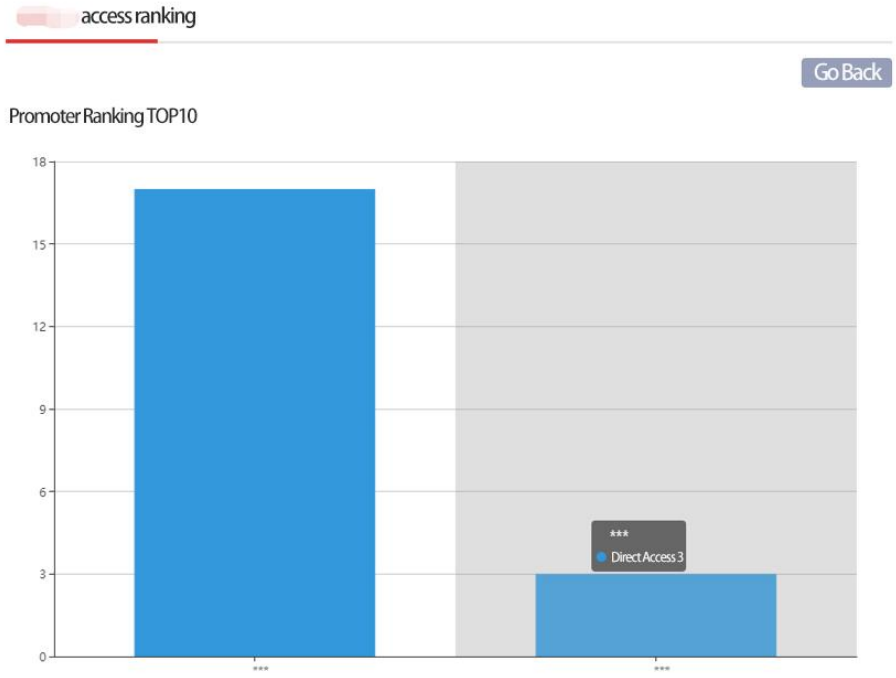


Figure 34 Access Ranking

6. Bill Management

The billing management module contains all the consumption and reward records, and users can view the detailed consumption and reward of each item.

Under the menu "Bill Management" on the left side of the personal center, you can view the operation records on the platform, including recharge records, consumption records, reward records, withdrawal records, etc. The interface is shown in Figure 35:

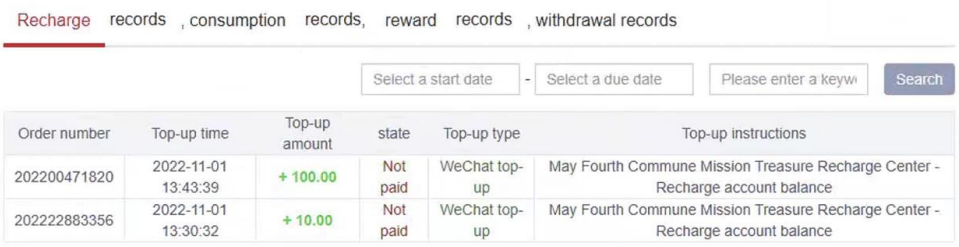


Figure 35 Bill Management

Click on the tab to switch between each record. You can filter records by date.

4.2.2 Competition Platform Design

The competition platform is a skill competition software designed for practical teaching in online marketing and e-commerce related majors. This competition platform is built by teachers themselves, and students can freely participate in the competition. Through the built-in network scoring mechanism, the scores and rankings of the participating works are achieved, thereby mobilizing students' initiative in practice and effectively improving teaching effectiveness.

The system is based on. Net architecture for large distributed applications. It adopts the three-layer architecture of.NET. A variety of system environments can be selected to meet the needs of different types and scales of users. Users can build a suitable application environment according to their actual situation. Combined with operating systems, application platforms or third-party products, we can also build highly secure, high-performance, highly reliable application environments. The application technology based on.NET has become the core driving engine of many

application systems, and this system positioning technology is high-end and fully adopted. Net technical specification. The Web part is developed in MVC mode and provides Restful WebApi interface to support heterogeneous access. Easy integration between other language systems. Using database middleware technology to support MySql, Sql Server, Orecle, mongoDB and other common databases. The cache layer seamlessly switches between redis and memcached cache technologies.

1. Front Desk Design

After entering the platform homepage, a list of all competitions will be displayed, including competition poster images, competition name, competition introduction, competition organizer, and other information. Click on the title of the competition you want to participate in to enter the competition details page. View detailed information about the competition.

(1) Competition Details

After entering the competition details page, as shown in Figures 36. The details page displays the introduction of the competition rules, competition status, and registration status. The competition status is in sequence: preparation, registration, submission, competition, grading, and end.

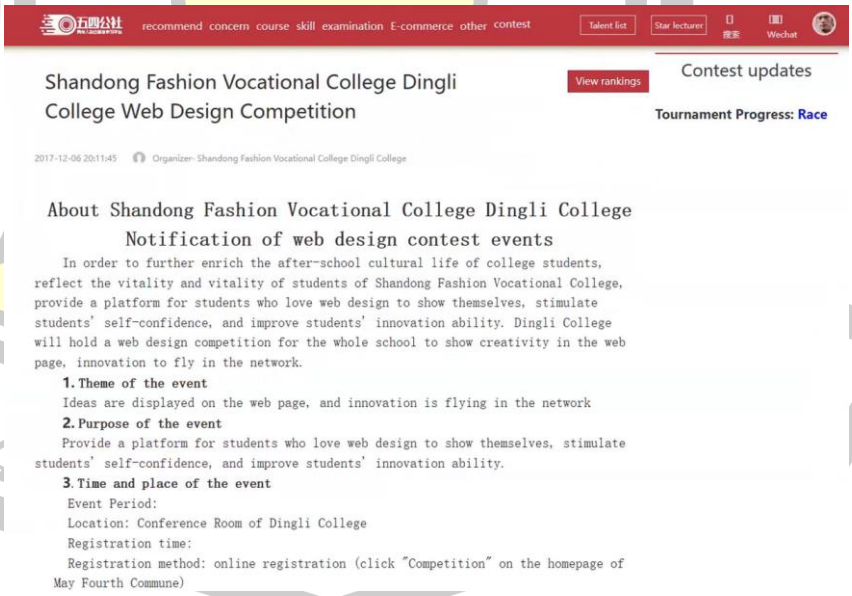


Figure 36 Play-By-Play

2) Works Ranking

Click on the "View Ranking" button on the competition details page to enter the assignment ranking page. The ranking list displays information such as ranking, works name, author, PV, favorites, likes, comments, network comprehensive score, expert rating, total score, etc. As shown in Figures 38:

"Zhengzhou Normal University Self-media Creation and Marketing Competition" - competition ranking Ended

Soft text | Digital photography | Graphic design | Micro-lessons | Micro-video | anime

ranking	The title of the work	author	PV	Number of collections	Number of likes	Number of comments	Network score	Rated by experts	Score
1	May you shine in your own years	Zixuan	12091	0	101	639	69.39	-	41.48
2	Save Single Dogs Project: Know why you are still a single dog and eat dog food every day?	Yingbean	5745	0	149	798	57.62	-	34.91
3	Those cute little days	S17 mobile e-commerce Wen Huiling	1723	0	180	914	50.7	-	30.5
4	Tian Xiaobai, look here!	E-commerce Li Mengyu	3040	0	109	840	46.71	-	28.18
5	A gift from Master Zheng	can	6157	0	70	255	34.57	-	21.04
6	The best time, the most beautiful you	Ann	3813	0	143	219	31.72	-	18.18
7	Graphic Design – Silver Christmas	S17 mobile e-commerce Zhou Yanyan	852	0	90	561	28.73	-	17.3
8	Will you still be there after graduation?	Yijing	1254	0	112	365	25.46	-	15.36
9	Don't say goodbye and miss forever	Move Huo Xinmin	4462	0	37	92	20.86	-	12.82
10	A unique appreciation of the Book of Poetry	Song Jiale	1250	0	61	273	18.18	-	10.82
11	A little beauty that year	S17 Mobile E-commerce - Yan Junjie	935	0	59	299	17.82	-	10.72
12	All encounters are reunions after a long absence	Lv Jing	1017	0	46	242	15.14	-	9.14
13	Memories stuck in the years	E-commerce Zhao Tong	694	0	47	198	12.71	-	7.66

Figure 37 Works Ranking

The calculation formula for the network score of works is set by the management in the background, and the general rules are:

Based on the reading/playback volume, likes, comments, and favorites, a comprehensive rating will be given (where the proportion of various types of data is: 40% of reading volume, 15% of likes, 30% of comments, and 15% of favorites).

3)Works Viewing

Click on the title of the works on the works ranking list page to enter the works details page. There are three types of works: article assignments, album works, and video works. As shown in Figures 38:

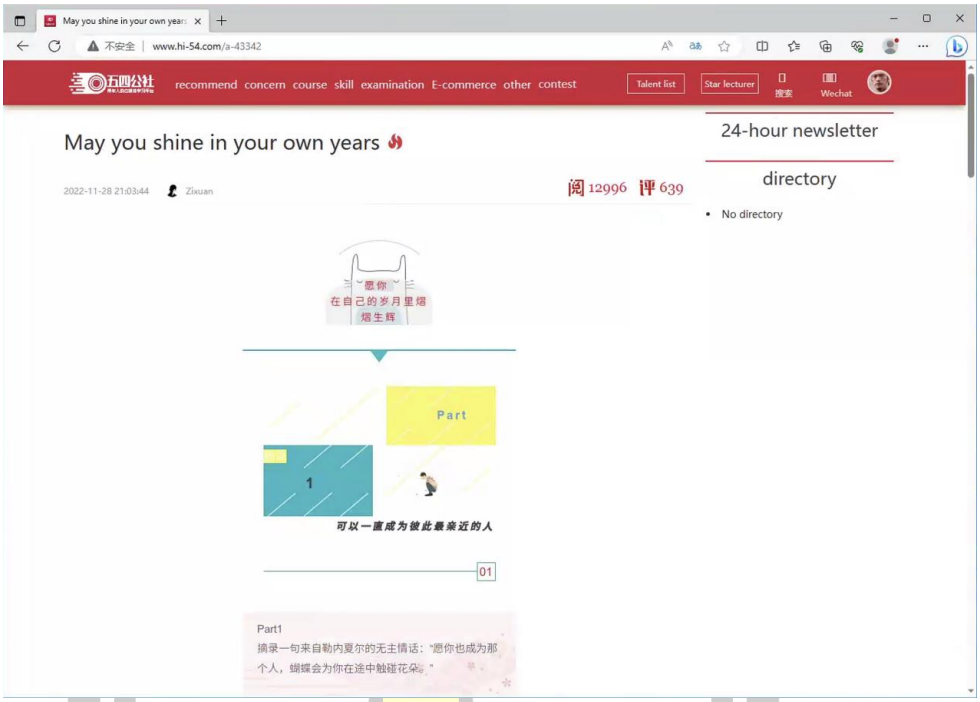


Figure 38 Works Details

The works details page displays the title, content, number of reads, and number of comments of the works. If it is a winning works, a special mark will be displayed on the right side of the title, indicating the winning works participating in the competition.

At the bottom of the works details page, display all comments on the assignment. And new comments can be posted. As shown in Figures 39:

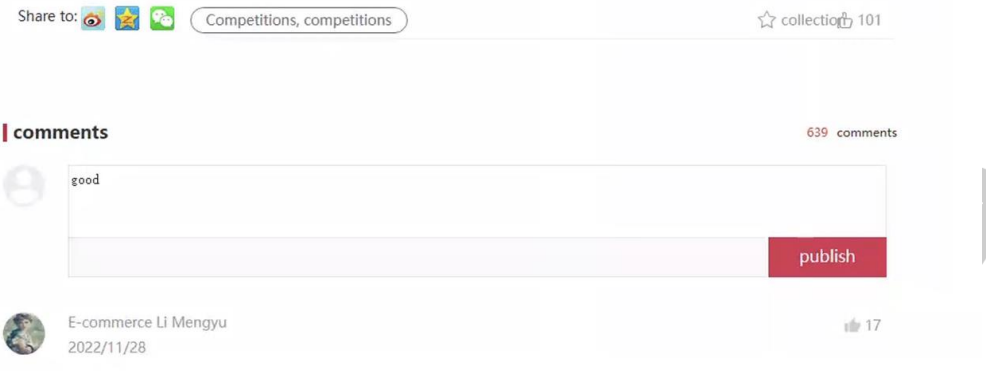


Figure 39 Work Review

You can use the share button to share your work on social media platforms and solicit votes for it.

2. Competition Registration

In the competition details page, if the current status of the competition is in registration, the "Register Now" button will be displayed on the right. As shown in Figures 39:

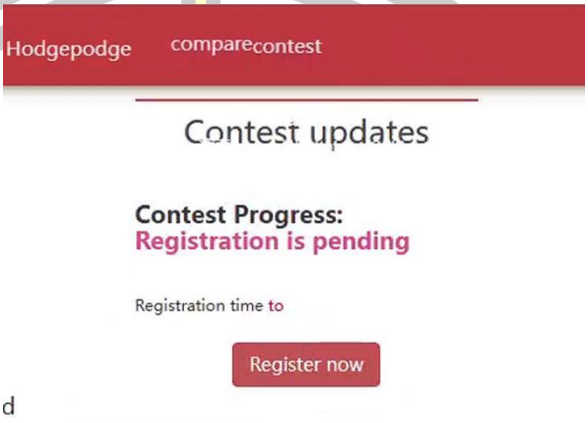


Figure 40 Competition registration button

Click the button to fill in the registration information. As shown in Figures 41:

Registration Content

Profile of Team Leader: name, gender, nationality, age, school, major, contact information, entry project, entry form, personal profile, instructor information, team member information, etc.

The competition forms are divided into individual and team.

If it is a solo competition, there is no need to fill in team member information.

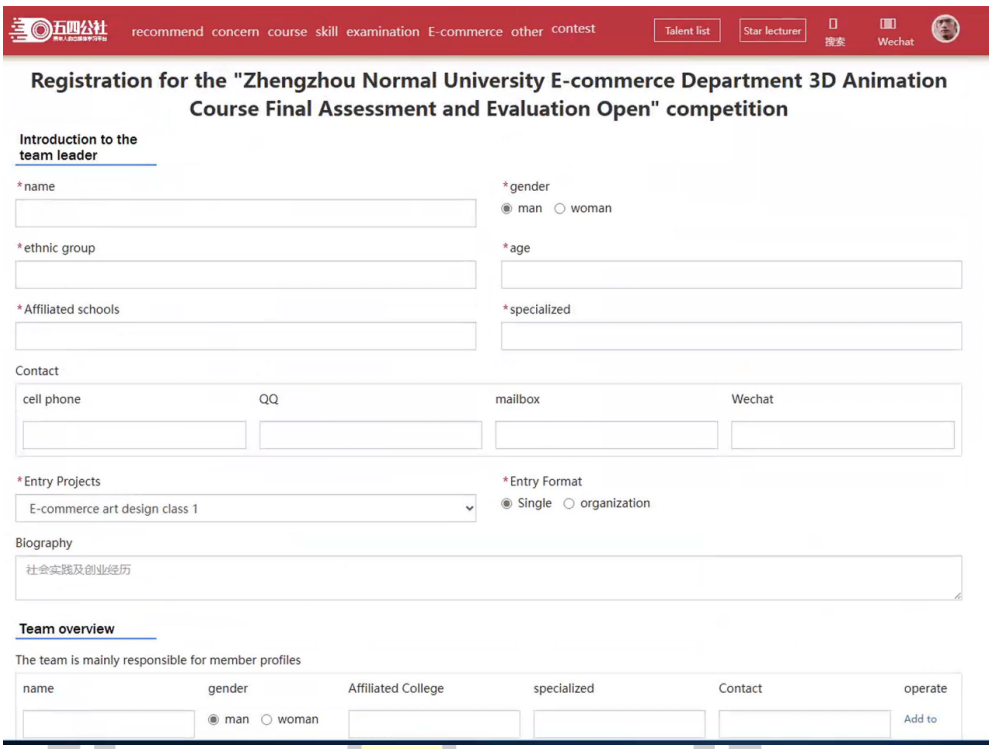


Figure 41 Registration Form

3. Competition Management

After logging in to the system as a teacher, select "Competition Management">"My Created Competition" in the left menu of the personal center to enter the page. As shown in Figures 42:

Click the "Add Competition" button on this page to add a competition.

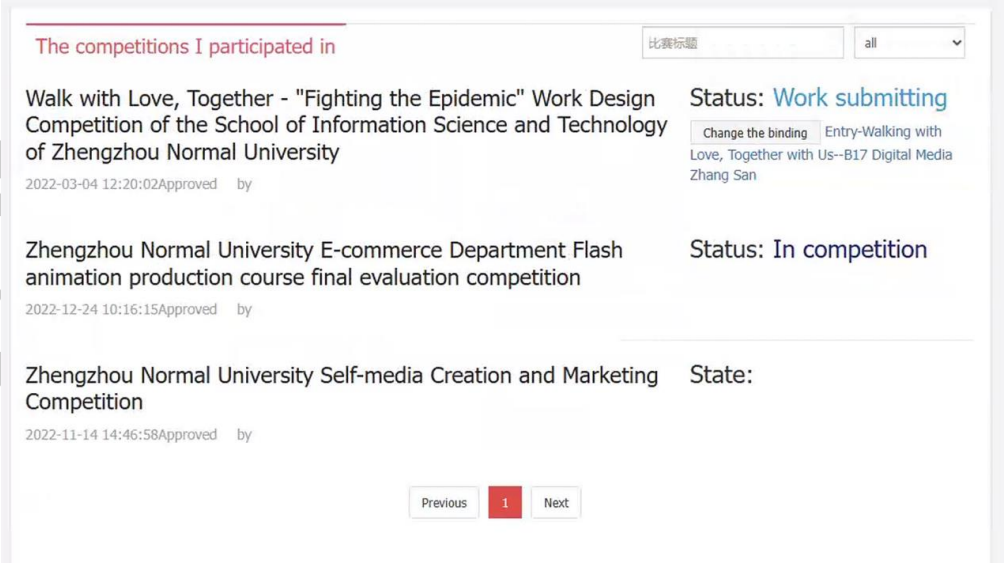


Figure 42 The competition I created.

1)Add a competition

Click the "Add Competition" button and a dialog box will pop up. As shown in Figures 43:

Fill in the competition information according to the requirements of the form, including: competition title, competition logo, competition introduction, organizer, competition branch, status, tags, network score proportion, competition nature, competition invitation code, start time, end time, registration start time, registration end time, work submission start time, work submission end time, competition start time, competition end time, and other information.

One competition can have multiple sub events, with multiple events separated by commas when added.

The nature of the competition can be divided into private and public, and private competitions can only be participated by filling in the correct invitation code.

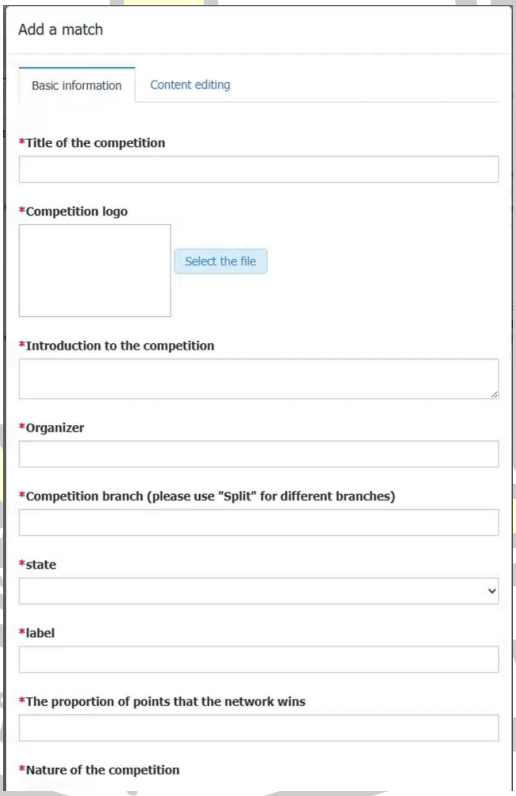


Figure 43 Add Game

2) Competition Maintenance

After adding a competition, the competition list information will be displayed in the table competition list I have created. As shown in Figures 44:

Click on the "magnifying glass" to modify the competition information. Click on "Eyes" to view the competition registration status.

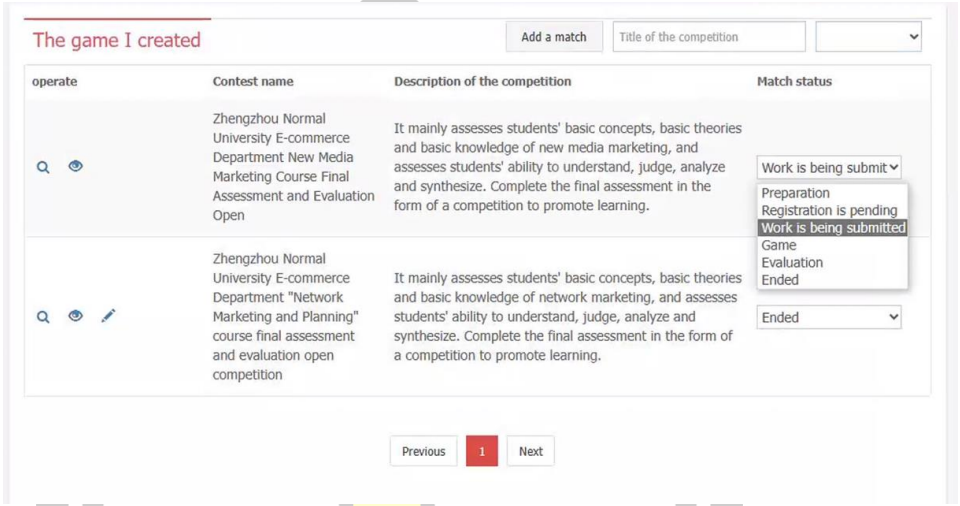


Figure 44 Competition maintenance

4. Background Management Function

(1) Competition List

After the administrator logs in to the back-end, click on the left menu "Competition Management">"Competition List" to enter the page. As shown in Figures 44:

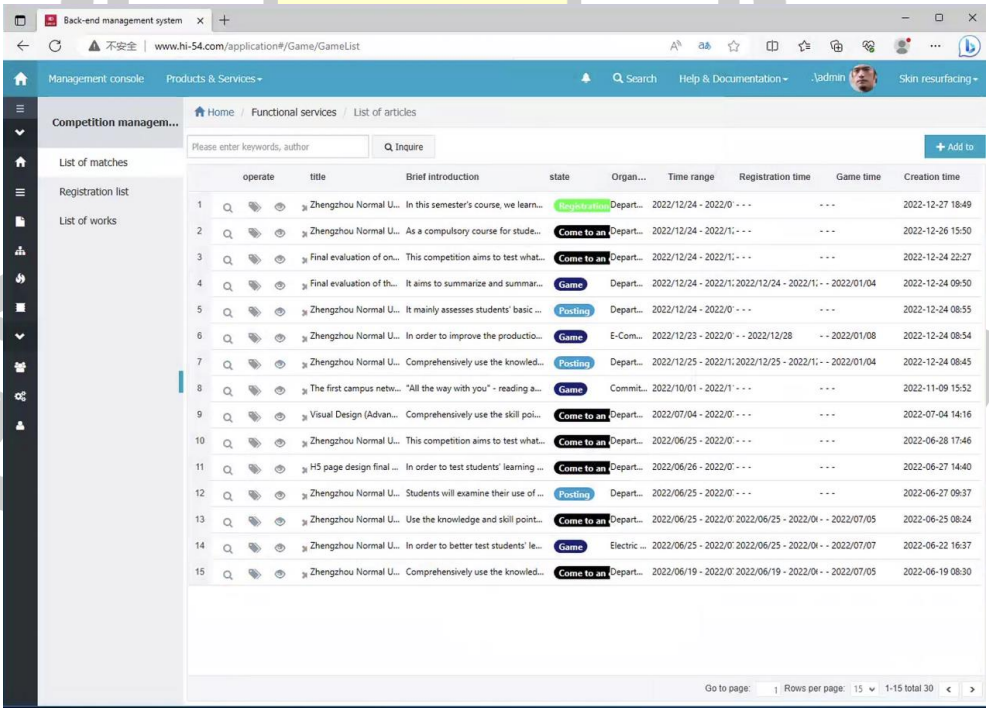


Figure 45 43 Competition List

The administrator can see all competition information here. You can filter by competition name, organizer, and other information. Administrators can directly add competitions in the background using the same method as teachers.

The functions of the operation buttons on the left side of the competition list:

(Magnifier) Modify competition information

(Pen) Generate competition tags: Add ranking tags to competition works

(Eyes) View registration information

(X) Delete Competition

Click to view the registration information and all registration information for the competition will pop up. As shown in Figures 45:

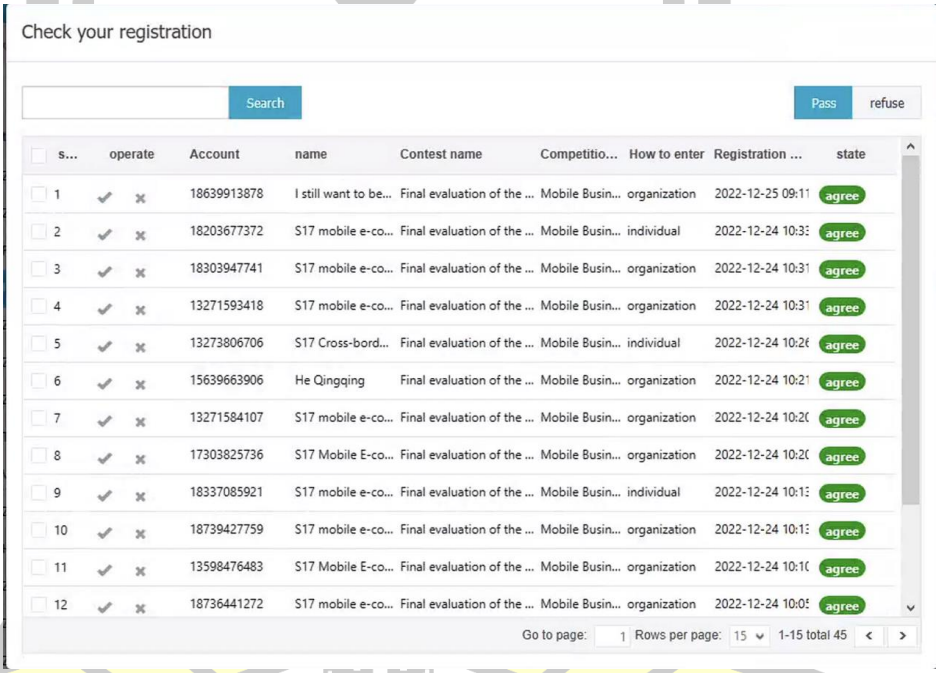


Figure 46 View competition registration information

2)Administrator Reviews Registered Works

On the back-end management end, click "Competition Management">"Registration List" to enter the registration management page. As shown in Figures 46:

The administrator can review the registration information on this page, filter by the competition name, and export all registration information for the competition.

The relevant button functions on the left side of the list are as follows:

"Eyes" view registration information

“check mark” Approved

“X”refuse to participate

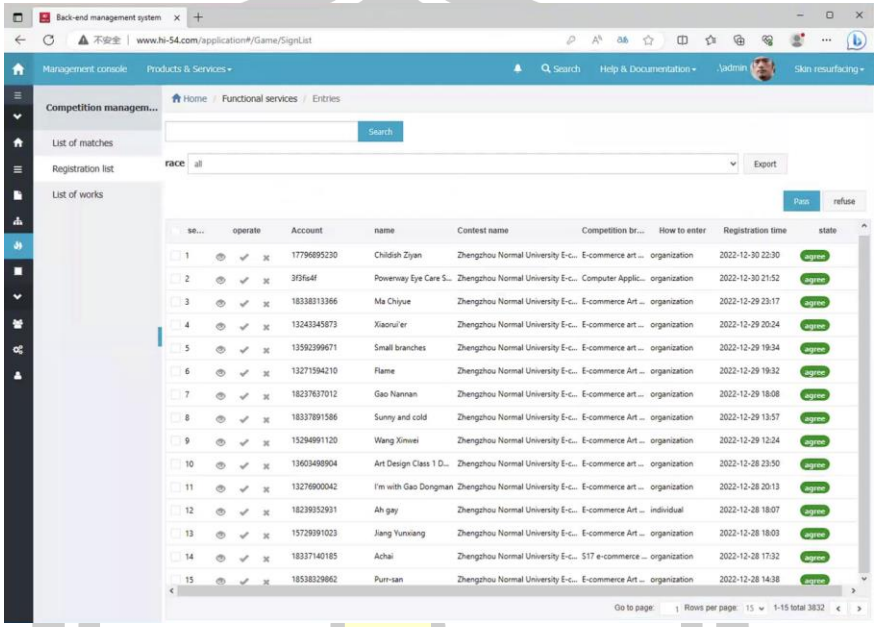


Figure 47 Registration Management

3)Score for Works

On the back-end management end, click "Competition Management">"Registration List" to enter the registration management page. As shown in Figures 47:

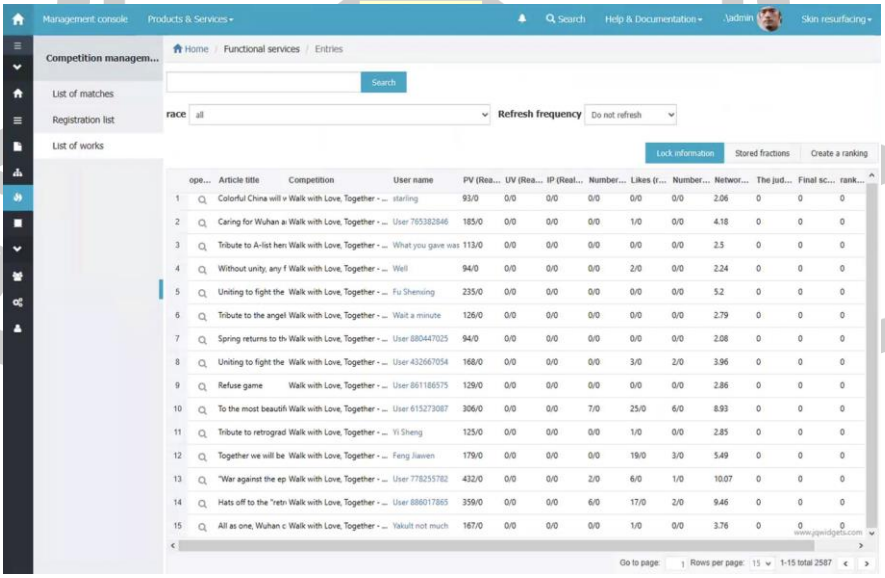


Figure 48 Score for works

This page displays the scores and statistical information of all participating works. Including PV, UV, IP count, comments, likes, network score, and ranking.

You can filter works based on competitions and events, and you can count the refresh frequency of data on this page.

Description of the relevant functions of this page:

Sales Information:

After clicking this button, the statistical information of the relevant competition works will no longer be updated, and the final network score will be generated based on the current statistical information.

Judges' Score:

Double click on the judges' scoring column in each row of the table to enter editing mode and fill in the number of expert scores.

Save Score:

After filling out all the expert score data, click the Save Score button to save the expert score filled in to the database and generate the final score.

Create Ranking

Generate ranking information based on final score

5. Competitor Analysis

1) Determination of Competitors

This competition analysis selects three products: Knowledge Planet App, NetEase Cloud Classroom App, and May Fourth Commune App.

Suggest a simple experience of three products before continuing reading!

Knowledge Planet/NetEase Cloud Classroom/May Fourth Commune

Status:

Knowledge Planet: The top player in knowledge community management, with top 1 sub domains. In terms of business model, it is a direct competitor. NetEase Cloud Classroom: The top player in the field of online learning platforms for improving professional skills, advocating for systematic learning and helping users acquire practical knowledge. It ranks among the top in the field of online learning platforms. It is a direct competitor in the course. May Fourth Commune: a learning platform that balances professional skills and workplace network improvement,

covering a comprehensive range of workplace related courses such as information, case sharing, and courses. It is a player with waist strength. In terms of content direction, it is a direct competitor. Through multiple dimensions and different stages (volumes) of products, we can discover more problems, help ourselves avoid some problems, and discover pain points that users have not yet been solved.

1) Competitive Positioning

Target market for competitors

Table 1 Target market for competitors

Product	Slogan	Core Businesses	Market Positioning
Knowledge Planet	Connect a thousand hardcore fans	Provide knowledge management community (circle)	Community management tools for knowledge monetization
NetEase Cloud Classroom	My Career Courses	Provide a certain profession	Vocational Skills Course Platform
May Fourth Commune	Provide you with professional career skills courses and career information	Multiple systematic vocational courses, providing relevant information around professions and positions (courses,	Courses, tasks, and competition platforms for soft and hard skills in the workplace.

		information, classes, communities)	

By comparing the introductions, promotional slogans, core businesses, and market positioning of the three platforms, it can be concluded that:

The core business/positioning of these three products overlaps with the conclusions of the first part of the market analysis.

Teacher community management courses are systematized, and skills can be applied to free short messages. Therefore, studying these three products can help us better understand whether current products have met users' needs and how users respond to their products.

Especially for NetEase Cloud Classroom, starting from September 10, 2018, the focus has been on the workplace, and Slogan has been changed to "My Career Classroom", abandoning other messy fields and becoming more vertical, which has research value for our own products.

The core concepts of the three products have significantly different core strategies (starting points).

Because the knowledge planet is a tool attribute, we only select the circles related to its workplace for subsequent comparison.

Knowledge Planet: Helps users learn from the workplace bully for a long time, and can directly interact/ask questions with the bully, helping to broaden their horizons and achieve leaps. NetEase Cloud Classroom: Helps users systematically master the hard skills of a certain position, which can be directly applied in the workplace and enhance their competitiveness. May Fourth Commune: Help new professionals master workplace general knowledge, and then enter a certain job class to learn relevant knowledge (courses, information), quickly entering the

workplace. In terms of stages, the May Fourth Commune covers the entire chain, NetEase Cloud Classroom focuses on skill reuse, and Knowledge Planet is more abstract, allowing users to learn methods from Big Bull. What we gain is what we lose, and all three different paths are to solve the problem of workplace learning. Let's continue to analyze its current situation.

3) Competitor Functions

(1)Core functions

Table 2 Core functions

Product core functions	Knowledge Planet	NetEase Cloud Classroom	May Fourth Commune
Course (Video)		√	√
System Course (Video)		√	
Live broadcast		√	
Circle/Community	√		√
Interacting with teachers/asking questions	√		
Open Community			√
Feed streaming content (subscription)		√	√
Knowledge graph		√	

By analyzing the core functional items (with or without) of these three products, it can be determined that they are basically in line with their respective strategies.

The scope boundary is also very clear, especially for Knowledge Planet and NetEase Cloud Classroom. Simply experiencing their App will clearly reveal the simple usage path and core product logic.

It is not difficult to find that the functions of the May Fourth Commune are relatively scattered, yes, they are. The knowledge planet emphasizes the interactivity, dynamism, and lifelong nature of knowledge. NetEase Cloud Classroom is fully committed to the systematic nature of the curriculum, ensuring the implementation of skills. The strategy of the May Fourth Commune was not a big problem, but in the absence of strong products and content, there were not enough well-known lecturers and effective courses provided to users, resulting in the inability to retain high-quality users. Naturally, high-quality communities and communities could not be formed, ultimately leading to scattered courses and classes becoming mere formality.

A handful of grasping the content of the community and community, and all positions want to do it, but in the end, they all fail to excel. This is likely the reason why the May Fourth Commune has little influence on the market. This is also something we need to pay attention to when positioning our own products, and carefully define the scope based on our own team strength/resources.

(2) Target Users and Pain Points to be addressed

Knowledge Planet

According to an interview with the founder of Knowledge Planet (Wu Lujia) around July 2018, Knowledge Planet is a pure community product. The entire Knowledge Planet team is thinking about how to help creators deeply connect with fans (or how fans can deeply hook up with creators) and truly establish more equal relationships.

The Knowledge Planet team also has a dedicated 'Customer Success Manager' position to assist creators in accumulating knowledge and connecting fans. According to Wu Lujia himself, Knowledge Planet only solves two core problems:

1) Ordinary people want to observe and learn from the perspective and way of thinking of amazing people close, and even have the opportunity to communicate.
2) Amazing people hope to precipitate their knowledge, find a "headquarters" that belongs to them, and realize monetization through knowledge.

Based on these two strategic positioning, the knowledge planet has become a threshold for "intimate socializing". And the owner of the circle can control the openness of the entire circle, making people who enter the circle more concerned about that connection, and making amazing people more serious and responsible for dealing with the output knowledge.

At present, there can only be dynamic communication within the circle, asking the circle leader about these two items. There are no fixed courses, no fixed time requirements, and the content can be long or short. This will directly lead to fragmented usage scenarios for the product, possibly during commuting hours, during work hours, or before bedtime.

As shown in Figures 49, the age of users it covers is older. Also due to its strategic positioning, it is not difficult to understand whether in the field of life or work, young people are more concerned about their actual improvement rather than the link with the amazing people. Perhaps they have not encountered the so-called "bottleneck" yet, and slightly older people need a higher perspective to help them improve.

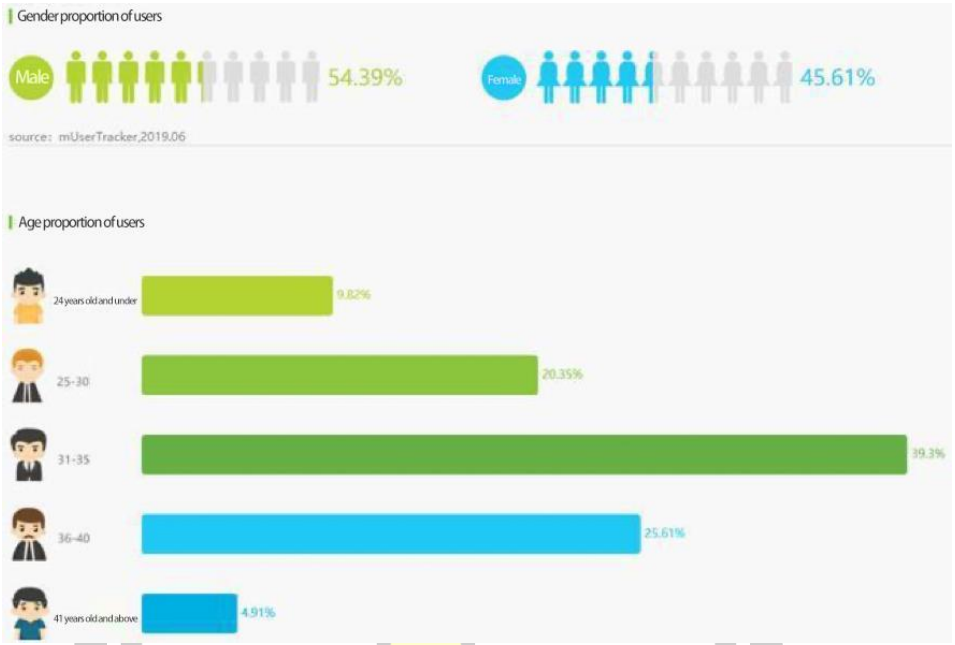


Figure 49 Airy APP Index

Source: Airy APP Index

On the other hand, it also indirectly reflects that for young people (especially those born in 1995), they are more eager for practical skills and how to help them develop in the first few years of society (mainly in terms of career). It also reflects that the so-called knowledge on the Knowledge Planet has a certain degree of "abstraction" and "summarization" (big shots like summarizing), which cannot meet the needs of young people.

NetEase Cloud Classroom

As shown in Figures 50， from the basic attributes of user profiles, NetEase Cloud Classroom is significantly different from Knowledge Planet. Complete rejuvenation. This clearly demonstrates the demand for workplace skills among young users (born in the 1990s).

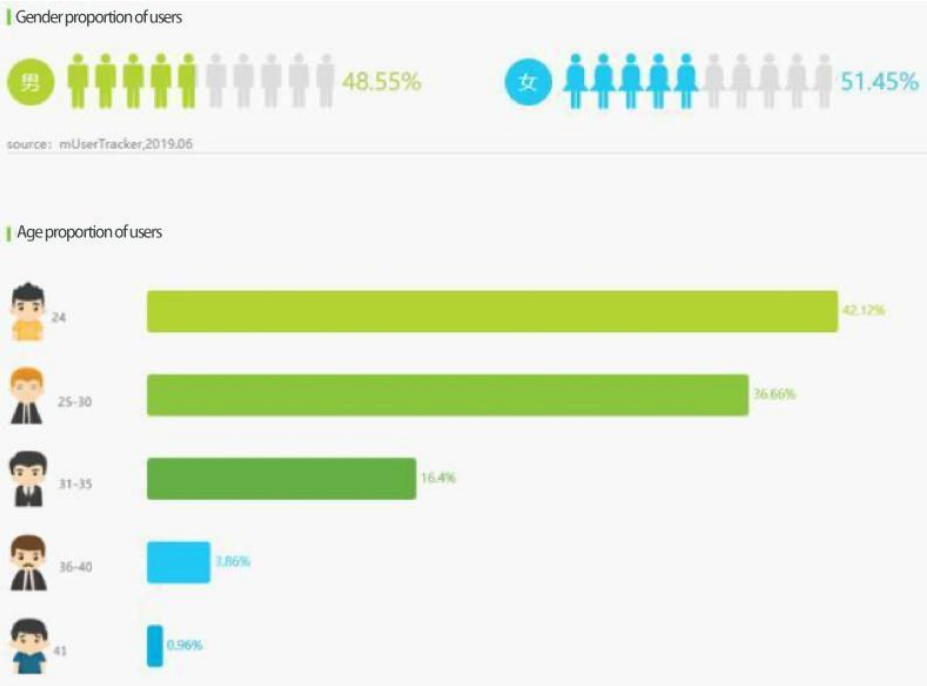


Figure 50 Airy APP Index

Source: Airy APP Index

The demand for NetEase Cloud Classroom to address is clear: providing a systematic job curriculum (mainly focused on the workplace) that can directly help users improve their practical skills in their work. For people who are slightly older, the sense of need is not strong.

Although NetEase Cloud Classroom also has information flow and provides fragmented knowledge (such as articles), the product's scenario and positioning inevitably lead users to use the product with the purpose of "I come to class", and fragmented knowledge does not conform to users' mental positioning of NetEase Cloud Classroom. For example, reading the information and go to 36Kr.

On the other hand, although the course system of NetEase Cloud Classroom is strong, its timeliness is weak. Most authors often do not modify a course after uploading it, and many video courses are recorded one or even two years ago.

Of course, NetEase Cloud has also discovered this issue and launched the "Micro Professional" section to compensate for real-time and community characteristics, strengthen the concept of homework, and solve a core problem: how

should the methodology of skills learned by users be applied in the current social practice?

With several years of iteration, the reputation of "Micro Professional" has become better and better, gradually becoming a star product of NetEase Cloud Classroom. This to some extent reflects the transformation and trend of online education models, with curriculum practice oriented and practice oriented!

May Fourth Commune

The target audience of May Fourth Commune is tailored to young people aged 20-30, who are college students and new professionals (similar to NetEase Cloud: -2-4 years old in the workplace)

The May Fourth Commune aims to create the concept of a "workplace school". Establishing a vocational class that allows for internal communication and offers various courses (similar to professional and general courses in universities): skills courses and workplace general courses. And providing a 'workplace community' to simulate universities, where students can freely communicate, ask questions, and answer questions.

From a strategic perspective, there are public squares (formerly known as "playgrounds"), as well as private classes, and teachers are also available for teaching.

From a content perspective, the May Fourth Commune should focus on both the "workplace" and "job" together. In fact, these are two things with different purposes and at different stages. Workplace related factors, such as assessment, job hopping, self-awareness, and job related factors, such as product manager skills and information, are likely to result in different focus points for users at different stages, and users with different personalities will also focus on different two key points.

The feeling that the entire May Fourth Commune gave me is that it may seem to provide a lot, but the core of your university's teaching staff is average, and the biggest problem is that as a school, the curriculum content is not systematic! I didn't feel the correlation and logic between the various contents. What do you learn in your freshman, sophomore, and junior year in school?

Of course, a position may have traces to follow, because the position emphasizes a "role" and a certain "professional" personality, and each position is specifically characterized by skills and knowledge.

But how to do things in the workplace emphasizes the exploration and progress of the 'self', which varies greatly from person to person. This is a big proposition and a problem that has never been systematic, and everyone must be different.

In summary, it is difficult to achieve a horizontal and vertical combination. In other words, a simple E-learning platform can hardly bear such complex needs, but the author believes that a huge product matrix may be achievable, and even new forms of products in the future can better solve this big problem.

(1.) Workplace people aged -2 to 4 are more concerned about learning skills and have a direct need for employment. Essentially, the user's need is to master skills that can aid in job search and promotion.

(2.) At a certain stage of professional development, there will be a clear need to connect with and learn from the Big Bull to make a leap. Essentially, the needs of users are also job seeking and promotion, but at a higher level.

(3.) Learning skills/knowledge for a single position is more targeted and can better address user needs than one-stop workplace learning. Currently, it can also better capture users' minds.

(4.) Doing professional general education (such as communication skills, interviews, self-awareness, career evaluation, career planning, etc.) is different from doing job skills. In terms of current market conditions, single point breakthroughs in the workplace are more advantageous.

6. Competitive Strategy

1) Profit Method

Knowledge Planet

The Knowledge Planet is very simple: it is a commission extraction model. There is no business such as advertising or value-added services.

The circle owner initiates a circle and sets the entry price. As long as users join, Knowledge Planet can draw commissions.

The following figure shows the positive cycle of the "growth flywheel" provided by the founder himself.

NetEase Cloud Classroom

The current profit points of NetEase Cloud Classroom mainly come from the promotion of course sales, VIP member sales revenue, and service fees for transporting talents to the B-end and connecting employment to the C-end.

At the same time, we also develop various certificate certifications, such as new media certification, from course research and development to enterprise cooperation, to fully connect students' demands in the professional field. The platform can also earn service fees from it, and product advertising space is also a good source of income.

May Fourth Commune

Income is generated through user recharge and savings, with profits mainly coming from course sharing. At the same time, some of it also comes from advertising revenue and revenue from membership value-added services of 128 yuan.

2) Operational strategy

Table 3 Operational strategy

	Knowledge Planet	NetEase Cloud Classroom	May Fourth Commune
Main customer acquisition methods	Communication and user sharing	Online and offline advertising; Campus ambassador delegation, product fission dissemination	Product fission propagation

Main Activity Operations	Not	Promoting activities; Brand collaboration activities	No
Main Product Operations	Provide diverse and high-quality sharing methods; dedicated team to assist each circle leader	The course recommendation mechanism provided by the algorithm; Membership system; Fission reward	Competition rewards; Task rewards; Points system; Fission reward

4.3 Result analysis

This chapter expounds the main functional modules of the system in detail and introduces the method of realizing the functional modules according to the design content. After the early interviews with students, we found the deficiencies in the system operation process, and improved the whole system function. The advantages of this system are as follows: on the one hand, it enhances students' learning effect and interest; On the other hand, it integrates the course content and clarifies the learning objectives, thus improving the initiative and enthusiasm of students in learning.

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Chapter 5 Optimization Results

5.1 Data Analysis

This analysis was conducted using the SPSS 25 data analysis professional tool, and different personal basic information in the study may have a certain impact on the research conclusion. Therefore, if there is no significant difference between personal basic information, the control variables have no significant impact on the establishment of the model. At this time, the credibility of the model is higher and the model is more reliable. The following is an analysis of whether there are differences in basic personal information between different individuals using SPSS25.

This study used SPSS25 to analyze the collected questionnaire data. In order to compare whether the learning platform efficiency of the May Fourth Commune has been improved before and after perfection, a descriptive analysis was first conducted on the questionnaire data. The study used a total score form to calculate scores for each dimension, with a total of 5 items in the online learning efficiency scale and 9 items in the course setting dimension in the online learning platform satisfaction scale, a total of 10 questions in the platform operation dimension, 10 questions in the learning behavior dimension, and 6 questions in the teacher-student interaction dimension.

According to the descriptive statistical distribution, the average value of online learning efficiency, curriculum setting, platform operation, learning behavior, and teacher-student interaction is in the Normal distribution, the range of standard deviation is (0.501, 1.709), and excluding grade, gender, discipline, purpose, and learning platform, the average range is (2.65, 3.12), so it is statistically significant to change the descriptive statistics.

Firstly, analyze the reliability of the questionnaire. During the questionnaire survey, it is necessary to conduct reliability analysis on the data collection and analysis of this study, whether the questionnaire design is reasonable, and whether the data collection is reliable. A questionnaire with high reliability requires high

reliability and reasonable design. The reliability analysis results of this questionnaire are shown in Tables 4**:**

The Cronbach's alpha is the most commonly used reliability coefficient. Generally, the Cronbach's alpha is between 0 and 1. When the Cronbach's alpha is greater than 0.7, it indicates that the reliability of the questionnaire is good. If the Cronbach's alpha is greater than 0.9, it indicates that the reliability of the questionnaire is very high. The Cronbach's alpha of each dimension in this survey is greater than 0.8, and the Cronbach's alpha of online learning efficiency, curriculum setting, platform operation, learning behavior and other dimensions is greater than 0.9, which indicates that the design of this survey questionnaire has excellent structure and high reliability.

Table 4 Reliability analysis

Factors	Clonebach Alpha	Number of items
Online learning efficiency	0.903	5
Curriculum	0.922	9
Platform operation	0.953	10
Learning behavior	0.936	10
Teacher-student interaction	0.871	6

5.2 Correlation analysis

If the satisfaction of online learning platform usage has an impact on online learning efficiency, there is a correlation between the satisfaction of online learning platform usage and the dimension of online learning efficiency. Therefore, to analyze the influencing factors of online learning efficiency, it is necessary to first analyze the correlation between dimensions. If there is no significant correlation between the satisfaction of online learning platform usage and online learning efficiency, the satisfaction with the use of online learning platforms may not have an impact on the efficiency of online learning. The results obtained in this study using SPSS25 are shown in Tables 5:

Table 5 Correlation

Factors	Online learning efficiency	Curriculum	Platform operation	Learning behavior	Teacher-student interaction
Online learning efficiency	1.000				
Curriculum	0.024	1.000			
Platform operation	0.394**	0.094	1.000		
Learning behavior	0.217**	0.088	0.261**	1.000	
Teacher-student interaction	0.054	0.029	0.098	-0.006	1.000

From the above table, it can be seen that the correlation coefficient between course setting and online learning efficiency is 0.024, and there is no significant correlation. There is also no significant correlation between teacher-student interaction and online learning efficiency, course setting, platform operation, and learning behavior. On the contrary, there is a significant correlation between platform operation and online learning efficiency, and there is also a significant correlation between learning behavior, platform operation, and online learning platforms. There is a significant correlation between online learning efficiency, platform operation, and learning behavior, and both platform operation and learning behavior have a significant impact on online learning efficiency.

Table 6 Before and after improvement

Factors	Before improvement		After improvement	
	Mean value	Standard deviation	mean value	Standard deviation

Online learning efficiency	10	3.587	16.34	4.742
Curriculum	25.99	7.705	28.76	8.506
Platform operation	21.9	8.374	35.71	7.8
Learning behavior	25.14	8.889	32.5	9.085
Teacher-student interaction	17.88	5.518	19.61	4.813

From the table 6 above, it can be seen that before the improvement of the online learning platform of the May Fourth Commune, the total score of the online learning efficiency scale for students was 10, while after the improvement, the total score was 16.34, indicating a high improvement in students' online learning efficiency. Therefore, the online learning platform of the May Fourth Commune has a significant positive impact on students' online learning efficiency after the improvement. The score of the curriculum setting dimension was 25.99 before improvement, and 28.76 after improvement. Students' satisfaction with the curriculum setting of the May Fourth Commune online learning platform showed a small increase after improvement; In addition, the platform operation dimension scored 21.9 before improvement and 35.71 after improvement. Therefore, after the improvement of the May Fourth Commune online learning platform, students' satisfaction with the platform operation has been greatly improved. This indicates that the stability and smoothness of the platform operation have been greatly optimized during the improvement process of the May Fourth Commune online learning platform. In addition, the score of students' learning behavior dimension before improvement was 25.14, and the average score after improvement was 32.5. Therefore, the May Fourth Commune also had a significant impact on students' learning enthusiasm after improvement. The average score before the improvement of the teacher-student interaction dimension was 17.88, and after the improvement, the score was 19.61. Therefore, in terms of the teacher-student interaction dimension, the optimization of the May Fourth Commune online learning platform had a relatively small impact.

The following is an analysis of the differences in various dimensions before and after the improvement of the online learning platform of the May Fourth Commune. The results of the difference analysis are shown in Tables 7:

Table 7 Difference analysis

Factors	F	significance	T-test	P value	Mean difference
Online learning efficiency	10.005	0.002	-10.662	0.000	-6.34
Curriculum	1.18	0.279	-2.414	0.017	-2.77
Platform operation	0.856	0.356	-12.067	0.000	-13.81
Learning behavior	0.258	0.612	-5.791	0.000	-7.36
Teacher-student interaction	2.78	0.097	-2.363	0.019	-1.73

The p-value is a parameter used to determine the result of a hypothesis test and can also be compared using the rejection domain of distributions according to different distributions.

The t-test, also known as the Student T-test, can be said to be a very common test method in statistical inference, used in cases where the statistic follows a normal distribution, but the variance is unknown.

F-value is the ratio of two mean squares (effect term/error term), the larger the F-value, the more obvious the effect between treatments, and the smaller the error term, the higher the test accuracy.

From the above table, it can be seen that the p-value of the variance homogeneity test for online learning efficiency is 0.002, which is significantly less than 0.05. However, under the condition of not meeting the variance homogeneity condition, the p-value of the t-test for online learning efficiency is significantly less than 0.05; In the satisfaction scale of online learning platforms, all dimensions meet the homogeneity of variance, while the p-value of the t-test for platform operation, learning behavior, course setting, and teacher-student interaction is significantly less than 0.05. Therefore, the original hypothesis is rejected. There are significant differences between the four dimensions of platform operation and learning

behavior, course setting, and teacher-student interaction before and after the improvement of the online learning platform, that is, after the improvement of the online learning platform, the course setting is more reasonable, more abundant course tutoring resources and exercises, and more timely course updates; After the improvement of the platform's operational dimensions, there has been a significant improvement, with fewer platform lag issues, smoother video playback speed, and more reasonable video duration settings on the platform. The dimension of learning behavior has also significantly improved after improvement, indicating that after the improvement of the online learning platform, students' active learning ability on the learning platform has improved. Students can actively consult course teachers, and the online learning platform also provides multiple channels for interaction and communication between students, thereby improving their learning ability and learning enthusiasm. After the improvement of the platform, there has also been a significant improvement in teacher-student interaction, indicating that the teaching ability of online teachers has improved, and the frequency of teacher-student interaction has increased. Online teachers can also communicate with students through more channels.

From the above analysis, it can be concluded that after optimizing the online learning platform of the May Fourth Commune, students' learning efficiency has increased, the rationality of curriculum settings has been higher, students' learning behavior enthusiasm has been higher, and the interaction rate between teachers and students has been higher. At the same time, after the improvement of the online learning platform, the efficiency of students' online learning will be improved through the dimensions of platform operation and learning behavior. In addition, the smoother and more stable the platform runs, the higher students' enthusiasm for online learning will also be. On the contrary, if the platform crashes and stutters too many times, it will seriously affect students' enthusiasm for online learning. Therefore, the optimization effect of this online learning platform is relatively excellent.

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Chapter 6 Conclusion and Discussion

6.1 Conclusion

This paper mainly studies the influence of course setting and teacher-student interaction of online learning platform on students' learning effect. Through literature reading, the task treasure and the competition platform are sorted out, and the concepts of each dimension of teacher-student interaction are defined and analyzed, thus establishing the research framework of this paper. The questionnaire was designed according to the model, the results of the questionnaire were tested, and then the correlation analysis between the dimensions of teacher-student interaction and students' learning effect was carried out to draw conclusions and give reasonable suggestions on teacher-student interaction to improve students' learning effect.

1. The problems encountered by users during the use of the learning platform were investigated through a questionnaire survey, and it was found that there are two key issues in the platform: curriculum design and teacher-student interaction. In response to these two issues, task treasure and competition platform have been added. Through these two functions, students can enhance their learning effectiveness and interest, thereby clarifying their learning objectives and enhancing their initiative and enthusiasm in learning.

2. The results of the use after modification. After optimizing the online learning platform of the May Fourth Commune, through a survey of students, it was found that the efficiency of students' online learning has been significantly improved. Therefore, the improvement of the May Fourth Commune online learning platform has a significant positive impact on students' online learning efficiency; The satisfaction of the curriculum setting dimension has shown a small increase after improvement; The operational dimensions of the platform have significantly improved after improvement, indicating that the online learning platform of the May Fourth Commune has greatly improved students' satisfaction with the platform's

operation; The improvement of students' learning dimensions indicates a significant impact on their learning motivation.

6.2 Discussion

The May Fourth Commune online learning platform, like other platforms such as China's Learning Communication, Xuetang Online, and China University MOOC, has a large number of video learning resources. Compared with other platforms, the online learning platform of the May Fourth Commune lacks more high-quality original educational resources. The ability of learning resources to meet students' strong thirst for knowledge is an important influencing factor in determining whether students' online learning motivation can be stimulated. However, most of the learning resources provided by the "May Fourth Commune" are mainly collected and introduced by platform developers based on relevant agreements, with open source and free learning courses. Their resource system and integrity are poor. Due to the lack of high-quality learning resources, students' online learning motivation is difficult to effectively stimulate; With the increasing number of courses released by online systems, users are easily at a loss due to the abundance of course resources, which increases the difficulty of obtaining resources for users. Online learning resources are too fragmented and lack of systematization, making it difficult for students to accurately and quickly identify the most valuable and suitable teaching resources among a large number of online course resources. This leads to students spending a lot of time in the retrieval process, while also weakening their motivation for online learning.

Because teaching models often overlook students' differences and affect their learning outcomes and interests. Curriculum design is usually based on current needs and educational policies, but changes in teaching environment and methods often affect the actual effectiveness of curriculum design. Therefore, students often lack practical experience and personal ability improvement. In this situation, it will lead to students spending more time and effort on extracurricular calls to fill the gap in these knowledge. The Task Treasure platform is a task docking platform for task publishing, task undertaking, and knowledge services, building a mutual trust

platform between college students and enterprises. It is also a test of the learning effectiveness of students' courses.

In addition, a number of data competition platforms have emerged in China, such as Alibaba Cloud's Tianchi and Data Fountain incubated by Chinese Academy of Sciences. Big data competition platforms are thriving. The purpose of the competition platform is to integrate course content, clarify learning objectives, and improve students' initiative and enthusiasm in learning. The May Fourth Commune Competition Platform is a skill competition software designed to support practical teaching of online marketing and e-commerce related majors. This competition platform is built by teachers themselves, and students can freely participate in the competition. Through the built-in network scoring mechanism, the scores and rankings of the participating works are achieved, thereby mobilizing students' initiative in learning and effectively improving teaching effectiveness.

The research shows that the online learning platform Task treasure and the competition platform of May Fourth Commune have a significant positive impact on the learning effect of students. Teachers should pay attention to the design of the content of the competition platform in class, make effective use of the competition platform and task treasure platform, and communicate with students more. Through the study of students' learning effect, the effective use of Task Treasure and competition platform can help teachers stimulate students' learning interest, guide students to learn actively, meet students' learning needs, and enhance the relationship between teachers and students.

Therefore, the May fourth Commune online learning platform needs to carry out adequate online teaching preparation, carefully prepare teaching content for students, ensure the timely and effective interaction between teachers and students, and make psychological plans to deal with classroom emergencies in a timely manner, such as sudden drop off, unable to log in and other problems; Teachers should also improve their own teaching and information literacy. Online teaching requires teachers to master various online platforms, effectively use platforms, design teaching courseware, stimulate students' interest in learning, and make reasonable use of their functions for interaction. Students should also try their best

to cooperate with teachers, take the initiative to think, ask questions and get answers, so as to achieve better learning results.

6.3 Suggestions for the Future

The main problems with existing solutions in vocational education include weak job skills, difficulty in applying what has been learned, low learning efficiency, lack of channels for seeking help, and lack of systematic training; The main demands of quasi professionals and professionals are to enhance their competitiveness, promotion, and salary increase.

How can outsiders on the platform better meet their needs and attract them to this platform?

1. Control of course quality

Firstly, the members of the Education Commission are all composed of authoritative experts in various fields.

Sun Quanquan, the founder of an outsider, has designed a talent development system for hundreds of Fortune 500 companies, covering hundreds of positions and 500000 professionals; The project system of Circle Foreign Business College is designed based on the talent needs of 100 Fortune 500 companies, laying a solid practical foundation for high-quality output of courses.

At the same time, it is different from courses with one or several general abilities on the market, or business school system courses such as MBAs that are often several years old and expensive; Circle Foreign Business College will classify the courses based on the abilities required for the Chinese workplace (L1/L2/L3), redefining the theoretical knowledge and practical abilities that professionals should master after each learning stage, so that the courses are in line with the learning pace of Chinese professionals.

As a result, students outside the circle have formed a curriculum system that combines major and minor courses. The L3 course also offers 6 months of case studies at Harvard Business School and 2 months of enterprise practical exercise.

From this, it can be seen that the curriculum system of outside circle students is very complete, which not only ensures the authority and effectiveness of the curriculum, but also adapts well to the characteristics of Chinese professionals.

And this effectively solves the pain points of professionals who are difficult to apply what they have learned, have low learning efficiency, lack systematic training, and improve their competitiveness.

2. Innovation in Teaching Methods

On the basis of ensuring high-quality system courses, the platform of business schools for non circle students has also made certain innovations in teaching methods:

Firstly, each section of the course consists of knowledge learning, knowledge testing, and applying what is learned.

Knowledge learning is to learn knowledge in the form of voice recording + text. Knowledge test is a few Multiple choice questions designed according to knowledge learning for consolidation, and learning for application is a practical question designed according to the actual scene.

The course usually lasts for one month for each module, with the first three weeks learning new content and doing group assignments (one major subject that must be completed in the same month to be reviewed + two minor subjects that need to be completed within the entire course to be reviewed), and the following week of make-up and review.

Among them, the learning arrangement is generally to first major and then minor, and all other parts except for group assignments are independently completed by the students themselves.

Secondly, in addition to the students' own learning, in order to ensure the diversity of learning outcomes and community services, Circle Foreign Business College also arranges for students to receive class teacher supervision and course content related teaching aids, Q&A, group assignments, and live streaming of celebrities

Head teacher supervision: because most of the students are on the job, there is not much spare time. The head teacher will sort out the essence of the group into the essence to save the time for students to view previous messages. At the same time, the head teacher will remind students to study in time according to the course progress, participate in activities in the group, complete homework, etc. at an appropriate time.

The part of teaching assistants guiding learning is divided into: review of knowledge points, comments and discussions on applying what has been learned, scene extension, and other content or script writing (i.e. role playing in the workplace to guide students to understand the course content). Teaching assistants usually collect questions from students this week for centralized Q&A.

In addition, each student will also be assigned to a small group to jointly complete a group assignment before the Sunday of the third week of the month. After completing the major assignment, they will receive feedback from the teaching assistant.

The experts in the live broadcast usually come from professionals with deep experience in a certain field related to various industries and courses. The application scenarios of the course have been extended, and a channel for seeking help has been established for students with complex practical work problems that require the assistance of more senior personnel.

Thirdly, for students with strong learning abilities, in addition to selecting outstanding students and scholarships, the circle also provides a channel to become an external teaching assistant - practicing the general skills learned in practical scenarios, forcing output, and avoiding situations where students forget after learning and lack deep learning.

At the same time, it also provides incentives for teaching assistants, from applying for teaching assistants to candidate teaching assistants, to second level coaches, to first level coaches, and to senior coaches. Senior coaches will have relatively rich material rewards.

3. High Quality Alumni Network

The unit price of courses offered by non circle students in business schools is relatively high, and many students with payment capabilities come from first tier cities in Beijing, Shanghai, Guangzhou, and Shenzhen, as well as second tier cities such as Chengdu, Suzhou, Hangzhou, and Wuhan; They engage in the internet/IT, finance, scientific research and academic, consulting, and medical industries, with high salary levels and personal qualities.

This does have a strong appeal for professionals who want to link high-quality resources and networks.

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