

# *Research on the Support of Thematic Learning Websites Guided by Instructional Design Principles for the Cultivation of Students' Autonomous Learning Ability*

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**Abstract:** Informatization is rapidly integrating into various fields; In the face of the new situation, the learning environment closely related to informatization also presents a holistic transformation trend. When constructing an information-based learning environment, it should be built on the premise of interaction theory to ensure that it conforms to the basic ideas and objectives of interaction theory. The popularization of network technology has been introduced into the teaching field to realize network teaching. Under the guidance of instructional design theory, thematic learning websites have been formed. This kind of online teaching has realized the two-way interaction between teachers and students, so that teachers and students are in an equal position, and students can fully play their main role in learning knowledge. This paper first makes a theoretical analysis of the construction of the information-based learning environment, points out the basis of the theoretical analysis, and then discusses the principles of instructional design, thematic learning websites, autonomous learning, etc. On this basis, it analyzes the teaching function of the thematic learning website under the guidance of instructional design theory, and finally discusses the strategies of applying the thematic learning website to cultivate students' autonomous learning ability, which will enrich the theory and practice of information-based teaching, It has certain reference significance and practical value to promote the construction of educational informatization.

## **1. Introduction**

The application of network technology in teaching breaks the traditional teaching mode and creates a network teaching environment for students. In the specific teaching, teachers should work out the teaching plan according to the students' learning characteristics from the perspective of students' knowledge needs, so that teachers can better play the role of teaching and guidance in teaching. The main purpose of using network technology to carry out teaching activities is to complete teaching tasks and achieve teaching objectives. The teaching measures taken in teaching can be reflected in the teaching plan. Therefore, teachers' teaching is based on and controlled by the instructional design scheme. The model of network technology applied to teaching is network

teaching. An important feature of this kind of teaching is interaction [1]. Teachers and students interact with each other. Teachers respect the main role of students and work out teaching plans from the perspective of students' knowledge needs, in which the characteristics of teaching interaction should be highlighted. Teachers can understand the learning situation and knowledge needs of students, and based on this, make teaching plans to ensure teaching quality. Students learn knowledge in the network environment, and students' learning objectives can be achieved. Adapted to online teaching, but also as an important carrier and form, the theme learning website provides an effective learning path for students' autonomous learning [2]. The rich knowledge resources that students can learn through the theme website provide students with a high-quality online autonomous learning environment. Students can freely choose learning objectives and different types of knowledge without time and space constraints. In recent years, with the continuous progress of Internet technology, thematic learning websites are constantly being constructed and developed, and have been widely used in major vocational colleges, with the purpose of promoting students' autonomous learning through learning websites. Under the theme learning website, students can communicate and learn through the website, summarize their learning methods, sort out the learning process and master the learning points. Thematic learning website is a kind of teaching resource under the network environment, and an effective way of modern information technology and education curriculum. At present, more attention is paid to students' independent learning in education and teaching methods, which is also the requirement of lifelong learning in modern education and the new learning method advocated in the reform of modern education curriculum.

## **2. Theoretical Analysis of Constructing Information Learning Environment**

The information age has fundamentally triggered the corresponding transformation of learning mode, in which the purpose and goal of lifelong learning have been integrated. If we want to start to improve the learning society, we can't lack information technology as a fundamental aid objectively. At present, the relevant measures to create a learning society involve diverse links and processes. Therefore, teachers and students should be committed to changing their existing understanding to ensure that they can truly recognize the unique advantages of the information-based learning process and learning model [3]. On the premise of cultivating independent knowledge, we can be committed to comprehensive acceptance in the face of diversified information interaction means, and optimize the traditional learning process for a long time.

However, in essence, the measures to build a new learning environment should include many levels, and the corresponding cultivation measures also show multi-level characteristics, which can not be achieved overnight. From the current state, due to the impact of the examination-oriented thinking, there are still many teachers and students who do not really accept the information environment at this stage, and lack the necessary independent inquiry understanding. For example, at present, many students have the necessary conditions to access information media, so they can carry out independent research by means of information technology. However, at the same time, the informatization means have not been optimized and utilized in all aspects. The above situation is likely to affect the comprehensive effectiveness of the interaction mode. In order to fully optimize the current situation, the relevant departments and their personnel should also start to improve the existing interaction mode and relevant mechanisms to ensure that it serves the improvement of learning effectiveness.

The learning activity itself contains a variety of processes and steps, and the learning process objectively cannot lack the learning environment that adapts to it. This is because different types of learning environments usually involve the corresponding learning efficiency, and there is an

inherent relationship between them, so they should be inseparable. In recent years, information technology is being fully integrated into the current learning environment, which involves multi-level interpersonal relationships, learning resources, teacher-student interaction and other diverse elements [4]. On the premise of close integration of the above elements, teachers and students can realize real-time communication of learning information for specific disciplines. Therefore, it can be seen that the most critical feature of the information model is to enhance communication.

In contrast, the new learning model based on information technology embodies its unique advantages because of its typical characteristics of convenience, effectiveness and interactivity. However, from the current situation, teachers and students do not really regard it as a learning environment with strong authenticity, but still classify it into the category of virtualization. Even though teachers and students have accepted the current new information technology and corresponding learning resources, they have not penetrated it into the daily learning atmosphere. Therefore, the existing learning ideas need to be improved to ensure the close integration of learning tools and learning resources, including diversified digital resources and media resources. In the whole process of learning, teachers and students can communicate with each other through specific ways or means, and acquire diverse learning resources to ensure that they are confined to a closed learning space [5].

Therefore, compared with traditional learning media, interactive learning pays more attention to learners and regards them as the main body in the whole learning process. Specifically, when exploring specific types of subject knowledge, learners should have all-round communication and interaction with teachers. If it involves more difficult learning problems, it can also rely on a variety of technical approaches to achieve the corresponding learning assistance. Therefore, for learners at the current stage, the information environment itself is not closed, but full of openness. Under the guidance and support of the interactive concept, students will therefore have a new learning experience, and then obtain information support from multiple levels. In this state, students can obtain learning materials closely related to themselves by computer search, search for reference materials or other ways.

The learning environment is not limited to a single level, but embodies the characteristics of diversity. At the same time, the knowledge of various disciplines is not isolated, but should be closely linked together, and then reflected in the characteristics of discipline interaction. Under the comprehensive support of the information approach, learners should be able to have assistance from multiple levels to ensure that they can have a more diversified access to information. When necessary, teachers can also use multimedia and other means to create realistic classroom scenes, ensure that students can quickly integrate into the existing situation, and comprehensively optimize the learning experience of narrative itself. In recent years, constructivism has been fully applied to the existing classroom processes, including information interaction and cognitive communication. The information environment is not simply a accumulation of resources, nor is it limited to a single technology presentation, but involves a comprehensive classroom model and learning support.

### **3. Theoretical Analysis Basis for the Construction of Information Learning Environment**

On the special level of theoretical basis, theoretical analysis usually involves constructivism principle, information processing principle, three types of interaction principle, the principle of teaching interaction hierarchy tower, learning environment view and other principles. Specifically, the construction of an information-based learning environment should follow the following basic theories [6].

### **3.1. Relevant Theories of Constructivism**

Constructivism theory and interactive learning model are closely related. In the view of constructivism, teaching some subject knowledge by teachers is not the only way to acquire knowledge. This is because only by virtue of their own cognitive background and integrating into specific situations can learners commit themselves to building a multi-level cognitive framework. Therefore, constructivism fundamentally highlights the elements of meaning construction, conversation construction and situation construction, in which multi-level cooperation is indispensable. According to constructivism, learners themselves should have a higher level of subjective awareness to ensure that they can truly understand the value of situational construction. From the perspective of mutual interaction, if learners want to have a good experience, they also need to rely on real-time information feedback to improve the existing learning level.

### **3.2. Basic Principles of Information Processing**

With the support of information system, information processing theory involves many levels of connotation. This is because information input should specifically include specific knowledge input, concept input and sensory input. On this basis, the input information needs to be comprehensively refined and stored, and then the corresponding output processing is carried out accordingly. According to Sandlock's basic theory, processing various types of information also means picking up information and storing it in a specific location, which also includes all-round information interaction. Under the influence of informatization, the construction of learning environment usually involves the acquisition of various information related to it.

### **3.3. Relevant Principles of Three Types of Interactions**

As early as the end of the last century, the scholar Michael first created the interaction distance theory, and then gave a complete framework to adapt to it. In this process, Michael believed that relying solely on independent learning would reflect the obvious limitations, so it is necessary to include it in the framework of interactivity. The three types of interaction theories involve three different levels, including the interaction between teachers and students, learners, learning content and learners. Informatization has brought a new impact on interaction. It is necessary to pay attention to it and create a new interaction mode. In the later stage of evolution, many scholars have absorbed the above classification theory created by Michael, and extended and revised it in an all-round way.

### **3.4. Teaching Interaction Hierarchy Tower**

Network teaching interaction is carried out in a hierarchical way, first at the level of technical operation, then at the level of information interaction, and then at the level of concept interaction. The whole interaction process is from concrete to abstract, from low-level teaching interaction to high-level teaching interaction. In the process of operation interaction, it is based on information interaction, and gradually enters the concept interaction link. Conceptual interaction is the highest level of interaction. In teaching, media exists as a platform and plays a carrier role of teaching information. In the network teaching interaction, the media plays a fundamental role.

Media is the platform of the network teaching hierarchy. From the bottom, the middle to the top is the process of operation interaction, information interaction and concept interaction. The three levels can occur at the same time. The higher the level of interaction, the more abstract the teaching interaction is, and the more important it is for the realization of teaching objectives. In order to play

its role effectively, the interactive tower of network teaching should enter the level of conceptual interaction. In the process of information interaction, conceptual interaction should be taken as the purpose, and close to the learning goal. It can not only observe the information interaction, but also be used to judge the learning effect. The role of the network teaching hierarchy is to differentiate and analyze the teaching interaction phenomenon, and the media function will be gradually improved, which can play a certain role in promoting students' learning.

Improve the media function, improve the learning ability of students, and improve the level of operation and interaction. The role of teaching interaction in promoting students' learning can be evaluated through concept interaction. With the improvement of the level of operational interaction, information interaction can reach the level of conceptual interaction. In the operation interaction between the student's body and the media interface, with the complexity of the media interface, students need to be able to operate the media skillfully to make the interaction complete. Operation interaction is that students observe media operation and become familiar with operation technology. In the process of learning, the operation interaction is easy to realize and gradually simplified. This kind of teaching interaction will not adversely affect the interaction at other levels. Students learn through the media. If students are not familiar with the media and it is difficult to achieve interaction, the effect of teaching interaction will be affected. The highest level of operational interaction is not only to understand the positive impact of interaction, but also to feel the negative impact. The technical level of operational interaction is closely related to the complexity of the media and the form of the media interface. The familiarity of students with the media interface will also have a certain impact on operational education. In order to improve the level of operational interaction, it is necessary to improve the media interface and provide technical training for students. The level of interaction can be improved by improving the media interface and conducting technical training for students.

## **4. Basic Features, Procedures and Models of Instructional Design**

### **4.1. Basic Features of Instructional Design**

#### **4.1.1. Guiding Features of Instructional Design**

Instructional design is designed to carry out educational activities, so as to provide reference basis for the development of teaching activities, so as to achieve the expected primary school effect. If teachers want to make teaching activities achieve good teaching results, they should carry out in a planned way and take various teaching measures to complete various teaching tasks. These teaching measures should be reflected through teaching design [7-9]. Therefore, if the teaching design is to be formulated, it should be carried out in strict accordance with the teaching design in teaching activities, and all links of teaching activities should be controlled by the teaching design plan.

#### **4.1.2. Integrated Characteristics of Instructional Design**

The systematic development of teaching activities should be considered in teaching design. In the specific teaching design work, it is to use the systematic scientific method to synthesize various elements of teaching activities, and plan and arrange the teaching activities as a whole. In order to achieve the teaching objectives, it is necessary to consider all the elements comprehensively and use them reasonably in teaching activities. There is an inherent correlation between each element. The allocation of elements should be optimized to optimize teaching.

### **4.1.3. Operational Characteristics of Instructional Design**

Teaching design plays a guiding role in teaching activities. It is to use teaching theory to design teaching activities, fully apply theoretical content to teaching practice, and play a guiding role in teaching practice. In the teaching design plan, the teaching objectives should be clear, including the standard links of teaching, the content and operability of teaching, the teaching methods used in teaching activities, the teaching environment, the teaching time and the implementation of teaching evaluation, etc., should be fully clear in the teaching design to ensure that the teaching design can be implemented in the implementation of specific teaching activities [10-12].

### **4.1.4. The Rehearsal Characteristics of Instructional Design**

The rehearsal feature of instructional design is that in the process of instructional design, teachers rehearse every link of actual teaching activities in their minds, just like the rehearsal before the performance. Teachers feel that they are already in teaching activities. They should consider every teaching link and detail, do a good job in planning, and create good conditions for the smooth implementation of teaching activities.

### **4.1.5. The Salient Features of Instructional Design**

In the process of designing the teaching plan, teachers should highlight the key elements in teaching to achieve the teaching objectives. In the teaching design scheme, it is also necessary to highlight the teaching methods used and design the teaching environment that meets the teaching needs, so as to make the teaching featured and focused.

## **4.2. Basic Procedures of Instructional Design**

Teaching design is to plan teaching activities and make clear teaching decisions, so that teaching can be carried out systematically. Instructional design has a very wide range of applications. It can not only design classroom teaching, but also design extracurricular activities. For the design of a course, a class and teaching units, basic procedures need to be followed. In the process of teaching design, the following procedures need to be followed [13].

After setting the teaching objectives, it is necessary to determine the teaching tasks. In the process of analyzing the teaching tasks, it is necessary to observe and analyze the behavior changes of teachers and students in teaching, and quantify them as indicators, and predict the teaching results based on this.

After determining the starting point of students, it is necessary to analyze the students' original knowledge level, learning motivation, technical ability and learning status. When students master certain knowledge and technical ability, they will gradually transition to the end state. The behavior habits and attitudes formed in the process of transition play a decisive role in the learning effect.

In the process of teaching design, the basic framework is as follows: First, the teaching material content should be presented to students in what way, and what method should be used to provide effective guidance for students' learning. Second, what measures should be taken to stimulate students' learning reactions, interact with teachers and provide feedback. Third, what methods should be adopted to achieve the effect of scientific evaluation for teachers' teaching results.

From the perspective of the basic framework of teaching, the main purpose is to achieve the expected teaching objectives. As a teacher, we should set teaching objectives from the perspective of students' knowledge needs and in combination with teaching experience. Determine the teaching strategy and obtain the feedback information from students to further improve the teaching model and meet the knowledge needs of students.

### **4.3. The Mode of Instructional Design**

The system analysis model is established based on the engineering management science, and the whole teaching process is regarded as an input-output process, and the whole process is systematically expanded [14].

#### **4.3.1. System Analysis Mode**

Students are the main body of "input", and the "output" is the educated people. The system analysis mode emphasizes the systematic analysis of the teaching process and learning process, the overall analysis of the input-output process of the teaching system and the various factors that constitute the system, and the combination of various elements, based on which the optimal teaching design scheme is formulated. From the operation of the system analysis mode, special attention should be paid to the analysis of input-output process. In the whole design process, the goal plays a fundamental role, is the expected result produced in the operation of the teaching system, and plays a decisive role in the teaching quality. Due to the different goals achieved, the way of analyzing and combining the system and the way of design will also be different. The system analysis mode is established on the basis of analyzing the teaching process system. All teaching elements and the composition of the system should be fully considered, and the system design plan should be formulated to achieve teaching optimization.

#### **4.3.2. Target Mode**

The target pattern is the "system approach pattern", which was designed by Dick and Carey in 1972. The goal model is the same as the system analysis model in the design process. The content emphasized includes the system analysis and the system design. There are also differences between the two. The teaching activities are carried out based on the teaching objectives, and the system design is carried out after the teaching activities are quantified as indicators, so as to achieve the teaching objectives. The basic program of the target mode is linear in operation, emphasizing the realization of teaching objectives. In the design process, the system is very strong, and each design step is closely linked, which is very easy to operate.

#### **4.3.3. Process Mode**

In 1977, J.E. Kemp proposed the process model. The difference between this model and the target model is that the various links of instructional design are not linear, but are designed to be non-linear from the teaching practice [15]. No matter from any link, the teaching plan can be developed forward or based on needs. To implement it in specific teaching practice is to transform the teaching design scheme into teaching action to ensure the teaching quality. In the process of teaching design, teachers should carry out according to general principles, give full play to individual creativity, and effectively solve specific problems in teaching.

## **5. Basic Cognition of Thematic Learning Websites and Autonomous Learning**

Theme learning website is a kind of online education method, which is used in educational activities. Thematic learning websites refer to resource-based and learning-based websites in which students conduct in-depth research around one or more subjects closely related to their courses under the network environment. The website has the function of storing, transmitting, processing and processing teaching information, which can effectively enable students to communicate and cooperate independently, and the network can also evaluate and give feedback on students' learning

results [16]. The theme learning website creates real situations and questions to allow students to conduct in-depth and detailed research and study on a certain knowledge point, so as to obtain effective knowledge, that is, to form the knowledge structure of the theme. The network resources are rich and colorful, and the content forms are diverse, but the resources provided must be scientific and reasonable.

### **5.1. Functions of Thematic Learning Website**

1) Thematic learning website is one of the types of educational websites and an important means of combining information technology with educational courses. The application of learning website in teaching can highlight the classroom effect and play its unique educational role;

2) The theme learning website is a rich resource library. Students can download resources according to the needs of a certain knowledge online, and also support the uploading of text, pictures, videos and other resources, so that the resources of the theme learning website can be dynamically updated and exchanged for learning;

3) Thematic learning website is a new online education method. The network can integrate a certain type of content that students need, quickly provide students with the resources and equipment they need, and can realize collaborative learning, group learning, situational learning and other learning methods;

4) The service object is uncertain, and website learning can effectively cultivate the self-learning ability of the service object. It faces not only learners at the education stage, but also some users who are interested in the website resources and participate in the research. All users can share the learning results, exchange learning experience, and express personal opinions on the website. The website manager can supervise the content to avoid illegal operations.

5) Thematic learning website is an interactive tool for students' learning [17]. In the online learning environment, students can share more learning resources together, consult each other, select the content they study, and discuss and analyze the information. It has strong flexibility and large knowledge storage capacity.

### **5.2. Characteristics of Autonomous Learning**

Modern autonomous learning mode and traditional teaching mode are two different concepts. Autonomous learning is to cultivate students' autonomous learning ability. The main body of teaching is student-based, and students complete the process of independent thinking, exploration and practice through a certain way. Autonomous learning is the whole process of completing learning activities, with the focus on whether learners are independent in teaching as the main body. Compared with the traditional teaching method, it is a passive learning, while the modern autonomous learning is an active learning process. The teacher plays a guiding role in teaching.

Autonomous learning emphasizes that students have a strong interest in learning and take the initiative to learn voluntarily. It emphasizes the main position of students, and has three characteristics: self-reliance, self-reliance and self-discipline [16-18].

#### **5.2.1. Self-reliance**

That is, the independence of students in learning. Each student is relatively independent. Learning is to learn for himself, that is, to complete his own things. Learning is to analyze and think about external information. It has its own unique way and significance. Each learning subject has the talent of learning and the ability of independent thinking, which is the basis of the ability of independent learning. Students can learn knowledge on the network teaching platform, and



effectively play the main role of students. They can interact with teachers and solve problems with classmates through interaction. In the learning of knowledge, students no longer face teachers directly, but face the indirect interaction between teaching courseware and teachers.

### 5.2.2. Selfishness

Autonomous learning can take learning as a part of life and is an indispensable part of learners' daily activities. Learning self-reliance is the extension and expansion of self-reliance, which is the exploration and creation of individual learners in learning. Students tend to be curious about new things in their study. Curiosity will generate great interest, and learning interest will induce students to explore and research constantly. In short, curiosity provides motivation for students' study. Self-action includes four structural relationships, namely, self-exploration, self-selection, self-construction and self-creation.

Self-exploration is the curiosity induction mentioned above. It is to explore things, events and environments in the world. It is to explore new things. It can also be to explore and learn on the basis of others' cognition of objective things, and finally acquire knowledge. Self-selection refers to learners' selective acceptance of the explored knowledge. Only when learners notice the information they need can they actively choose and accept it. Therefore, the premise of self-selection is that learners are attracted by a certain cognitive field and begin to pay attention to external information. There is also a demand relationship between learning and learning subjects. Only when there is a demand can they choose to use in the knowledge field and play its value. Self-construction refers to that learners reconstruct new knowledge based on existing knowledge, and construction is also the formation process of new knowledge. The premise of this formation process is also based on the information provided by learners in their choice. Self-construction is not a whimsical and groundless information construction, but based on the previous learning experience and knowledge accumulation as the premise, information is extracted from the learner's brain through processing and integration, and new and old knowledge are combined, so that the original knowledge is sublimated, and the combined acquired knowledge forms a new cognitive structure. Therefore, building knowledge is to consolidate and transform the existing knowledge with new knowledge [2]. Self-creation is the highest level of independent learning and a new breakthrough. It refers to the creation of a new and well-founded knowledge structure by the learning subject on the basis of constructing knowledge. This knowledge structure follows the objective laws of the development of things, meets its own needs, and has advanced knowledge and views on things, stimulating learners' creative thinking. The difference between construction and creation is that the former is the transformation and sublimation of the original knowledge, while the latter is a new and advanced knowledge of truth based on knowledge theory. Only all the information in the learner's brain is fully utilized to improve the learner's own cultural value and highlight the charm of knowledge. Therefore, the four structural relationships of self-nature are interrelated. The whole process from exploration to creation is the process of learners' learning, also the process of learners' growth, and more importantly, the process of knowledge development.

### 5.2.3. Self-discipline

There are many kinds of external information. Self-discipline means that learners can play a role of self-management and restraint in the process of learning knowledge. To be more popular, learners can consciously learn without supervision. Consciousness is the awareness of the learning subject and can awaken to his own behavior, learning requirements and purpose. Ask yourself to regulate and restrict your behavior, stimulate your potential, break through yourself, and keep forging ahead and persevering in learning. Contrary to heteronomy, self-discipline is a positive and

active performance, while heteronomy is a passive management performance. Therefore, self-discipline learning is also an active and active learning. Only when learners realize the significance of their own conscious learning can they exert the self-discipline of autonomous learning. Self-discipline learning is a clear awareness of the students' main body, which can mobilize the enthusiasm of students to actively learn knowledge, and is the guarantee of autonomous learning.

## **6. Teaching Function of Thematic Learning Website under the Guidance of Instructional Design Theory**

Under the guidance of instructional design theory and based on the above point of view, the author believes that the main teaching functions of the theme learning website are as follows.

### **6.1. Open Teaching System**

The system is an organic whole, in which the elements are related and each plays a specific role. To break the traditional teaching mode and adopt the network teaching method in teaching is to form an open network teaching environment, so that teaching is not limited by time and space, but through information interaction in the network to complete teaching [19]. The purpose of students' acquisition of knowledge is not only to take the exam, but also to use the acquired knowledge reasonably. The network teaching system has great potential for growth. It can reflect openness in all elements of the network and adapt to modern education concepts.

### **6.2. Nonlinear Personalized Network Courseware**

Teaching is a process of interaction between teachers and students mediated by textbooks. Network courseware is a necessary element in network teaching. Its core is learning courseware, which is to display the main teaching content in digital teaching mode and see the content of the textbook. Students' learning activities are not the interaction between students and teachers, but the interaction between students and courseware. All teaching activities have not left the core of teaching content. Courseware information structure belongs to hypertext structure and is a network structure to organize information. At the same time of text segmentation, various relevant information will also be transformed to form an information network [20]. Users can click the link node to enter the specified platform to obtain the information they need. The learning courseware on the network platform is usually embodied in the form of hypertext. After the teaching content is organized, it is stored nonlinearly and can be flexibly used and randomly transferred to each node. In online teaching activities, students use the same courseware for learning. Due to different knowledge backgrounds, different learning abilities, and different needs for knowledge, they will gain benefits through independent learning, which not only improves students' learning efficiency, but also reduces learning costs.

### **6.3. Exploratory Learning with Learner Autonomy**

The re-construction of knowledge requires that students are no longer simple receivers of knowledge, but exist as explorers of knowledge. Therefore, teachers should create a learning environment for students to explore, stimulate students' creative thinking, stimulate students' desire to explore, and achieve an organic combination of learning and teaching.

In an ideal classroom learning environment, students can be interested in learning and have a desire to explore unknown knowledge. The network text has the characteristics of non-linear structure. What it presents is no longer simple text information, but forms a knowledge exploration

space in the form of video, audio, pictures, tables and other forms. The network platform is an open space, on which all users can communicate and interact equally. However, the network platform also has hidden characteristics, which creates conditions for students to actively explore knowledge. With the enhancement of students' autonomous control ability, they can adopt effective learning methods according to their learning needs and adapt to different learning environments. Students can independently control their own behavior and explore learning, which can play a certain role in improving the quality of students' learning.

The network is self-organized, and students can rely on mutual exchange of learning knowledge in autonomous learning. According to the theory of Dewey, a famous educator, to gain transformative experience, we should share knowledge in a cooperative way. The openness of cyberspace creates conditions for the self-organization of knowledge learning. Students help each other and learn cooperatively, breaking the traditional competitive environment, but promoting learning through cooperation. There is competition among students, which is inevitable. Students' academic achievements are an important basis for judging students' learning quality. Some students often refuse to communicate with their classmates for fear of falling behind. In the communication between teachers and students, teachers mainly transfer information to students, and do not attach great importance to the mutual cooperation between students. By making full use of the network environment, we can dilute the communication between students and the communication barriers between teachers and students. Through this self-organized and collaborative way, students can not only better grasp the importance, but also improve the learning quality in the process of equal interaction between teachers and students, and play a certain role in promoting the improvement of teaching.

#### **6.4. Reconstructing the Role of Teachers**

Goldman and Newman conducted a comparative study on the effective communication between teachers and students, and proposed that teachers and students are aware of their different positions in the process of face-to-face communication. However, in the network environment, students will have a strong subjective consciousness and can interact with teachers, and teachers rarely evaluate. There is concealment in using network technology to interact. Using this indirect way of dialogue can make teachers and students have an equal dialogue, and the fear of "face-to-face" communication between students and teachers will be eliminated. You can communicate with teachers on the network platform instead of taking teachers as the only owner of knowledge. The knowledge monopoly of teachers will be eliminated, and students' autonomous learning ability will be gradually enhanced. When teachers educate students, they will inevitably shift the focus of education to students, from simple knowledge transfer to how to guide students to learn independently. Thus, teachers and students are in an equal position in the teaching classroom.

Teachers and students communicate on the network platform. In an equal environment, students' learning autonomy will be stimulated, making classroom teaching change from one-way teaching to two-way interactive teaching. Teachers not only assume the responsibility of teaching, but also become students' listeners from the perspective of communication with students. Teachers and students are in an equal position, and the role played by teachers has been reconstructed. The two can coexist in the teaching situation [17].

#### **7. Strategies of Applying Thematic Learning Website to Cultivate Students' Self-regulated Learning Ability**

Cultivating the ability of independent learning is the demand of social development, following the law of social development, and also cultivating the ability to adapt to market career changes.

Learning is endless, which means that learning is everyone's lifelong task, accompanied by human life development. It is far from enough for students to rely solely on the knowledge in school. They need to explore and learn by themselves. College mathematics is abstract, logical and practical. Therefore, autonomous learning ability is the skill that is more concerned and cultivated in college mathematics teaching, which is also the basic ability for the survival of all mankind.

### **7.1. Use Thematic Learning Websites to Clarify Learning Objectives**

Learning objectives are the beginning of the learning process. The quality and effectiveness of students' learning depends on the establishment of learning objectives. Learning objectives can help students develop learning plans. The establishment of theme websites emphasizes students' active learning. Students at the university stage have a certain amount of knowledge reserves, and their age characteristics determine their strong self-discipline. Students can determine learning objectives according to their own learning ability level and foundation. In classroom learning, teachers can't take one-on-one guidance, and each student has different abilities to understand knowledge. If the teacher sets a learning goal, it is easy for students with strong ability to complete it, and even thinks it is too difficult for students with weak ability to complete the goal quickly, which will lead to slow learning progress and even dampen the enthusiasm of some students. With the theme website learning, students can conduct one-on-one learning. The website teacher will set learning objectives for students according to the actual situation of the learning object, from simple to deep, step by step. Based on the textbook knowledge points, the learning website selects the learning framework and knowledge outline within a certain discipline, highlights the key content of knowledge, and expands the content according to the learning direction of students, which will not make students feel unfamiliar with knowledge, but also help students have a good positioning for themselves.

### **7.2. Choose Your Own Learning Method**

The theme learning website has rich and colorful resources. Each student can carry out exploratory learning according to the learning basis and knowledge needs. They should learn to use the website to help themselves learn. First, create an autonomous learning space. With the informatization of teaching resources, students can arrange their own learning without the constraints of time and space. First, they should determine the learning center as the textbook knowledge, and use various teaching methods to carry out online learning, such as teaching objectives, teaching requirements, teaching content, teaching environment, teaching practice, and teaching expansion, to form an integrated teaching method, so that students can learn independently in a direction. Second, combine practice and theory organically. The ultimate goal of university teaching is to face social employment. Therefore, teaching should combine theory with practice, and adopt task-driven teaching mode to carry out teaching tasks. The teaching tasks include knowledge points. Students can study the teaching tasks in this section and analyze new knowledge in teaching [18]. Learning and learning are done according to tasks, and the setting of tasks must be attractive and innovative, so that students can actively learn and acquire more knowledge. This teaching method is not a process of accumulation of knowledge from the shallow to the deep, but a process of focusing on the completion of learning tasks. This is a learning process, which uses multimedia to cultivate students' self-learning ability. Third, cooperative learning. The teaching at the university stage is highly comprehensive and practical. Teachers can assign learning tasks, and students can discuss in the form of group cooperation. In order to facilitate students' study and discussion, group establishment is divided according to dormitory, focusing on cultivating students' learning ability in the process of body discussion. In the group, we discuss the reasonable division of labor, learn from each other, and propose better solutions in the existing cooperation projects.

This cooperation mode can not only improve the individual's knowledge level, but also cultivate the students' sense of unity and cooperation. Students will get a sense of achievement after completing the project, which is the recognition of self-learning and the witness of the improvement of students' self-learning ability.

### **7.3. Sort Out the Learning Process and Complete the Learning Evaluation**

Compared with classroom teaching, subject website learning can enter the learning state at any place. Students are the main body of learning, and can arrange the learning process according to their own learning methods and habits. The learning process includes: learning time, learning sequence, knowledge type, etc. For simple knowledge points, you can quickly and accurately complete, or you can choose to skip this question. For learning content, you can divide difficulties and key points online, choose your own learning. The learning of knowledge points on the website can be divided into online learning, online practice, online test and assessment result feedback [19]. As long as the network connection is normal, you can enter the learning state at any time. Traditional teaching is that the teacher leads you to learn the knowledge points in this section. Regardless of the difficulty of the knowledge points and the passive acceptance of the students, the different foundation of the students will affect the teaching effect, while the classification of knowledge points on the theme learning website is simple General and difficult, students can choose the difficulty of knowledge by themselves when entering the website. In addition, college teaching contains rich content, such as math teaching. Solving a math problem may be related to the knowledge points learned before. Classroom teaching requires teachers to prepare teaching cases in advance, or teachers require students to prepare, and students are in a passive state. In the process of teaching, once a certain math principle is omitted, teaching cannot continue, and website learning students encounter math problems in learning, It is an active learning process to query information on the website subconsciously. Students can deepen their knowledge memory and improve their autonomous learning ability in the process of searching by themselves [20]. The theme website will make corresponding result evaluation while conducting online exercise for students, which is equivalent to an examination system. It is a test of students' mastery of knowledge points and evaluation of learning effects. It can clearly make students aware of their learning weaknesses and remind students to strengthen the consolidation of this knowledge.

## **8. Conclusions**

As an information media, the role of the network is to realize the two-way transmission of information. The interactive function of the network is very powerful. Make full use of network resources in teaching to build a network teaching platform. Teachers interact with students with teaching content as the core, instead of teachers spreading teaching content, and students passively accept teaching content. Through interactive activities, teachers and students can promote effective communication between each other, help improve students' learning ability, and improve teachers' teaching quality. In classroom teaching, it is very necessary to give full play to the advantages of interaction between teachers and students based on the principle of instructional design. Teachers interact with students with teaching content as the core and encourage students to interact and cooperate with each other to achieve the purpose of learning. Teachers play the role of supervision and guidance to students and adjust their learning state to make students in a benign learning state and improve their learning quality. During the whole interaction process between teachers and students, teachers should give full play to the interaction function of the network, evaluate the learning status of students from the perspective of communication with students, encourage students to cooperate with each other and do a good job of self-evaluation. Through interactive activities,

students' learning level can be improved, and their ability to use knowledge will also be enhanced. The content of the theme learning website is open and will not be limited to the knowledge points of a certain discipline. It covers all the relevant content, and will develop with the update of educational knowledge. Its knowledge reserve is large. It can not only retain the original knowledge points, but also continuously update new content, with diversified forms. Apply the theme learning website to cultivate students' ability of independent learning. The website resources are all available. The key is to rely on students to actively explore, discover and learn, and complete teaching tasks according to their actual situation. Autonomous learning focuses on the process of students' learning, and its initiative is in the hands of learners. With the help of theme websites, students are encouraged to be good at learning, eager to learn and diligent to improve teaching quality.

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