

# *Design Thinking and Application Guidance of Special Topic Website under the Guidance of Learning Theory*

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**Abstract:** With the continuous development of information technology, network education plays an increasingly important role in the education industry. With the development of modern educational technology and the improvement of learning theory, the support of information technology and the guidance of modern educational theory will inevitably bring about the reform of teaching mode, and networking and informatization will become an important development direction of education and teaching. The project learning website is a resource learning website designed and developed under the network environment, which is not only conducive to the innovation of teaching methods and modes, but also conducive to the cultivation of students' comprehensive quality. Based on the access and learning of the existing network platform, this paper analyzes the guidance of learning theory on the design and development of special learning website from the perspective of learning theory and teaching theory, and provides a theoretical basis for the study of network course teaching design, and discusses and summarizes the teaching design process of special learning website from the theoretical level, Thinking and summarizing the content and characteristics of each step of the system design and teaching design process of the subject learning website, and putting forward specific learning strategies, in order to provide some reference for the construction of educational informatization.

## 1. Introduction

With the continuous development of information technology, network education plays an increasingly important role in the education industry. As an important part of online education resources, the design and development of high-quality thematic learning websites has become the key to online education. From the perspective of the application of thematic websites, there are mainly two forms. One is classroom based teaching, which is only a supplementary way of classroom teaching; The other is the main form of the whole teaching process. No matter which form of special subject learning website, it can create a good environment and provide technical

support for teachers' teaching and students' learning with the help of the interactive, open, resource sharing and other characteristics of the network. It can more easily realize exploratory, research and cooperative learning, and help students develop their comprehensive quality. The advent of the information age has put forward new requirements for students. At present, there are many deficiencies in the construction of most subject learning websites: from the perspective of teaching, the teaching activities and teaching process in online courses are uneven, which can not well mobilize the enthusiasm of learners' autonomous learning, and the effect is not good; In terms of design, the learning content and the presentation of learning resources are lack of structural design, and learners are easy to get lost; The teaching evaluation methods lack the guidance of teaching strategies and so on. In network teaching, teaching and learning activities are separated in time and space. Teachers are no longer direct educators. Teaching activities are carried out around network courses, and the educational goal is achieved through network courses. Therefore, as the main body of online education, the development of high-quality thematic learning websites suitable for online education has become a very important and urgent task for the development of online education in China. In general, most of the thematic websites obviously lack the theoretical support of instructional design. The development of online courses needs the guidance of modern learning theory[1]. Research project learning website is a key and difficult point of education reform in the new era.

## **2. Theoretical Basis of Special Website**

### **2.1. Distributed Cognitive Theory**

Ed Hutchins and San Diego of the University of California put forward the theory of distributed cognition in the 1980s. They believe that distribution is the essence of cognition. Cognition is not only the cognitive activities in the brain, but also the interactive activities between people and technology tools. The theory emphasizes that communication is a necessary condition for cognitive activities, and the shared cognition among the elements of the system is realized through communication, which includes conversation, information form conversion, non-verbal communication and other forms. In the distributed learning environment, it is necessary to consider the cognitive activities and abilities of people and others, as well as the cognitive activities and abilities generated by the use of technical tools. Salomon believes that taking the media as a technical tool to participate in cognitive activities can use the media system to increase personal cognitive skills. In the design of special learning website, the distributed cognitive theory can be introduced to create a good intellectual situation for students, promote students to successfully complete the interaction of knowledge representation, stimulate learners to actively participate in cognitive practice, and obtain intellectual achievements and improve cognitive skills with the help of distributed intellectual situation.

### **2.2. Learning Support Service Theory**

The theory of learning support service is relatively mature and mainly applied in the field of distance education. With the gradual completion of the theory, several representative views have been formed, including the following.

First, two-way exchange of views. In the 1970s, John A. bass first used the two-way communication perspective in correspondence education, guiding teachers to combine learning materials with course content and students' learned knowledge, give full play to teachers' organizational role in learning materials and activities, guide students to carry out learning activities in a planned way, establish a friendly relationship between teachers and students, and avoid severe

criticism of students' mistakes.

Second, the point of view of teaching talks. Holmberg believes that students can carry out self-study activities with the help of educational institutions, specially designed course materials and two-way communication activities between teachers and students. This learning activity is a guided teaching meeting. It mainly includes the following two forms: one is the simulated teaching meeting, that is, the exchange activities between students and course materials. This course material is specially designed for students. It has the characteristics of moderate amount of information, colloquial expression, and personal conversation. It puts forward suggestions and reasons for students' learning, and gives students the opportunity to express their views. The second is real teaching talks. In a real educational environment, teachers can communicate with educational institutions and teachers. Teachers can use homework, telephone and other communication methods to guide students to carry out learning activities, so that students can clarify their learning priorities, and establish knowledge links for different courses[2].

Third, the view of providing support for students' learning. The student system is an important subsystem of the learning system. When analyzing the system, Anthony Kay and Grenville rumble first put forward the view of providing support for students' learning, mainly including arranging learning activities, guiding course selection, allocating tutors, evaluating homework, organizing mutual learning groups, recording learning process, arranging teacher-student discussions and other forms of support, This provides a valuable reference for the construction of special learning website.

### **2.3. Information Technology and Curriculum Integration Theory**

Curriculum integration refers to the organic integration of various disciplines and branches within disciplines to promote the systematic connection of various elements and components of the teaching system, so as to achieve the purpose of effectively carrying out learning activities. In the process of curriculum integration, integrating different disciplines together, promoting the formation of new structures and relationships among the elements of disciplines, guiding students to effectively master the knowledge of different disciplines, and helping to promote the development of students' comprehensive quality. Through curriculum integration, we can avoid the problems of mutual independence and disconnection between disciplines. By strengthening the internal links of disciplines, we can build a systematic subject knowledge system, which is more convenient for students to learn.

The integration of information technology and curriculum refers to the combination of advanced information technology, modern information methods and rich information resources with curriculum content to determine the teaching tasks and achieve the teaching objectives. In essence, this teaching method is to create a digital learning environment for students, let students learn the course content processed by information technology, and carry out knowledge construction activities under the guidance of teachers, so as to help students greatly improve their learning efficiency. Guided by the theory of information technology and curriculum integration, the design goal of the subject based learning website can be clarified, that is, to improve students' information literacy, master the information-based learning methods, and cultivate lifelong learning attitude and ability. Information technology plays an important role as a teaching aid in special learning websites. Through the diversified utilization of information resources, the functions of special learning websites can be enriched, so as to reflect the organic integration between different disciplines and between information technology and subject teaching.

### **3. The Guidance of Learning Theory to the Design and Development of Special Learning Website**

#### **3.1. The Inspiration of Behaviorism to Development**

Behaviorism theory was put forward by the famous American psychologist Watson. This theory is also called stimulus response theory by the academic community. The reason why it has been recognized by the academic community is closely related to its own characteristics. In general, the characteristics of this theory can be attributed to the following aspects: first, it emphasizes the role of learners' self-regulation; Second, it emphasizes the organic combination of behavior and cognition; Third, adhere to the attitude of objectivism. Thorndike and Skinner are the two main representatives of the theory. The theory advocates the study of explicit behavior. They believe that external stimuli are the main reason for learners' learning. Although such stimuli will cause learners' own psychological changes, the impact of such changes on learning is basically negligible, that is, through the control of external stimuli, behavior can be predicted and controlled, So as to control and predict the learning effect. Sandyk's "trial and error theory" regards learning as a process of continuous trial and error, in which learners can master knowledge. After in-depth study of sandyk's trial and error theory, Skinner put forward a brand-new theory, that is, the reinforcement dependence theory of stimulus. Through the reinforcement of a certain process, the connection between stimulus and response can be formed[3]. The faster the feedback speed, the better the effect of reinforcement can be achieved. It is important to clarify that the theory proposed by these two scholars and the related experiments they conducted did not consider the exertion of students' subjective initiative, but the practical value of the theory itself was not affected.

#### **3.2. The Enlightenment of Cognitivism on Development**

There are great differences between cognitive theory and behaviorism theory in essence. It takes rationalism as its philosophical background and believes that learning is a process of learning a variety of new knowledge on the basis of existing knowledge. This view emphasizes the dynamic role of cognitive subject and its important position in the learning process. Piaget, Ausubel and Bruner are the representatives of this theory. The theories of generative cognition, meaning learning and discovery learning are the main theories they put forward. Thematic learning websites provide learners with combined links of various knowledge points. Through the research, it is found that this combined link mode of knowledge points in websites is very similar to learners' thinking model, which enables thematic learning websites to integrate the design of learning strategies into the knowledge system. In this way, learners' subjective factors can be brought into full play in the learning process, and the relationship between external things can be gradually internalized, So as to construct the cognitive structure system belonging to learners. At this time, the whole learning process is to continuously improve and develop learners' psychological structure through assimilation and adaptation under the interaction of individual and environment. Assimilation here refers to the integration of information provided by external stimuli into learners' own cognitive structure; Adaptation refers to the process in which learners' cognitive structure changes after being stimulated by external factors. In the subject based learning website, the teaching task of teachers has changed to a certain extent. It is no longer blindly indoctrinating knowledge, but stimulating learners' interest and motivation. When students have a strong interest in learning, they will really change from passive knowledge recipients to the main body of learning knowledge. In this way, the learning effect will naturally be significantly improved.

### 3.3. The Enlightenment of Constructivism on Development

Constructivism theory is based on the theory of cognitivism, which was first proposed by Piaget of Switzerland. This theory emphasizes that the learning subject carries out diversified learning through various channels and information sources, and then internalizes it into their own cognitive structure, establishes an overall understanding of things, and completes the activity of meaning construction. In this process, the internal intelligence action of the learning subject will be externalized into practical operation, and the subjective thought of the learning subject will be practiced in objective practice. Constructivism believes that knowledge is not infused by others, but acquired by learning subjects through communication and cooperation with others with the help of learning situations and learning materials. Therefore, under the guidance of constructivism theory, the design and development of special learning website should not only consider the realization of teaching objectives, the determination of teaching content and the characteristics of teaching objects, but also pay more attention to the stimulation of learners' learning initiative, and help learners construct knowledge system on the basis of original experience through scenario creation, interpersonal communication and other methods. Especially in the network environment created by the subject based learning website, modules such as group discussion, voice communication, question answering, test and evaluation should be designed and developed to encourage learners to actively explore the unknown field, and then trigger cognitive conflict between new experience and old experience in the unknown field, so as to realize the construction of new knowledge on the original knowledge system and reorganize the knowledge structure. The learning process emphasized by the special learning website should abandon the traditional simple accumulation of knowledge and information, but guide learners to use the rich knowledge and information provided on the website, optimize and choose learning strategies, further expand the scope of learning on the basis of their original knowledge and experience, grasp the internal relationship between different disciplines, so that a knowledge point can re combine the knowledge of different disciplines, so as to enhance their understanding of objective things.

### 3.4. The Enlightenment of Humanism on Development

Humanistic learning theory is developed on the basis of humanistic psychology. The theory emphasizes the importance of learning emotion and believes that helping learners achieve their own needs is the ultimate goal of education[4]. Learning is dominated by individuals. It is an activity process initiated by individuals and fully invested in it. The theory mainly includes the following viewpoints: learning is the formation of human nature, and it is the process of meeting self needs and realizing self will; Learners occupy a dominant position in learning activities, and they must be respected in the process of learning; Good interpersonal relationship is the key condition to ensure the effectiveness of learning. It plays a role in creating a harmonious atmosphere in the process of teaching and learning. Humanistic theory advocates giving learners freedom to play. This freedom can enhance learners' safety psychology and make them dare to explore new knowledge in uncertain fields. Therefore, in the design of the subject based learning website, the initiative of learning can be handed over to learners, so that they can learn easily and happily in the virtual environment provided by the website, which is an important premise and foundation for promoting the free development of learners. In the virtual environment, all learners' identities are equal. Through frequent interaction and communication, they are more conducive to the improvement of learning effect.

## 4. Research on the Learning Strategies of Special Learning Websites

### 4.1. Brief Analysis of Elements

In the process of learners' learning, learning strategies play a very important role. It can not only regulate learning, but also control learning. In view of this, learning strategies should be composed of the following three elements: metacognitive knowledge and experience, metacognitive monitoring, and learning methods. From the perspective of essence, metacognition is people's self-awareness and control of cognitive activities. In actual learning, under the effect of metacognition, the results obtained from metacognitive activities are essentially the implementation process of metacognitive monitoring. This process is reflected in the thematic learning website, which is to enable learners to better grasp the formation of learning strategies. Therefore, the project learning website can be designed from the following three aspects.

First, to enable learners to be aware of and experience learning situation variables from the project learning website, the project learning website should be designed to enable students to be aware of and experience their own cognitive process; The level of ability you can achieve at present; Objectives, tasks, requirements and styles to be achieved through learning; Their own learning environment; How much time is available for learning; Where can I get help when encountering difficulties.

Second, the designed project-based learning website should enable learners to be aware of the available learning methods and experience the relationship between learning methods and learning variables[5]. According to this relationship, learners can clarify the scope of application of various methods, and then select the most effective one from a variety of learning methods for learning.

Third, students can evaluate the selected learning method according to the learning effect, so as to judge whether the learning method is applicable, and take it as an important way to improve and perfect learning. The process of metacognitive experience is essentially the process of learners' various intellectual activities. Therefore, students can evaluate the learning process according to their own experience of intellectual activities and make appropriate adjustments according to the evaluation results. The resources in the project learning website are not only very rich, but also can be shared. At the same time, it can enable people to interact with each other in zero space-time distance. Therefore, the design of learning content cannot be limited to the simple transplantation of textbooks and blackboards, but through the in-depth and specific analysis of learners' metacognitive level, it is necessary to create a targeted learning situation, and build a metacognitive model in all aspects related to learning.

### 4.2. Formation of Strategy

The ultimate goal of the formation of learning strategies is to better promote learners' learning through the construction ideas and methods of special learning websites, so that they can understand and master more abundant knowledge in learning, which will help to further improve the learning effect. Linchongde (a famous psychologist in China) once put forward such a view in his own works: learning strategies can be further improved as an effective teaching content through the way of teachers' teaching[6]. For a long time, the main learning task of students in classroom teaching is to accept the knowledge imparted by teachers and form skills through repeated training. At this time, students are passive recipients, and their learning is not subjective and voluntary. Although teachers' explanation of knowledge is more systematic and comprehensive, it makes students' thinking space more and more narrow, and students must spend a lot of time memorizing knowledge. At the same time, they have to practice repeatedly to consolidate their knowledge. They hardly have more opportunities and time to internalize the acquired knowledge and skills, and internalization is the

key to the formation of learning strategies. In the past, classroom teaching was based on whether students can learn. As long as students learn, teachers will complete the teaching task. As for whether students can learn after learning, teachers generally pay little attention to it. For this reason, in the process of education reform, teachers should be allowed to teach fish instead of fish. In the process of designing the project-based learning website, we can refer to the learning strategy elements mentioned above to make learners aware of the goals they want to achieve through learning, how to get help when they encounter unsolvable problems in learning, provide the most reasonable and feasible method for their learning, and how to use the method to operate, so that the knowledge imparting related to learning strategies and the cultivation of learners' ability can be carried out at the same time, So that they can form learning strategies and gradually improve their learning strategies in the continuous learning process and under the interaction of teaching and learning.

## **5. The Instructional Design of Subject based Learning Website**

Teaching theory is a science that studies the general laws of teaching in order to solve teaching problems. Instructional design is the process of scientifically solving teaching problems and proposing solutions. In order to solve teaching problems, we must follow and apply teaching laws. Therefore, teaching design should be based on teaching theory. The interaction between teaching theory and teaching design will inevitably promote the development of both sides.

The basis of developing special subject learning website is instructional design, which can provide basis for the design of special subject website. The ideal way of optimizing learning is instructional design[7]. Instructional design is actually the use of system analysis technology to determine goals and study teaching problems, build solutions, operation strategies, evaluation results and modify faults. When designing a learning website for special subjects, we should reasonably apply the concepts and methods of scientific system, determine the goal for a learning topic, collect relevant knowledge, select information resources according to the basic characteristics of learners, organically combine system procedures to build a knowledge system that meets the actual situation, achieve the goal of Online communication and communication, and also provide a monitoring system for self-evaluation, It mainly includes the determination of objectives, analysis of website functions, analysis of student characteristics, analysis of application environment, determination of project learning objectives, design of system structure, etc.

### **5.1. Define Goals**

In the process of instructional design, the basis for positioning the development value of the website is to determine the goal. In order to ensure the effectiveness of the design of the special learning website, we should reasonably analyze the necessity, accurately study the practical status, theoretical basis and application of the special learning website. In addition, we also need to investigate the construction of the special learning website, and analyze the advantages and disadvantages in the construction, so as to build a website that meets the needs, Change the deficiencies of the current website, and provide basis and reference for future teaching.

### **5.2. Analysis**

When analyzing instructional design, we should first locate the function of the website, and analyze the environment and learning characteristics of the website.

### **5.2.1. Positioning the Function of Special Website**

The positioning function of the project learning website can be analyzed from the following aspects. First, the system structure should be established on the basis of the project to provide reference for students' learning and teachers' teaching. At the same time, the project learning website should have the function of regularly updating knowledge. Second, build a thematic learning database to provide a basis for students and teaching to collect data. The thematic resource database should have the functions of maintaining, deleting, updating and adding data. Third, it provides a space for teachers and students to discuss and communicate, and it can also provide detection feedback and online evaluation system.

### **5.2.2. Analyze the Characteristics of Learners**

The analysis of learners' characteristics is actually to understand the characteristics and preparation of learners and provide reference for the design of teaching websites in the future. The actual analysis includes two aspects of learning preparation: first, learners engaged in a specific science have certain basic skills and knowledge, as well as the attitude and ability to understand knowledge, which can also be called starting ability. Second, the psychological, social and physiological characteristics of learners engaged in learning mainly include personal expectations, learning motivation, cognitive maturity, gender, age, life experience, etc., which are also called general characteristics. Therefore, the characteristics of analytical learners are mainly to analyze the prediction of learning readiness and initial ability, and to study learning needs and learning status. In the process of designing a learning website, we should also study the overlap of the experience of the knowledge receiver and the transmitter. In the process of design, the learners can crack the password. If there is no decryption knowledge, we can not build a common experience. At this time, there is a problem of different transmission.

### **5.2.3. Analysis and Application Environment**

When designing and developing a special learning website, in order to meet the environmental needs, we should analyze the expected operating environment from three aspects. First, we should have an official website in the design of the special learning website to ensure that users can run the special learning software[8]. Second, when designing project learning software, it should have the support of basic hardware and system software, such as memory and server. Third, topic learning websites need to be able to use netscape4.5 or ie5.0 to retrieve and browse websites.

## **5.3. Select the Content of the Topic Website and Determine the Teaching Objectives**

A lot of knowledge can be designed when selecting the learning content of the topic website, such as cultural relics, natural science, culture and art. The topic content can be designed on the basis of solving the teaching problems to meet the curriculum standards. Basically, it is the teacher's whim. After the topic is determined, in order to accurately understand the meaning and culture of the topic, the international brainstorming and other methods are used, It is mainly to gather the design and participants. After the design topic is given, the participants will design around the theme. There is no restriction in the design process. All participants should provide as much content related to the theme as possible, and then sort out the words provided by the participants, build an inverted tree structure, and then analyze the learning characteristics, screen reasonable content, and establish a thematic framework with clear information. After the content of the topic is determined, the goal of accurately building the learning topic website is to organically combine the relevant content. The topic learning website is generally the integration of research-based learning and



traditional teaching, and focuses on showing the complementary characteristics of advantages. Therefore, the basic goal of the design of the topic learning website is different from the traditional teaching method. It should not only pay attention to the cognitive domain goal, but also pay attention to the non-cognitive goal. At the same time, it should also analyze the network teaching function Students' abilities and emotions. When determining the goal of the special topic teaching website, we should reasonably apply the lubum teaching classification method to divide it, and form three goals of motor skills, emotional field and cognitive field.

## **5.4. Design**

### **5.4.1. Design Knowledge Structure System**

Compared with the traditional unit design sequence design course, the content of the project learning website is different. The traditional teaching method will separate the systematicness and integrity of knowledge. The project learning website is mainly carried out on the basis of the project, reorganizing the system structure, establishing the cognitive structure and logical knowledge structure of learners, and establishing and re dividing the knowledge points. The establishment of knowledge structure is analyzed from the aspects of expansion, integration and relevance. Relevance is actually the integration of a knowledge point and knowledge points between the same disciplines. The degree of integration is actually the integration of a variety of different scientific knowledge. Expansibility is actually the integration of knowledge points in different ways.

### **5.4.2. Design and Select Information Resources**

When designing the subject learning website, we should reasonably choose the form of information resources, and make clear that the use goal is the most critical content in the system, mainly including providing demonstration, creating situations, presenting facts, research findings, etc., and then reasonably select the subject content through the basic theory, learners' characteristics, and subject content[9]. For example, students can have a comprehensive understanding of knowledge and skills according to the text form, and highlight the scenes that are not easy to obtain based on the emotional experience in reality according to the multimedia presentation form, such as videos, pictures, etc. The design of learning topic website not only needs to reflect the structured knowledge, but also should reflect the characteristics and advantages of the network, so as to provide the resources for learning engineering major. At the same time, it can also use the characteristics of topic science to provide knowledge tools for learning, such as drawing tools, calculators, dictionaries, etc.

### **5.4.3. Design Learning Strategies**

From the perspective of students, learning to learn is the most critical, and self-control knowledge is the most effective. Learning to learn is actually learning strategies. Learning strategy mainly means that in order to meet the learning methods, learning skills and learning rules formed by learning objectives in the learning process, learners recognize learning tasks, reasonably control the learning process and call learning methods in the learning environment; Learning strategy is mainly to implement the learning monitoring system. In the design of special subject learning website, the learning strategies are analyzed intensively. The basic goal is to use the special subject website to learn and organize. In the special subject learning, the problems of how to learn, when to learn, what to learn and why to learn are solved. Different learners will apply different learning strategies in the topic website. Therefore, when designing the topic website, we should study the situation and differences of different learners, and put forward several reasonable learning strategies

to provide learners with learning methods that meet the actual situation. In the process of learning, we can carry out independent learning according to the website resources, and can also publish personal suggestions in learning forums for inquiry learning and cooperative learning.

#### **5.4.4. Design Autonomous Learning**

Autonomous learning is actually self discussion and self-learning, which generally includes the following self-learning methods: random access teaching, anchored teaching, scaffolding teaching, etc. when designing the special learning website, students should be guided to carry out autonomous learning according to clear navigation strategies, sound only structure and standardized evaluation system to ensure that they can fully understand the knowledge structure.

#### **5.4.5. Modification and Evaluation**

When designing a project learning website, we should evaluate the effect of using the website, mainly including macro and micro evaluation. First, we should analyze it from a macro perspective, which is to evaluate the guiding ideology and construction of the project learning website; Second, from a micro perspective, it is mainly to evaluate the organizational structure, content selection, topic determination, design resources and other contents of the special learning website, and establish the formative evaluation of the special learning website by means of expert argumentation and questionnaire.

### **6. System Design of Subject Based Learning Website**

When designing a special topic learning website, after fully studying the teaching design work, we can complete the analysis of learners' characteristics, determination of learning content, evaluation and diagnosis, design of knowledge structure and other related work. The above content can ensure the scientificity of the design website and teaching and learning habits, but this effectively reflects the above characteristics and shows the business of the website. At this time, we should apply the media information and file form in the special topic website, To establish a complete project learning system, cultivate students' basic quality and ability, and systematically design the project website[10]. The design of the project website system mainly includes the design of navigation strategy, design interface, design interactive interface and design functional structure.

#### **6.1. The Principle of Designing the Website System of Special Subject Study**

First, interactivity. There should be some interactivity in the design of special learning website. Learners can input information through mouse, keyboard and other devices through the website interactive interface, and can also control and query operations. The interactive interface website can provide users with analysis, reading and judgment information. Second, operability. For the convenience of teaching and students, the design should ensure high transparency, flexibility and consistency between the system's different locations and actual interfaces and the operation interface, and be able to tolerate inappropriate operations. Third, the interface is friendly and intuitive. When designing the special website system, it needs the advantages of clear interface, consistent overall style, beautiful interface, simple operation, clear conditioning, etc. from the perspective of users, it does not need a lot of equipment, convenient operation, and can provide accurate and detailed information. Fourth, cooperation. The collaborative design of thematic websites can enhance the role of cultivating the spirit of cooperation and advanced cognitive ability. The network system is an ideal learning environment for people, so the advantages of the network should be fully displayed in the design. Fifth, scientific. When designing a special topic website, we should accurately express scientific knowledge and write smoothly. At the same time, we also need

to meet the basic needs of logical structure design and cognitive structure. We should use a variety of strategies to reflect the attention of teaching for students, guide students to actively think about the learning process, and cultivate students' cultural quality and innovation ability[11]. Sixth. Design skill. When developing and designing a special learning website, we should pay attention to the skills of practical script language and materials, such as selecting website design materials, using the form of script language, etc., which are basically through the experience and skills summarized daily.

## **6.2. Design Website Functional Structure**

The functional structure of the website can present the learning content of each part, reflect the teaching function and framework of the website design as a whole, use the non-linear hypertext method to organize multimedia information, so as to meet the basic needs of the design, and publish it on the Internet. When designing the special website, determine the knowledge content, consider the cognition of teaching objectives, and comprehensively analyze the perceived purpose, limited perception, and Pay attention to continuity, logical thinking regulation, etc., and clear structure are the principles throughout the design to prevent misleading learners. When designing the functional structure of the website, it mainly includes the tool module and content module with parallel relationship. The main navigation of the website is designed according to the above modules. All pages of the website have the main navigation. Sub modules are divided according to the basic function and content structure of the module, including basic units. The basic units may contact other module units to realize hypertext connection, but the path in the design is relatively simple. There is a certain contingency, which will not form a relatively complex structure. The design structure can meet the basic needs of learners and the laws of divergent thinking and cognition, and can also provide a good environment for learners. In addition, when designing the functional structure of the website, attention should be paid to the overall style of the design, mainly including scenarios, learning objectives, software forms and learning contents, On the basis of meeting the basic needs, the diversity design is carried out, and the development software is consistent.

## **6.3. Design Navigation Strategy**

Using hypertext transmission protocol to design the Internet can provide images, text and other hyperlink information for websites, so that the links between web pages can be flexibly applied. Dozens or even hundreds of links are often stored in web pages. Although learners can make flexible choices in application, it will also lead to the phenomenon of getting lost in the use of hyperlinks. Therefore, good navigation in the design system is the key, Navigation strategies should be reasonably set up in the design of subject learning websites, including retrieval navigation, knowledge point navigation, help navigation and clue navigation. First, knowledge point navigation. Setting navigation when dividing a knowledge point is generally a way for instructional design experts and instructors to highlight the design concept. When dividing specific learning knowledge points, it is necessary to analyze the logical structure and coverage of subject learning knowledge. Knowledge navigation points can be used as the basis for learning path selection to a certain extent. When learners learn knowledge points, special learning websites can provide them with connected knowledge points, which is convenient for learners to choose their personal interests and learning goals. In addition, when learners enter the evaluation mechanism, they can take personality tests. If the answer is inappropriate or there are errors, the system can prompt them. Second, clue navigation. Learners use the specific front-line learning path of the website, which is mainly to avoid the problem of lost navigation, and is suitable for application in complex, multi-level system navigation[12]. Third, frame navigation. In fact, it is to use the website framework to navigate, and use the graphical way to display and super connect specifically, mainly including the continuity between nodes, and provide users with the connection information of the special website. Based on

this, learners can directly learn and operate. Third, retrieval navigation, using the special learning website, learners can search the Internet information, retrieve the knowledge content, and reasonably use the network resources.

#### 6.4. Design Interactive Interface

The network interactive interface is also called user interface and man-machine interface. In fact, it is the channel for information transmission between networks, computers and people. Users can control the input and query of information by using touch screen, mouse and other users. The local computer of the interface provides users with data information for analysis and reading. The information transmitted through the network, the interactive interface can process remote information and return results to the system. The design includes the following design forms, such as hot words, navigation menus, buttons, hot zones, dialog boxes, hotkeys, etc., which can provide information for communication among students, teachers, and teachers and students. When designing the interactive interface, the basic principles of reactivity, reliability, consistency and simplicity should be met. Simplicity is mainly that the operation is convenient and simple. Using the mouse to directly operate the interface, students do not need to remember any commands, so it is easy to learn and clear at a glance. Consistency mainly refers to the rational application of similar style content in web pages, and interaction. There is a consistent operation interface when outputting and inputting. Generally speaking, reliability is to provide learners with less errors and high reliability interface on the basis of improving learning efficiency. When learners make mistakes, they should have an error management system[13]. Reactivity mainly refers to that learners' websites make response actions in learning, can judge and analyze various forms of correctness and error, and search engines can provide detailed information for learners.

#### 6.5. Design Interface

Generally speaking, interface design is similar to the overall style of website design. The design of all web screen images mainly includes the following contents. First, design the layout. During the design process, we should highlight important information, design eye-catching key knowledge, use the screen as efficiently as possible, with beautiful lines and smooth composition, and meet the cognitive characteristics and visual rules. Tips, teaching information, navigation information, etc. in web pages can be used as interactive goals, and the composition should be reasonably arranged in the design layout. Second, color matching. In the design process, we should pay attention to the text color, background color, picture color, hyperlink format, etc. of the website, and pay attention to the emotion represented by color and the relationship between black and white. Third, design text. Text is an indispensable part in the design of special learning website. Compared with traditional network multimedia teaching software, the design of special learning website text should make a reasonable analysis of the restrictions, and use the text font as reasonably as possible when browsing the web page on the Internet. Users are uncertain when using the browser to determine the text font in the design.[14] Generally, all websites are designed using Song typeface as the default font.

### 7. Conclusions

With the upgrading of information technology, the learning media is no longer limited to paper media, and the special website media has gradually become another learning choice, serving the diversified learning needs of students, and promoting the transition of learning mode from receptive and individual to independent, exploratory and cooperative. Learning theory is a theoretical branch of pedagogy. Using learning theory as the theoretical basis, this paper introduces learning theory into the construction of special learning websites, analyzes students' learning behavior patterns of

different behavior types and psychological needs of different psychological representations, highlights the learning strategies of special learning websites based on learning theory, and summarizes the principles and precautions of teaching design and system design of special learning websites. On this basis, this paper expounds the content and characteristics of each step of the teaching design process of online courses in detail, aiming to help front-line teachers open up a new vision of construction and break the traditional concept of website construction. We hope that through research, we can improve the standardization and scientization of the development of the special learning website, improve the service ability of the website, and better play the role of the special learning website in the education service for students.

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