

Research on The Application of J2EE in The Design of English Web Reading Platform

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Abstract — According to the development trend of the current situation of College English teaching and network technology, the combined use of Web2.0 and J2EE development standard realizes the Web module of network English reading platform in terms of: user management, resource management, online reading, online testing, information statistics, and other functions based on the interactive forum. In practical application, good results have been achieved in improving learners' reading interest and ability training. This topic is in the Java development environment using My Eclipse as the development tool and SQL Server 2005 as the database of the system. Through the Tomcat server and using B/S three layer architecture, the system has good maintainability and reusability. At the same time, in the process of software development, the use of J2EE design patterns and object-oriented design and development methods, resulted in easy system design and implementation. In terms of software development and design, this paper expounds in detail the process of the development and implementation of College English Network Reading System from requirement analysis, system design, development environment configuration, system realization and other aspects.

Keywords- J2EE technology; English reading; network platform

I. INTRODUCTION

The social life of information and economic globalization, the importance of English has become increasingly prominent. English, as one of the most important information carriers, has become the most widely used language in every field of human life. English as a compulsory course for elementary education, in order to make the students comprehensive language ability to use to develop, in their language learning process in the formation of positive emotional attitude, active thinking and bold in practice and improve cross-cultural awareness and the formation of independent learning ability, it is necessary first to make them obtain the ability of English reading. Only by allowing them to acquire the ability of listening, speaking, reading and writing, they can effectively evaluate the learning effect and form effective English learning strategies. To understand the cultural connotation and background of the communication, and to adopt the attitude of respect and tolerance to the foreign culture. And the network with its convenience, interactivity, super time and space, as well as the sharing of resources, to study the teaching of reading for students to obtain the ability to read more possible.

II. ENGLISH READING TEACHING UNDER THE NETWORK ENVIRONMENT

A. network environment

The environment and a certain space range. From the point of view, the network environment can be understood as: learners can use a variety of tools and information resources and mutual cooperation and support to solve the

problem of the goals and activities in the workplace in the pursuit of.

From the macro point of view, the network environment can include the virtual reality world. It is not only the cyber source and network tools work place, including learning atmosphere, learning motivation, interpersonal relationship, teaching strategies.

From the teaching design of our practical point of view, the network environment is more of a combination of cyber source and network tools. It includes the basic components as follows:

- (1): facilities such as multimedia computer, Web classroom, Internet campus network, etc.
- (2): the resources provided by the diversification of digital processing for learners can share learning materials and learning objects;
- (3) Platform: the software system to show the learning interface and the realization of the teaching and learning activities on the web;
- (4) Communication: the guarantee for the realization of remote consultation and discussion;
- (5) Tools: a tool for knowledge building, practice, and problem solving.

B. network environment

The teaching is the aim, content and process of the teacher in the school environment according to the curriculum standard, which is planned and organized by the students. The network reading teaching is in support of a certain network environment, students with some basic information ability, teachers based on these premises, according to the curriculum standards set by the goal, the content, the process of students by the implementation of

the plan, organization, culture and development of students' reading ability education activities.

Campus network and Net Inter have a large number of students to read the resources. As long as you start the search engine, the network will provide you with the relevant resources you want to get. You can choose to get it. When the students have some knowledge of network and information skills, teachers can design their reading direction according to the teaching goal and the students' knowledge level. This is also a great challenge to the traditional teaching of reading materials. In addition, the network courseware made by teachers not only can effectively navigate the students' reading process, but also can effectively achieve the teaching goals, and effectively improve the students' reading ability.

C. *network environment*

At present, there are three versions of the Java 2 platform, which is applicable to small devices and smart cards of the Java 2 platform, Micro Edition (Java 2 platform Micro Edition, J2ME), applicable in desktop Java 2 platform, Standard Edition (Java 2 Platform Standard Edition, J2SE), applicable to create server applications and services of the Java 2 platform, Enterprise Edition (Java 2 Platform Enterprise Edition, J2EE). J2EE is a system architecture that uses Java 2 platform to simplify the complex issues related to the development, deployment and management of enterprise solutions. J2EE technology foundation is the core of the Java platform or Java 2 Platform Standard Edition, J2EE not only consolidate the standard edition has many advantages, such as "write once, run anywhere" the characteristics, convenient access to a database JDBC API, CORBA technology and can protect data security model in the application of Internet and so on, and also provide the full support of XML technology and the EJB (Enterprise JavaBeans), Java servlets API, JSP (Java Server Pages). Its ultimate goal is to become a business developer can significantly shorten the market time of the system structure.

J2EE platform is constituted by a set of services, application program interfaces (APIs) and protocol, it provide functional support to the development of multi-layer application based on Web below of 13 kinds of technical specification of J2EE were simple description, the internal logic diagram as shown in Figure 1 and 2.

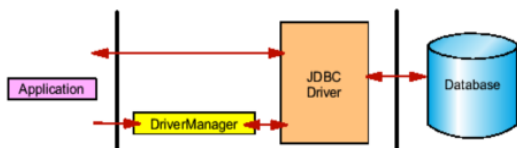


Figure 1. J2EE technology internal data stream.

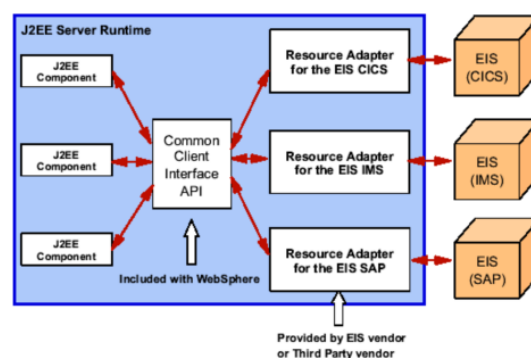


Figure 2. Internal logic diagram of J2EE Technology.

III. THEORETICAL BASIS FOR THE DESIGN OF NETWORK ENGLISH READING TEACHING

A. *English Teaching Psychology*

English teaching psychology tells us that: the learning motivation of the students; students in the process of attention and interest in learning; students to learn the memory of knowledge and the old knowledge and experience based knowledge transfer and divergent thinking are the main factors that influence the English reading ability of the formation of the. At the same time, to form a kind of ability, must in practice from low to high, from small to large, more and more training, Practice makes perfect. Coincidence is the ability to form a performance.

B. *English Teaching Psychology*

Constructivism emphasizes that learning should be student-centered, require students to become the subject of complex cognitive processing, active constructors of knowledge meaning. Constructivism theory is that learning is not a passive acceptance of information stimulation, but active construction of meaning, to their existing knowledge and experience based, on the new information to realize the coding and, get the meaning of the own construct their own understanding. Learners should help with the help of others in the context of social culture (including teachers and partners), to use the necessary learning materials, to gain knowledge through the construction of meaning. "Situation", "cooperation", "conversation" and "meaning construction" are the four main factors in the learning environment.

C. *Instructional design theory*

Teaching design theory tells us: the teaching design is concerned with the specific teaching problems, that is, what kind of methods and steps to design the teaching system, how to make the actual teaching more in line with the teaching rules. Teaching design is to seek the solution to the problem of teaching; the main task of teaching design is to provide a method to achieve teaching objectives. According to the theory of teaching design, we in the teaching of English reading conscientiously do a good job teaching design, so that it conforms to the teaching content, teaching

environment, also in line with the teachers teach and students learn to develop rules.

D. Correlation formula

The main algorithm of the system is the content filtering algorithm; the related formula is as follows:

$$\delta_i^{(n_i)} = \frac{\partial}{\partial z_i^{(n_i)}} \frac{1}{2} \|y - h_{W,b}(x)\|^2 = -(y_i - a_i^{(n_i)}) \cdot f'(z_i^{(n_i)}) \tag{1}$$

$$\begin{aligned} \delta_i^{(n_i)} &= \frac{\partial}{\partial z_i^{(n_i)}} J(W, b; x, y) = \frac{\partial}{\partial z_i^{(n_i)}} \frac{1}{2} \|y - h_{W,b}(x)\|^2 \\ &= \frac{\partial}{\partial z_i^{(n_i)}} \frac{1}{2} \sum_{j=1}^{S_{n_i}} (y_j - a_j^{(n_i)})^2 = \frac{\partial}{\partial z_i^{(n_i)}} \frac{1}{2} \sum_{j=1}^{S_{n_i}} (y_j - f(z_j^{(n_i)}))^2 \\ &= -(y_i - f(z_j^{(n_i)})) \cdot f'(z_i^{(n_i)}) = -(y_i - a_i^{(n_i)}) \cdot f'(z_i^{(n_i)}) \tag{2} \\ W^{(l)} &= W^{(l)} - \alpha \left[\left(\frac{1}{m} \Delta W^{(l)} \right) + \lambda W^{(l)} \right] \\ b^{(l)} &= b^{(l)} - \alpha \left[\frac{1}{m} \Delta b^{(l)} \right] \tag{3} \end{aligned}$$

IV. THE DESIGN OF ENGLISH READING TEACHING

According to the definition of the network reading teaching mentioned above, in the network environment, the teachers have become the organizer, the organizer and the navigator of the reading teaching. Its main task is to design the network reading environment according to the English curriculum standard. On the other hand, students from no choice must be reading materials assigned by the teacher, according to the teacher's methods to complete practice without the gradient becomes according to their interests, preferences, and the level of reading content, and selectively completed their own understanding of the practice. Or to discuss and communicate. Through the online selection - Online expression - online evaluation and other steps of independent learning. Both teachers and students through the feedback system of the collection and transmission of information, each one takes what he needs, and common progress.

The framework of the teaching process of English reading based on the network environment can be described by the following chart.

This paper is a one-hour lecture on the topic of fault current limiter presented to engineering students. The lecture has started with the causes and effects of fault on power systems. The traditional ways of fixing fault current have been described. The detailed analysis of two types of fault current limiters: based on magnetic materials and high temperature superconductor materials have been presented. With some modification (elimination of mathematical part) the lecture can be presented to general public.

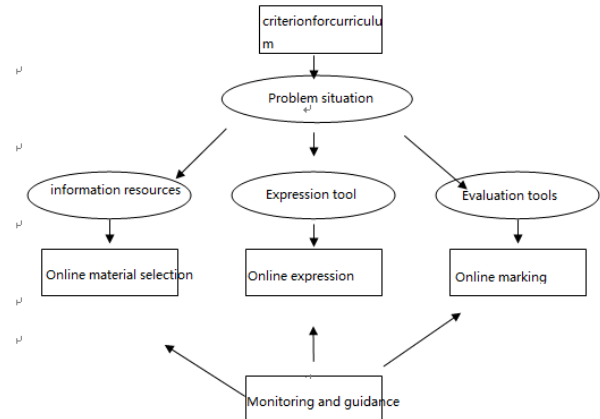


Figure 3. System function block diagram.

A. Correlation formula

Teachers are the organizers, organizers and navigator of network reading teaching. Its work is to design the network teaching environment. Including information resources, problem scenarios, communication tools, expression tools, evaluation tools, and other design.

1) *Reading information resources design*

Reading information resources, including the main text of the text reading resources and extra-curricular expansion of information resources.

For the main text of the text reading materials, teachers can organize the text, or add pictures, charts, icons, etc., to help students understand the sentence, the effect of the article. So that students learn how to read the method. The teacher can make the network courseware or put into the resource base, which can be used to support the teaching of reading course. (Such as the following reading problem scenario design)

For the extensive reading extracurricular information resources, teachers must be classified according to the subject of the article, difficulty etc. Topics such as science, history, people, sports, life and learning..... Etc. The difficulty from easy to difficult divided into A, B, C, D four grades. Each level has a certain number of readable articles on various subjects. These are put into the repository, to read the website of the form to the students, for students to choose to use.

At the same time, it can also provide some websites and search engines for students to expand their information resources.

2) *Reading problem scenario design*

In the teaching of English, the reading problem scene design is the main way to help the students to read, find out the key points of the article, and check the understanding degree of the article. At the same time, it also provides some indexes for reading evaluation. The reading problem scene design can be expressed as:

(a) Simple questions for this part of the text comprehension include the yes or no questions and true or

false questions, mainly to test the students' mastery of the information, also can exercise their listening, ask and answer can be done by the students themselves.

(Choose) the best answer B this is to allow students to grasp the main points of the article and to guide students to think about the analysis, the basic problem of training thinking.

(c) Complex questions for this part of the text comprehension. Points for the "five w-questions" namely to where? When? Who? What? Which? At the beginning of the problem and find the main idea. These problems can cultivate the students' speaking level (verbal or flow area expression), improve their generalization ability.

(Questions) for deeper comprehension D (Why-Questions) these issues are conducive to the development of students' thinking, requiring them to have a deeper understanding of the article, from the surface of the known content of the hidden content. In addition to these problems, teachers can also allow students to design questions and answers in the discussion area. Sometimes, students can put forward some clever problems, and will give a reasonable answer. For example: in the SEFC2 there is an article about CUSTOM articles. Students after reading it put forward a very good question, why don't the Arabs use their left hand fingers but their right hand fingers only. Students are also given a quite satisfactory answer -- that's because they often use their left hand fingers when they go to WC. They think their left hand fingers are very dirty. Whether the answer is through their thinking or through extra-curricular reading to, for them is to obtain knowledge.

(E) The article Rewrite. Let students use the original article 1/3 or 1/4 words to rewrite. To write it, students must have a good grasp of the key points, key words. To have a rich vocabulary such as synonyms, synonyms and antonyms. In order to use the simple language, the correct syntax to express the original meaning of the complete. This is a good way to exercise students' inductive ability and written expression ability

(F) Discussion teachers can according to the material content of the design discussion questions, to cultivate students' divergent thinking. The teachers can improve their teaching from the students in the discussion. Each one takes what he needs, and common progress.

The SEFC Book2A Lesson34 Part3 for example, reading problems of its design scenario.

(A) True or False

* The Mediterranean lies between Asia and Africa. (F)

* Water pollution is caused by waste from factories and cities. (T)

1980 an oil tanker * in hit a rock off the northwest coast of Alaska. (F)

*The Mediterranean has only one narrow entrance to the ocean in the west. (T)

(B) 5W Questions

*What is the general cause of water pollution?

*Where is the Mediterranean?

*What problems do lakes have?

*When did a bad accident happen off the north coast of Alaska What s the? "Result?

(C) Why - Questions

*Why is the Mediterranean not able to clean itself once it is polluted?

*Why did the accident in1989 off the northwest coast of Alaska cause so serious result?

(D) General idea of the part and what lesson we can get.

(E) Discussion: Suppose you are mayor of Guangzhou, how can you improve the condition of the Pearl River?

3) *Design of communication tools and expression tools*

Communication is the guarantee for the realization of remote consultation and discussion. Communication and expression are always linked. The use of Web classroom teaching of English reading, students must have certain knowledge, skills and computer network related knowledge and skills. Therefore, in order to reflect the students' reading process in real time and dynamically, we can use the BBS area or the electronic mailbox design, let the students use them to find the study partner, discuss the object and so on. In order to cultivate students' reading interest, master the method of solving problems, and gradually form reading ability.

Such as the above mentioned in the case of the design of the students by the example of the design problem also reflects the communication tools and expression tools for the network to provide the help of reading teaching.

4) *Evaluation tool design*

Evaluation is an important part of English curriculum. Scientific evaluation system is an important guarantee for the realization of curriculum objectives. In the study, through the evaluation of the students to continue to experience progress and success, to know themselves, to establish self-confidence, to promote the comprehensive development of students' comprehensive language ability. At the same time, teachers can get feedback from English teaching, reflect on their own teaching behavior and adjust appropriately, and promote teachers to continuously improve the level of teaching and learning.

The design of the following evaluation tools can be used in the teaching of English reading in the network:

(A) Clock. When the students open the article read clock start timing. This will enable students to understand their reading speed.

(B) Real-time performance feedback system. When students complete comprehension exercises, click after handing in the database immediately to correct the problem rate, and specific answer. Give the wrong number, not the correct answer. Students can re read and re do, re statistical results. This method is suitable for "or False True" and "Choice" exercise.

(C) Online interactive system. Students can not only understand their own reading speed, answer the situation, but also to understand the situation of other students. This will help students to carry out competition, learn to have an example, promote each other, and jointly improve.

(D) Platform monitoring system. All of the above three are in the master of the teacher control platform. Teachers can understand students' behavior and result in real time and dynamically. Provide help to the students who have difficulty in time.

B. Network autonomous learning

Reading is the core of the students relies on the network to choose their own to see the article, with interest to read. Students' independent reading has always run through several links in "online material selection online expression online evaluation". Each link has a corresponding network support. And at the same time by monitoring the entire network system and regulation.

1) Online material selection

Students can choose their own level of interest in the subject area to read. At this time, reading is no longer a burden, but a pleasure. They can read the article did not read the article, you can also read the same subject matter, but also according to the level of the teacher and the subject of the request to choose the article.

2) Online expression

Students in reading or practice problems can be through the BBS to or e-mail to find a reading partner and discussion, in order to read the comprehensive understanding of the content and thinking. Through the network to the students and teachers to show their reading results. The teacher's platform monitoring can also provide them with help in a timely manner.

Such as student R and student B like reading the history of the article. A B to read a title as "the greatest bridge in the world" of the time, I feel very interesting, the BBS for R and asked, "R, whether you also read 'the greatest bridge in the world?' if it is. Let's have a competition, the possibility of? However, please answer: "Verrazano is by no means considered though to be a great explorer his, name will... In 'no means by' how to understand?" When they read an article, they not only than speed, than the answers correct rate, on certain issues discussions, expressing their opinions.

Sometimes in order to test students' comprehension and expression ability, teachers can set the limited, let the student's readings within the prescribed time, PowerPoint to complete two assignments and submit. Homework 1: To sum up the main idea of the 100 words; homework 2: according to the content of the article proposed five why-questions, and make the corresponding answer. Teachers can show students' works, and further teach students reading methods and skills, and cultivate students' reading ability.

3) Online evaluation

The students make full use of the network to provide evaluation tools to detect their reading comprehension, and induction expression ability. Everyone can understand themselves, understand others. For a high school student who has a goal to strive for, this is more motivating and driving force than the traditional means of testing. Because this can make them determined to catch up with others. On the basis of good students, they have more detectable their opportunities.

Online evaluation is also reflected in the teachers on students' reading process of navigation, display and comment of the student work. The teacher through the platform monitoring system to understand the student's reading situation, choose several representative cases, show their

reading process and reading results of communication. The expression of improper place for no correct understanding of the content or language, gives the guiding opinions. Let the students learn from the method of reading skills.

V. CONCLUSION

The convenience, interactivity, and super time space of the network and the way of sharing the resources, provide a lot of resources for the teaching of English reading. The design of the network reading teaching is not a substitute for the traditional teaching methods. To develop Web-based English reading teaching, once the reading resource library is established, it can not only help students to read English, but also save some human and financial resources. Read the resources of the library can be repeated use, not limited to time, time and whether more people read the same article at the same time. Is a topic worthy of further study?

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