



# Construction of Multiple Intelligence Push English Teaching Model Based on Service-Oriented Architecture

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**Abstract.** The theory of multiple intelligences has deeply influenced the educational reform and has become the theoretical basis of the educational reform. The theory of multiple intelligences advocates students to actively participate in, explore and discover, communicate and cooperate in learning, which has caused changes in the role of teachers and the way of teaching and learning, and has had a great impact in the field of educational theory and practice. By applying the theory of multiple intelligences, innovate the long-distance and open English teaching mode, build the English teaching mode, and push the learning resources needed by students according to the characteristics of students' interests, personality characteristics, learning habits, cognitive level and understanding ability, so as to stimulate students' interest in English learning. It is of great significance to mobilize students' enthusiasm and initiative in English learning and lay a solid foundation for the quality and effect of English teaching. The theory of multiple intelligences is student-centered, attaching importance to students' learning process and teachers' teaching activities. Therefore, how to realize the extension of the new network service architecture to the application service system, and under the guidance of network teaching.

**Keywords:** Service-Oriented Architecture · Multiple Intelligences · English Teaching

## 1 Introduction

With the rapid development of information technology, English teaching is facing a series of challenges and opportunities. In order to adapt to this change, we propose a multi-intelligence push English teaching model oriented to the service architecture. This model aims to use advanced information technology to build a flexible and scalable English teaching platform to meet the learning needs of different students and improve the quality of English teaching. Service-oriented architecture (SOA) is a style of application architecture that deploys [1–3], manages, and composes different functional units of an application, called services, independently. In English language teaching, SOA can help

us modularize various teaching resources, services and functions, making the English teaching system more flexible, scalable and easy to maintain. The theory of multiple intelligences was put forward by the American psychologist Howard Gardner, who believes that everyone has multiple intelligences, including linguistic intelligence, logical and mathematical intelligence, musical intelligence, body movement intelligence, spatial intelligence, etc. According to this theory, we adopt the intelligent push method to push personalized learning resources and services according to the intelligent characteristics and learning needs of different students.

## 2 An Overview of Research on Multiple Intelligence Push Technology and English Teaching Mode

### 2.1 Multi Intelligence Push Technology

The theory of multiple intelligences was put forward by the famous psychologist Howard gardner, which broke through the traditional theory of intelligence and no longer considered that human cognition was unified. He put forward eight kinds of intelligence: Chinese intelligence, spatial intelligence, musical intelligence, interpersonal intelligence, logical mathematics intelligence, kinesthetic intelligence, introspection intelligence and natural observer intelligence [4]. In the past 20 years, various theoretical and practical studies around this theory have occupied considerable weight in many academic fields of English teaching and psychology in the United States. In 1996, Point Cast Network Company of the United States put forward the concept of intelligent push for the first time, and implemented the technology for this concept. Based on the intelligent push technology, it can be based on the establishment of information agent mechanism. After the client sends out a request, the server searches and locates according to the information that users are interested in, and pushes the information to users. Different from the traditional push method, this push method greatly improves the intelligence level of the push method by applying technologies such as machine learning and artificial intelligence, pushes information in a targeted manner, and promotes the improvement of the value of information utilization, so as to meet the needs of the majority of users. Actual needs. NET remoting is shown in Fig. 1.

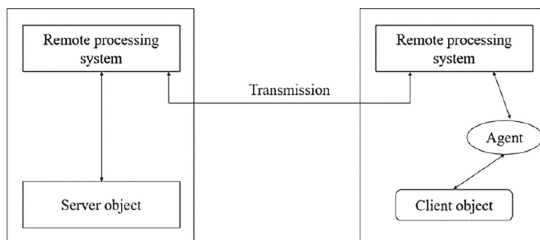


Fig. 1. Net remoting

## 2.2 Research on English Teaching Mode

**Needs Analysis:** Start with an in-depth needs analysis to understand the student's learning needs, learning style, and intelligence characteristics. Data is collected through questionnaires, student interviews, etc., so as to provide a basis for subsequent module design and intelligent push.

**Module design:** Based on the SOA architecture style, design each functional module of the English teaching system. These modules can include course management, online learning, intelligent push, interactive communication, etc. Each module should be independent, extensible, and reusable.

**Intelligent push implementation:** According to the theory of multiple intelligences, the intelligent push function is realized. By analyzing students' learning data and behavioral habits, we can push personalized learning resources and services to students. This is achieved with the help of technologies such as data mining and machine learning.

**System Integration & Testing:** Integrate each module into a unified English teaching platform and conduct comprehensive testing, including functional testing, performance testing, and safety testing. Ensure the stability and reliability of the system, as well as the accuracy and effectiveness of intelligent push.

**Deployment and implementation:** Deploy the English teaching platform into the actual teaching environment, and develop corresponding usage specifications and training plans. Through practical application, user feedback is collected, and the system is continuously optimized and improved. At the same time, the learning effect of students is regularly evaluated in order to provide a basis for further intelligent pushing [4, 5].

**Effectiveness Evaluation and Feedback:** Establish an effective evaluation mechanism to comprehensively evaluate the effectiveness of the new English teaching model. Data can be collected through comparative experiments, questionnaires and other methods to analyze students' academic performance, learning interest and satisfaction. According to the evaluation results, the intelligent push algorithm is adjusted and optimized, and the teaching mode is constantly improved and improved. At the same time, timely feedback on evaluation results and improvement measures, communicate with stakeholders, and jointly promote the improvement and development of English teaching.

**Promotion and improvement:** The model will be gradually applied to more schools and teaching environments, and its influence will continue to expand. At the same time, according to the problems and challenges encountered in the promotion process, the model will be continuously improved and perfected to adapt to the changes in different teaching environments and students' needs. Through continuous practice and improvement, this model has become a new paradigm of efficient and personalized English teaching (Fig. 2).

## 2.3 SOA Service Model

In the implementation process, problems such as data security, privacy protection and technical problems may be encountered. Therefore, effective countermeasures should be taken, such as strengthening data encryption and access control measures to protect students' privacy; Strengthen technology research and development and innovation to improve the stability and security of the system; Strengthen teacher training and technical

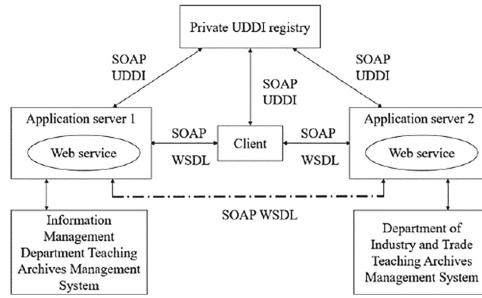


Fig. 2. Integrated architecture diagram of college teaching archives system based on SOA

support to help teachers better apply the new teaching mode [6]; Strengthen cooperation and exchanges with experts and institutions in related fields to jointly promote the reform and development of English teaching. is shown in Fig. 3.

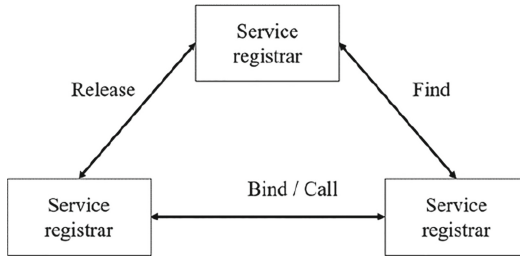


Fig. 3. SOA service model diagram

### 3 Advantages of Intelligent Multi-push English Teaching Mode

With the development of technology and the innovation of educational ideas, the English teaching mode will be more individualized, intelligent and efficient in the future, more attention will be paid to cultivating students' practical application ability and intercultural communicative competence. English teaching will pay more attention to the combination with professional development, so as to lay a solid language foundation for students' future career. At the same time, with the continuous improvement of internationalization, the standards and quality of English teaching will gradually improve, and it is necessary to constantly update teaching contents and methods to adapt to the changes and development of the times [7], and enable them to achieve corresponding resource capabilities at different stages. Effective English teaching must recognize the diversity and universality of intelligence, and cultivate and develop students' abilities in all aspects. Students can study a certain topic through different intelligence potentials, and have the opportunity to give full play to their individual learning strengths. The English-driven decision-making model is shown in Fig. 4.

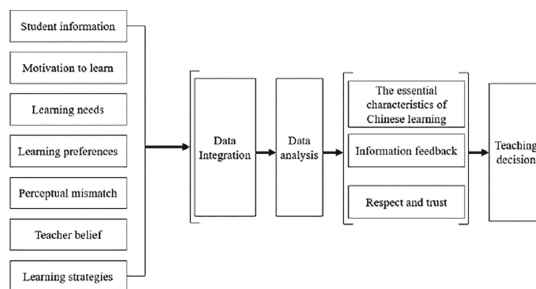


Fig. 4. English-driven decision-making model

The teaching method of multiple intelligences can help students find their potential that they have not noticed, such as in foreign language learning classroom. From the activity learning of multiple intelligences, students know that they have visual cavity intelligence. Therefore, they can help them learn through other activities related to visual / spatial intelligence, such as chart making or computer animation. With the application of multiple intelligence push technology, after students log in to the system platform, the system will combine students' own attributes and points of interest to realize the active push of information materials, so as to lay a foundation for improving the quality and efficiency of English teaching and realizing the goal of English teaching talent training. The component model is shown in Fig. 5.

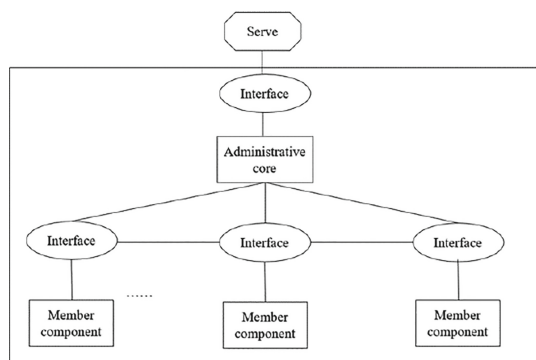


Fig. 5. Service component model

Teachers need to prepare sufficient materials before the class starts. Only by doing sufficient pre-class preparations can they enrich the content of classroom teaching and promote the quality of English teaching [9, 10]. Therefore, either the teacher spends more time and energy searching for the required information, or the students collect and organize the information independently, but there are certain problems in the way of collecting and organizing the above information. On the one hand, the teacher cannot collect the information according to the students' interests. The collected data is not attractive enough for students. On the other hand, students collect data independently,

which makes it difficult to guarantee the value of the data, which has a serious adverse impact is shown in Fig. 6.

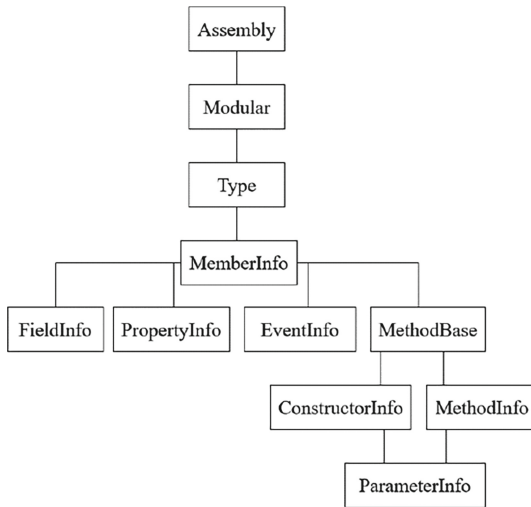


Fig. 6. Hierarchical relationship of metadata

## 4 Conclusions

The theory of multiple intelligences not only conforms to the education of the society, but also provides new enlightenment for the diversification of foreign language education. For teachers, it is “all-round teaching”; for learners, it is “whole-brain learning and whole-hearted development”. Doing a good job in the management of teaching files and accumulating the real historical data of the teaching activities of the teaching department has very important practical and historical significance for the whole teaching link of the teaching department. Web Services realizes the loose coupling and integration of applications, which enables universities to integrate existing file systems independently of language and across platforms. According to Gardner’s multiple intelligences theory, we should abandon the evaluation view of evaluating students with standard intelligence tests and establish a variety of evaluation views. This paper studies the English teaching mode of multiple intelligences push based on distance open education, and defines the advantageous role of the English teaching mode of multiple intelligences push. In short, the theory of multiple intelligences puts forward good requirements for English teaching. Teachers should improve the traditional teaching ideas.

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