



Information Design of a Constructive English Learning Platform for Deep Learning

Bing Liu^(✉)

Yunnan College of Business Management, Kunming, Yunnan, China
980488347@qq.com

Abstract. With the informationization of social life and the globalization of economy, English, as a communication tool, has become more and more important. In China, English is highly valued. Especially in the university stage, this project focuses on the research of RBF algorithm. The main purpose of this study is to improve the quality and efficiency of students' English learning by applying RBF algorithm in the constructive English learning platform (CLEP). The platform will be built on the open source framework, which can be easily modified by other researchers. It will also include tools to help teachers and learners learn English effectively.

Keywords: English learning · RBF algorithm · Constructive · Platform informatization

1 Introduction

You are a platform, a stable integration of resources, and can serve various resources of collaborative reading and listening for other functions. Therefore, English teaching platform is a comprehensive platform, and deep learning methods and other treatment methods can deeply explore data resources to find out the key points of skills. The data of English education platform and the press conference are difficult to express in this life, so this is well completed [1]. What world do you dream in is not only a process of data analysis and data iteration, but also a process of data collation and data integration, so English politics can now complete the integration of data and knowledge.

College English, as one of the most important basic courses in colleges and universities, occupies a large proportion in the arrangement of class hours, but the learning effect is not satisfactory. The main problems are as follows: some learners have made great efforts but achieved little, and they feel that the more they learn, the less confident they are; More and more learners can complete their learning tasks, but their ability to use foreign languages in practical work and life is totally out of proportion to their achievements in exams; Most learners find it difficult to further improve their foreign language proficiency independently after leaving the classroom [2]. How to learn English well and how to teach English well is a problem that learners and educators have been exploring.

In order to realize the informatization of English teaching and evaluation, and prepare for the reform of listening and speaking ability of the local secondary school entrance examination in Guiyang in the future, the deepening reform of the English curriculum should have clear requirements for the listening and speaking level of junior high school English, so as to train students' listening and speaking ability in a targeted way. In the process of language learning and language communication, listening and speaking will be the important forms and standards of language communication activities. The curriculum standard clearly points out that the goal of summative evaluation must be to test the comprehensive language use ability of students as the standard, Or play, because after the data, we should judge the whole analysis process and data content of the numbers and find out the best data, so as to witness whether English can meet the practicality of students.

The teaching of English listening and speaking in middle schools in the past few years has adapted to the new requirements of the curriculum standards for English work in middle schools, overcoming the excessive emphasis on grammar knowledge teaching and ignoring the use of English knowledge. At present, many online learning platforms have the system function of automatically correcting homework. Teachers can quickly count the right and wrong students' homework by checking the student homework report and information fed back by the system. In class, teachers use online learning platform to assist listening and speaking teaching, and can also timely obtain student feedback data, so that teachers can provide targeted guidance to students in time. My English dictionary can realize online sharing and online processing, which can improve the integrity of the whole English resources, and has an impact on the whole comprehensive homework of English resources., it may provide new ideas and help for middle school teachers in English listening and speaking teaching.

At present, the online learning platform is very important. Learning in such an environment has also changed our teaching and learning environment and means. TDaily practice and English writing are an important part of English learning, and online platform can help students learn by themselves.. When they return home, they often have no objects to practice with, resulting in poor results. However, the operation of online learning platform is extremely convenient. It can be operated with only one mobile phone, which greatly facilitates the training of students' English listening and speaking abilityRight?It can improve the integrity and comprehensiveness of English learning. Has greatly enhanced the interaction between learners and learning materials, made learning paths and learning methods more diversified, and also effectively promoted the development of students' listening and speaking abilities and audio-visual nerves.Chinese scholars have no significant requirements for the informationization of English teaching platform and related information equipment, but domestic scholars think that learning classics is the fundamental problem of informationization, and foreign scholars think that enterprise information technology and information platform are an important content of new English self-study. Therefore, an intelligent deep learning method may be proposed, which integrates resources and technology, and then English learning guides the completion of English learning process when it is better carried out [3].

2 Related Work

2.1 Current Problems of English Learning Platform

The development of Internet technology has effectively expanded students' learning methods and ways. In addition to traditional reference books, training classes and other learning ways, students can also learn by accessing learning resources on the Internet. Because the contribution of English education platform mainly uses simple data listing, but there is no correlation between numbers, sexual deep learning can make a key analysis of data in English learning, and study the completeness and the whole core of data, which plays an important role in improving the whole English teaching effect [4]. However, there are still some problems in the current English teaching platform:

- (1) The content arrangement of the English learning platform is not targeted. The content and teaching mode of most English teaching platforms are relatively fixed, and the teaching process is implemented according to the ordinary syllabus, without considering the students' personalized situation. They also do not have the ability to analyze and research the students' learning situation and knowledge mastery.
- (2) The topic selection of English learning platform does not have the intelligence and adaptability. The test paper grouping strategy is relatively backward, so students cannot organize the test questions according to their learning of English knowledge points and their usual practice, which leads to low efficiency of students' English learning.
- (3) At present, most English teaching platforms provide different schools with unified English teaching functions, while the teaching management department of the school is unable to adjust the teaching strategies according to its own needs. Due to the lack of flexibility, it brings users a lot of problems in the actual use process.

The methods of cooperation in various platforms in information are used as an important social capital and development and research for the development of the whole society. I have time now, so I can realize the integrity of information resources, the comprehensive indicators in architectural design resources, and how to do it. Information platform can not only integrate information resources, but also realize the optimization of information resources, and effectively operate on information resources, and complete the comprehensive network of information and the effectiveness and importance of data resources in the natural collation distribution and calculation process in this world are still the focus of information platform research. In the process of integrating data and information resources, it is necessary to simplify data information and data flow to achieve comprehensive development of data and improve the effectiveness of data (Fig. 1).

2.2 Social Constructivism Theory

The overall development of students needs information resources and the overall effectiveness of information resources. Therefore, on the premise of classifying data resources, English homework and English information platform should be integrated to give full play to their respective advantages, enrich the integration of human resources

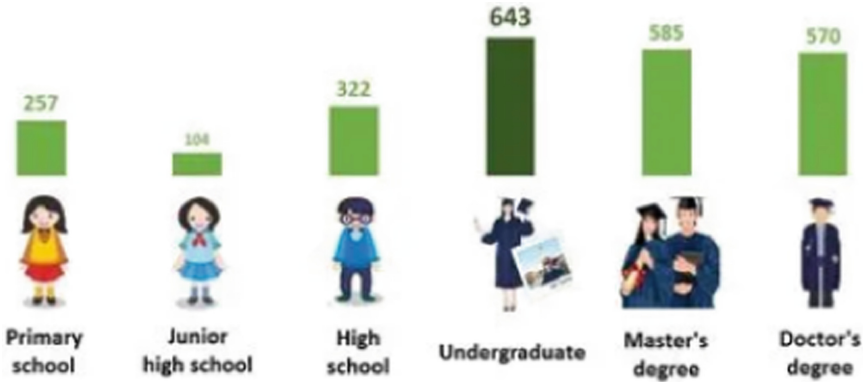


Fig. 1. Average online learning cost

and establish an information platform.and link students' outside school experience with their inside school experience. The combination of pictures, newspaper abstracts, personal life experiences and classroom teaching activities can provide students with an integrated feeling of living environment and learning. In this way, the students themselves construct the meaning, rather than make them accept the ready-made knowledge and directly reach the results [5]. The more students participate, the more they will have an independent feeling and experience. The more self-control students have, the more they will participate and have more internal motivation, so as to better promote their language development.

Taking students as the main body does not mean that teachers do nothing. The most important role of teachers is to provide students with an environment in which they can explore at the same time. The classroom should be full of all kinds of real opportunities that challenge students, and should give students the freedom to develop according to their own pace and development process designed by themselves. To make foreign language teaching educational, teachers must understand the individual learners, their personal characteristics and personal needs. To help learners unWhen necessary, the data and the related quality and quantitative changes are analyzed as a whole, and the digital comprehensive analysis is completed. The English resources, English teaching and English overall data are effectively integrated and managed.Only when teachers fully understand the psychological mechanism of the whole learning and development process can they create a challenging classroom environment for students, thus promoting their learning and development [7].

Learning is a dynamic process, in which mistakes are inevitable and there will be solutions to problems. Learning is also a social interaction process, which should take place in the natural environment as much as possible, under the interaction and cooperation between peers.

2.3 Overview of RBF Neural Network

A complex network structure of your mobile phone will be input into the middle layer, which is a process of self-learning and self-optimization, mainly to realize the overall integration of data (Fig. 2).

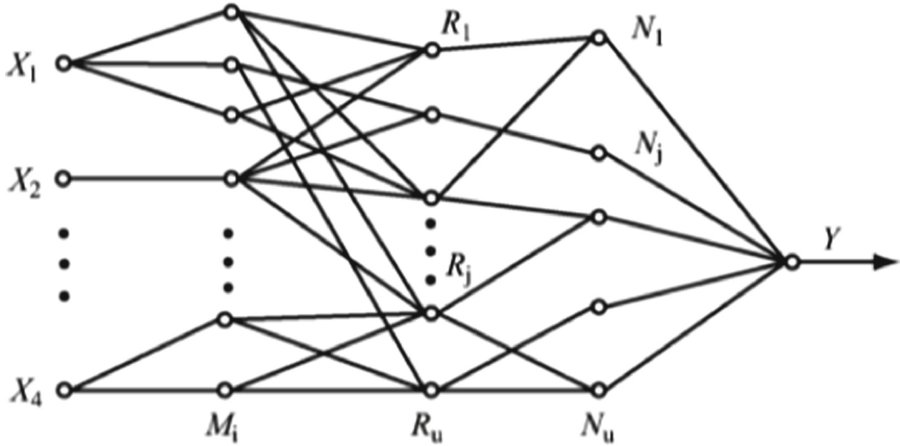


Fig. 2. RBF algorithm structure diagram

RBF (radial basis function R) neural network is a feedforward neural network. The connection weight between the hidden layer and the input layer is not determined randomly, but determined in a fixed way, including approximate and accurate types (the code section will explain in detail).

Assuming that the connection weight between the input layer and the hidden layer has been determined (the determination method will be discussed later), the sample input is processed by the connection weight, and then the Euclidean distance is calculated by the dist function. The sample also needs to be multiplied by a threshold. The two results are multiplied to the activation function (RBF function) (radial basis function) (different from BP, the reason for calling RBF is the activation function). The characteristics of the activation function are: when the input is close to 0, the output is close to 1 [8]. The weight value and threshold value are obtained through a set of linear equations, and the output obtained is weighted sum (the same as the threshold value), and the last linear output. Note: How to determine the connection weight between the hidden layer and the input layer: there are S1 samples in the training set, and the R eigenvalues of each sample become a matrix (each column represents a sample, and each row represents the R eigenvalues corresponding to a sample) [9]. Through the help document, we can learn more about RBF neural network, Radial basis function (explains why the input is close to 0, the output is close to 1, and the output is smaller as the input moves to both sides):

$$G(X, X^P) = \exp\left(-\frac{\|X - X^P\|^2}{2\sigma^2}\right) \quad (1)$$

Especially, as an important relative, children can train data, realize data standardization, classify all kinds of equipment and information resources as a whole, analyze data with multiple concentration and constraints, and form a comprehensive data set.

$$k(X, X^P) = \exp\left(-\frac{\|x_1 - x_2\|^2}{2\sigma^2}\right) \tag{2}$$

$$\phi(x, c) = \phi(\|x - c\|) \tag{3}$$

The calculation of output layer is needless to say, just like the traditional method, WZ.

How to update the parameters (including center vector C, width vector D, weight w) will change the general process:

1. Initialize the weight W, many online methods, such as fan-in, fan-out, or a bunch of methods in caffe.
2. Initialization center C

$$c_{ji} = \min X + \frac{\max X - \min X}{2p} + (j - 1) \frac{\max X - \min X}{p} \tag{4}$$

It is mainly to reduce the flow of income data, and then carry out standard processing on the data to complete the overall integration of the data.

3. Initialize the width vector D.

$$d_{ji} = d_f \sqrt{\frac{1}{N} \sum_{k=1}^N (x_i^k - c_{ji})^2} \tag{5}$$

First of all, we should optimize the hidden information in information resources, and realize the multi-classification analysis of hidden information to complete the sorting of information resources.

We should also analyze the elements of information resources, and then integrate the elements to complete the overall integration of information resources, and optimize and improve a number of indicators and contents of information resources and improve the overall quality of information resources.

$$E(w, b) = \sum_{j=0}^{n-1} (d_j - y_j)^2 \tag{6}$$

Formula (6) can reduce the steps in the deep learning algorithm, realize the integration of data resources and information resources, and better realize the platform construction of information resources.

3 Analysis of Constructive English Learning Platform Based on RBF Algorithm

3.1 System Design Objectives

The main difference between the English learning platform studied in this topic and the traditional English learning platform lies in the introduction of the project response theory. Through the construction of the topic selection strategy model, the relatively

accurate assessment of students' abilities is achieved, and on this basis, students are guided to learn in the next step. In addition, this English learning platform is student-centered and analyzes students' learning status and test scores [11]. The main design objectives of the system include:

- (1) Design and develop a personalized English learning platform. The platform can recommend the content of the next step according to the actual situation of different learners, so that the content can adapt to the students' actual mastery of English knowledge, so that students with different learning abilities can receive targeted teaching. Be able to carry out intensive training for students' mistakes, so as to improve their knowledge structure. Display students' history learning track and history learning situation, so that students can master their current learning situation; It can diagnose students' learning conditions based on data analysis, so that students can more accurately evaluate their mastery of knowledge [12].
- (2) Design and develop an English learning platform that can reflect the project response theory. The construction of the question bank in the English learning platform, as well as the daily exercises and examinations, should reflect the relevant requirements of the item response theory. The difficulty, differentiation and other parameters should be set for the questions in the question bank, so that the topic selection strategy can play a better role. Based on the item response theory, the selected questions are adjusted according to the students' actual ability value, so as to evaluate the students' English level and ability more accurately.
- (3) Design and develop a complete English learning platform. This English learning platform should be able to provide students, teachers, teaching administrators, system administrators, etc. with the functions they need. These functions should cover the whole process of English learning, without the need to support the system with a third-party platform. In general, the system should be able to provide students with all kinds of English learning resources and guidance, as well as exercises, exams, etc., can provide teachers with the release of teaching resources, as well as the construction of question bank, can provide teaching managers with the function of setting topic selection strategies, and can provide system managers with the function of parameter configuration and user management [13]. At the same time, it should also be able to provide communication functions for users of different roles.

3.2 Overall Platform Architecture Design

Our main purpose is to design an English learning platform, provide more support to English learners and students, improve the related content, effectively integrate the resources in the platform, provide learners with more comprehensive information, and optimize the deepening of resource mining, so as to simplify the utilization rate of resources. including the English learning data source, big data platform and display layer, and the big data platform also includes the collection layer, analysis layer and storage layer. The implementation of the big data platform first needs to cache the extracted data in the message middleware through the data import tool, then complete the analysis and storage of the data, and finally display the result data after the data analysis according to the business requirements. The overall architecture of the information service platform is shown in Fig. 3 below.

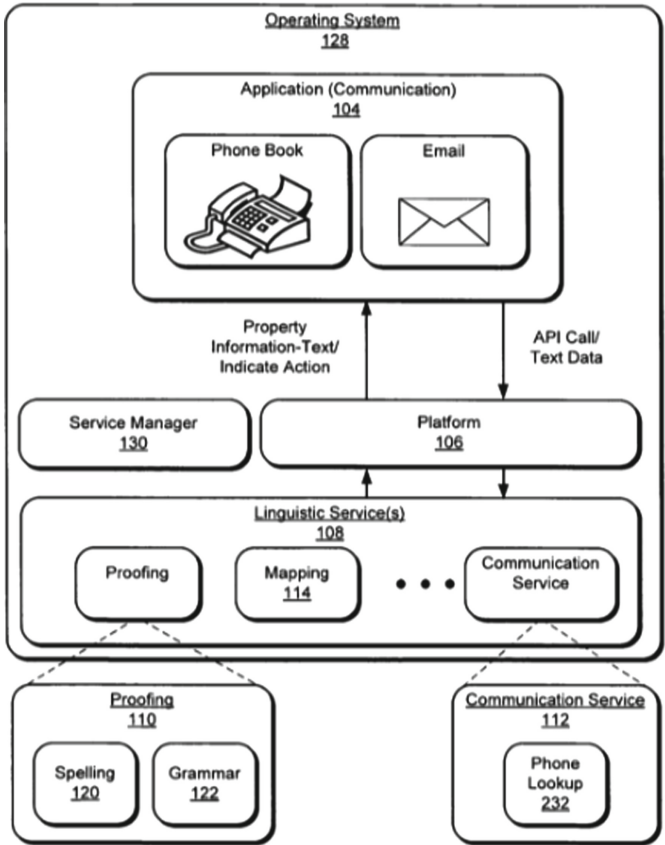


Fig. 3. General structure of information service platform

The data import and export module is to realize the data information interaction process between the big data platform and the data source and display layer. The data algorithm module is mainly aimed at the actual business needs, based on artificial intelligence technology, mining the value of English learning [15]. The data analysis module mainly preprocesses, normalizes and analyzes the collected business data. The data storage module mainly realizes the storage function of English learning metadata and the result data after analysis and processing. The data display module mainly uses visualization technology to graphically display the result data after data processing. Each module is divided independently according to its function, and the data algorithm module and data analysis module are the core of the platform and the focus of this design.

The data import module in the big data platform refers to the function of importing the data collected and analyzed on the production site into the platform to realize the interaction with the big data platform. Data is divided into historical data and real-time data. In the process of real-time data import, if the big data platform directly accepts data, data accumulation will occur, resulting in the collapse of the computing framework in the

distributed platform [16]. Therefore, the collected data is generally sent to the message middleware for caching. The function flow of data import module is shown in Fig. 4.



Fig. 4. Function flow of data import module

The data import module generally uses API to complete the interaction with external systems. In the process of big data import, it needs to pay attention to the collection scope, import technology and other contents [17]. The collection scope includes full data import and business demand-oriented data import. For fully digital English learning, full data import is usually used. For English learning that is still in the early stage of building a big data platform, business demand-oriented data import is usually used. In the big data ecosystem, common message middleware include Kafka, ActiveInQ, RabbitMQ, etc. In the current industrial field, the commonly used message system for real-time computing is Kafka.

4 Informatization Practice of Constructive English Learning Platform Based on RBF Algorithm

4.1 Structure of English Learning Platform

The specific contents of deep learning process and network platform construction are shown in Fig. 5.

The education platform mainly provides auxiliary English learning methods, collects English data and English resources, then integrates English courses and contents, optimizes courses, pushes different courses to complete the comprehensive setting of courses according to different scholars and different contents, realizes the comprehensive judgment of courses through the overall analysis of courses, and then makes comprehensive judgment on English courses and English output data. Therefore, the English teaching platform has strong integrity of English. Where are you divorced?

4.2 Model Implementation

It is to excavate students' learning time, learning content and learning interest, identify English teaching resources, teaching effects and teaching conditions, complete the overall analysis of English teaching resources, and then judge many contents in English teaching resources, including listening and writing resources, and make use of students' actual ability to improve personalized service. Therefore, English teaching resources have strong comprehensiveness, and in the process of platform design and platform

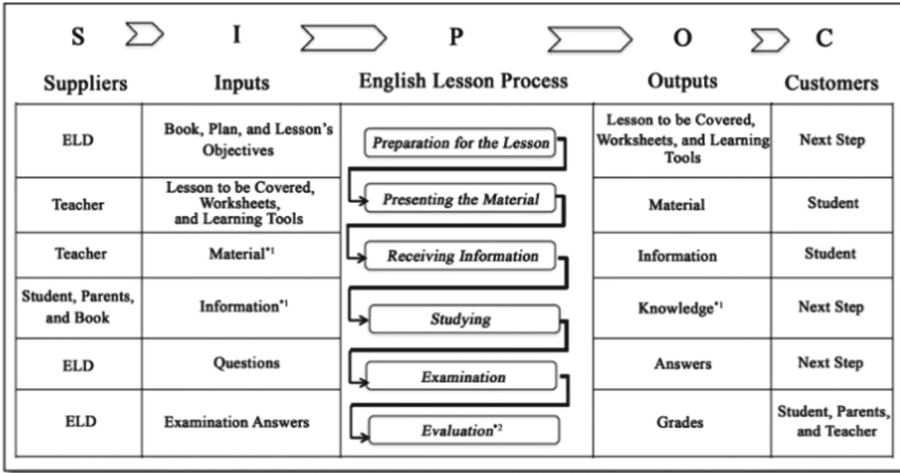


Fig. 5. Structure of English learning platform

analysis, that is to say. Then study this again. Through that, it has a direct effect on students' overall English level and English literacy, so building an English platform can test English efficiency. If it is improved, there are some shortcomings in the process of building an English platform, mainly in the integration of language and resources. Therefore, we should strengthen the construction of English education resources language and platform, and build an English platform and content that meets the actual needs. In the process of interaction between students and English platforms, we should strengthen the optimization of various resources of the learning platform, simplify the data volume of the platform and optimize the whole platform. In the process of deep learning, irrelevant data should be removed to improve the comprehensiveness of data.

5 Conclusion

As the communication between English learning platform providers and users is not smooth, the platform system generally only aims at the problems of a certain school user. It has built a web-based communication platform, and established a three-level management and use system of system administrators, school administrators, and students, so as to achieve the purpose that the English learning platform can provide services for students in different schools. In terms of the work of the paper, it first analyzes the problems existing in the current English learning platform, mainly due to the lack of support from intelligent theories and methods, which leads to the inability. Then the system needs analysis, the system should have the main functions, and analysis of the system performance requirements. The overall structure of the system is designed, and each functional module is designed in detail. The emphasis is to introduce The application language in the platform, the comprehensive operation scheme of the English platform and the calculation process of the application platform.

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