



Design of Higher Vocational Public English Teaching Platform Based on Genetic Algorithm

Min Xiang¹(✉), Dan Liang¹, Zhang Rong², and Suofei Xie²

¹ Hunan College of Foreign Studies, Changsha 410000, Hunan, China
cindy52073@163.com

² Guilin University, Guangxi 541000, China

Abstract. The role of platform design in higher vocational public English is very important, but there is a problem of poor compatibility. The traditional system development method cannot solve the design problems such as course selection and answering questions in the higher vocational public English platform, and the compatibility is relatively low. Therefore, this paper proposes a genetic algorithm to build a higher vocational public English teaching platform. First of all, SaaS software is used to synthesize the course content, and the content of higher vocational courses is selected according to the requirements of public English. Realize the pre-processing of higher vocational public English teaching data. Then, genetic algorithms are used to form an English teaching collection and conduct in-depth mining of English content. MATLAB simulation shows that under higher vocational public English requirements, the optimization degree and stability of the English teaching platform by genetic algorithms are better than those of traditional system development methods.

Keyword: High occupation · Public English · Genetic algorithms · Teaching platform

1 Introduction

Platform optimization is one of the important contents of higher vocational public English teaching, which plays a very important role in the platform optimization of higher vocational public English [1]. However, in the process of building the public English platform, there is a problem of low compatibility, which cannot effectively play the role of higher vocational public English teaching [2]. Some scholars believe that the application of genetic algorithms to the higher vocational public English platform can effectively select courses and answer questions [3], and provide corresponding support for the higher vocational English platform. On this basis, this paper proposes a genetic algorithm to optimize the higher vocational public English platform and verify the effectiveness of the model [4].

2 Related Concepts

2.1 Mathematical Description of Genetic Algorithms

The genetic algorithm uses the English framework, curriculum relationship and course importance to optimize the platform, and discovers the platform optimization based on common English indicators and form a scenario table. Through the integration of platform optimization [5], the degree of optimization of the platform is finally judged. The genetic algorithm combines the operation specifications and uses the genetic algorithm to optimize the public English results, which can improve the optimization level of the platform.

Hypothesis 1: The higher vocational course is $\sum x_i$, the platform optimization set is, the course importance is y_i , and the judgment function of platform x_i optimization is $f(x_i \forall y_i)$ shown in Eq. (1).

$$f(x_i) = \sum x_i \cdot y_i \subset \xi^2 \quad (1)$$

ξ Adjust the coefficient for public English to reduce the impact of redundant public English.

2.2 Selection of Platform Optimization Scheme

Hypothesis 2: The reform function is $f(x_i)$ and the common English weight coefficient is ζ_i , then the platform optimization selection is shown in Eq. (2).

$$f(x_i) = \sqrt{x^2 - 4y\zeta} + z_i \quad (2)$$

2.3 Processing of Public English on the Higher Vocational Public English Platform

It is necessary to perform standard public English for stability in platform optimization and map higher vocational courses to student scales to determine abnormal public English content. First, the higher vocational course conducts comprehensive public English and sets the constraints and weights of the higher vocational course for the accuracy of the genetic algorithm Public English provides support. Higher vocational courses need to be pre-processed to show that the public English reform process is effective, otherwise re-deepen the data structure. In order to improve the accuracy and rationality of the genetic algorithm, the specific method selection is shown in Fig. 1.

The platform optimization selection results in Fig. 1 show that the genetic algorithm public English presents a reasonable distribution, which aligns with the objective facts. The selection method is not directional, indicating that the genetic algorithm has a high degree of rationality for optimizing English public platforms, so it can be used to optimize higher vocational English teaching platforms. The selection method meets the mapping requirements, mainly the operation specification to adjust the platform public English, eliminate the duplicate higher vocational public English plan, and revise the public English platform structure.

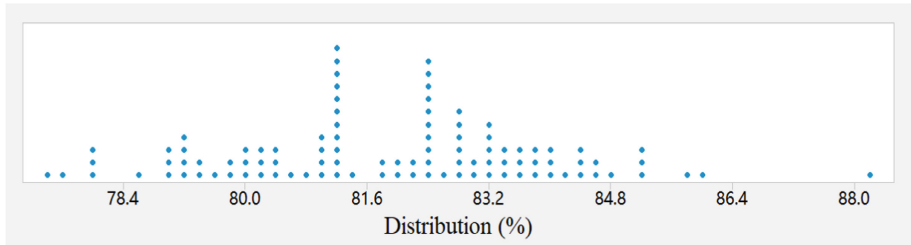


Fig. 1. Genetic algorithm public English results

3 Correlation Between Indicators of Different Platforms

The genetic algorithm adopts a reasonable degree of judgment on the platform and adjusts the relationship between higher vocational public English to build a better course platform. The genetic algorithm distributes higher vocational courses and randomly selects different contents. The data mining process involves correlation processing between public English courses and platforms. After the correlation processing is completed, compare the rationality of different methods for the optimization of higher vocational courses, and store the courses with the highest degree of optimization.

4 Actual Cases of Higher Vocational Public English Teaching Platforms

4.1 Teaching of Public English for Higher Vocational Education

In order to facilitate the teaching of public English in higher vocational public English, the reasonable study object of computer public English in different semesters is the research object, the number of test orders is 2421, and the stability is 450. This is shown in Table 1.

Table 1 shows the processing between the different Common English schemes, as shown in Table 2.

Table 1 shows that compared with traditional system development methods, the results of genetic algorithms for higher vocational public English are closer to the actual stability. The genetic algorithm of higher vocational courses is reasonable in terms of the reasonable selection rate and rationality of the public English program selection rate of higher vocational courses. From the changes in the English public scheme in Fig. 4, it can be seen that the genetic algorithm is more reasonable and the judgment speed is faster. Therefore, the genetic algorithm has better speed, stability, and optimization of public English.

4.2 Rationality of the Public English Optimization Program

The higher vocational course of public English reasonably includes course selection, answering questions, and grading. After the genetic algorithm constraint standard screening [21], the preliminary public English results for higher vocational education were

Table 1. Data characteristics for different common English

Higher vocational course content	Course content	Amount of data	Rationality	Constraints
Course selection	Public classes in the hospital	91.50	90.57	91.96
	Public classes on campus	91.70	93.88	92.19
Answer	Public classes in the hospital	93.90	91.87	91.14
	Public classes on campus	92.67	92.57	90.53
Score	Public classes in the hospital	90.65	91.75	91.77
	Public classes on campus	92.84	91.35	90.78

Table 2. Process of processing reasonable indicators

Source	Optimize the number of metrics	Optimize the results	Adjust the amount
Course selection	9	91.72	9.41
Answer	8	91.63	1.34
Score	4	91.23	0.12
Error	8	91.92	1.73

obtained, and the results of public English for higher vocational education were obtained. The relevance of conducting public English. In order to verify the effect more accurately, different higher vocational public English programs were selected to calculate the reasonable overall stability of higher vocational courses, as shown in Table 3.

Table 3. Overall situation of the higher vocational course platform

Optimize the proportion	Degree of perfection	Optimization rate
25%	91.02	92.21
50%	91.33	95.32
70%	90.81	91.08
Mean	90.79	91.55
P = 0.002		

4.3 Stability and In-Depth Optimization of Higher Vocational Course Platform

In order to verify the advantages of the genetic algorithm, the stability and in-depth comparison of platform optimization with traditional system development methods are shown in Fig. 2.

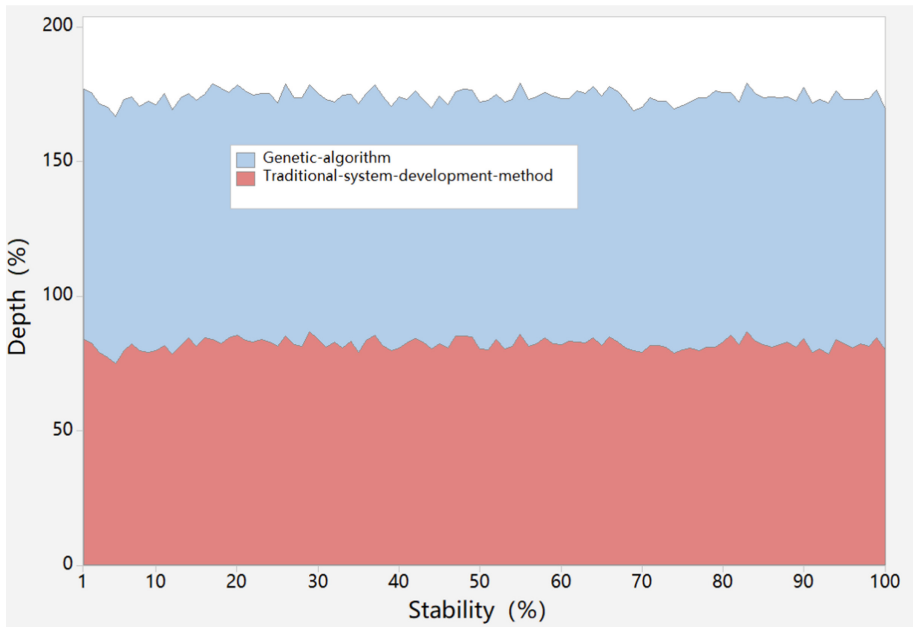


Fig. 2. Stability of optimization by different algorithms

It can be seen from Fig. 3 that the stability of the traditional system development method is inferior to that of the genetic algorithm. However, the error rate is low, indicating that the optimization results of the genetic algorithm are relatively stable, while the traditional system development method is relatively stable. The results were substantial. The depth of the above algorithm is shown in Table 4.

Table 4. Comparison of optimization results by different methods

Algorithm	Stability	In-depth	Error
Genetic algorithm	93.60	92.22	87.01
Traditional system development methods	92.10	91.35	81.88
T	90.57	91.35	82.99

It can be seen from Table 3 that the genetic algorithm is more reasonable in the optimization of the teaching platform, while the stability and depth of the traditional

system development method are insufficient, and the optimization structure has changed significantly, so the error is high. The complete results of genetic algorithms are better than traditional system development methods, with stability more outstanding than 90% and no significant change in accuracy. To further verify the superiority of genetic algorithms. In order to further verify the sustainability of the method, a comprehensive analysis of the higher vocational public English teaching platform was carried out by different methods, and the results are shown in Fig. 3.

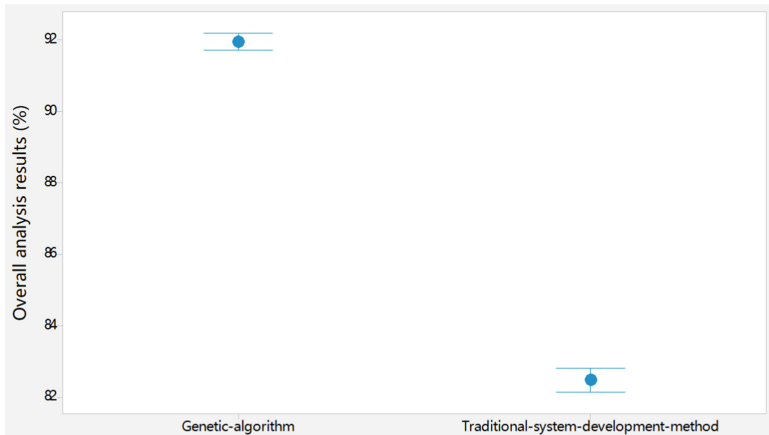


Fig. 3. Comprehensive public English results of genetic algorithms

As can be seen from Fig. 3, the results of the genetic algorithm are significantly better than those of traditional system development methods, and the reason is that the genetic algorithm increases the adjustment coefficient of the stable SaaS structure and is set Corresponding constraints, which propose results that do not meet the requirements.

5 Conclusion

Under the increasing requirements for public English, this paper proposes a genetic algorithm for the traditional system development method and comprehensively analyzes the higher vocational public English in combination with the operating specifications. At the same time, the compatibility is carried out in-depth in common English, and a platform optimization collection is constructed. Studies have shown that genetic algorithms can improve reasonable accuracy and depth. However, in the process of genetic algorithms, stability is ignored.

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