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An Innovative Model for the Improvement of English Language Proficiency in Primary Schools under the Educational Environment of the New Era

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ABSTRACT**:** *In this study, the UMU platform is used to provide teaching resources for English speaking courses, and the iSmart platform is used for speaking practice and assessment to realize the problem of accurate teaching of spoken English in elementary school. A genetic algorithm is introduced to establish a learning model for content organization, and personalized organization and recommendation of learning content is achieved by calculating the initial population and fitness value, and setting termination conditions. An output-oriented teaching system centered on "teaching concept-teaching assumption-teaching process" is established to strengthen the synergy between language input and output, and to improve students' oral expression ability, grammatical accuracy and fluency. The findings show that the experimental group's oral performance is significantly higher than that of the control group (MD=4.12), and in terms of accuracy and fluency, the experimental group (78.32±8.45) is higher than that of the control group (73.47±7.61).82.2% of the surveyed students indicated that the innovative teaching mode made their independent learning easier, and the experimental group students' performance in contextualization analysis is higher (P<0.05). The results confirm the effectiveness of the proposed innovative model in stimulating learning interest and enhancing comprehensive language ability in the new era educational environment, and provide an actionable practical path for elementary school English teaching reform.*

KEYWORDS: *UMU platform; iSmart platform; genetic algorithm; spoken English in elementary school; output-oriented teaching*

1 Introduction

The ability to use English proficiently means possessing comprehensive skills such as listening, speaking, reading, writing, and translation. Nowadays, people engage in communication internationally frequently. Thus, English study becomes an essential skill to participate in social and work-life events [1]. The implementation of the new curriculum reform results in significant advancements in primary and secondary education in many aspects, with changes occurring in both concepts and methods of education [2]. It can be stated that the new phase of education development is underway, and the characteristics of English teaching in elementary schools now face new issues. The pedagogies of elementary English education in the current era have distinctive traits from traditional education, showing greater flexibility and diversity in the process of English teaching and learning [3]. IIn today' s education environment, the usage of instructional tools by teachers becomes more frequent. Information technologies are

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utilized in teaching English, improving teaching efficiency effectively [4, 5]. Primary education in the current era remains exam-focused. Therefore, teachers are inclined to stress more on students' academic achievements, while students unconsciously center their attention on the teacher rather than other aspects of English language learning. Such a situation may lead to the unbalanced development of students' English skills. Hence, students can become excessively dependent on teachers. In the course of English education, students experience instruction requiring adherence to the teacher's words and commands. In this way, a vicious circle of authoritative power of teachers and submissive attitude of students forms. Thus, the most important task for today is to shift the focus of teaching onto improving students' language abilities under the new educational environment [6].

In this research, a teaching model consisting of UMU and iSmart dual platforms is introduced, where the UMU platform will be used to provide classroom instruction, while the iSmart platform will be utilized for after-class reviewing. The classroom instruction stage will identify important points of instruction, and the after-class reviewing stage will include precise evaluation to improve the independent learning skills of the learners. In addition, a content organization based learning model is designed through the use of genetic algorithm, which involves five variables including amount, kind, level, range, and subject area. Hence, the process of content organization will involve the generation of a feasible initial population based on the grade, kind, and subject requirements; determination of the fitness function for calculating the fitness value; and setting the algorithm termination criteria in order to dynamically organize and recommend learning materials for personalized learning path planning. At the same time, an output-based instructional design model is selected.

2 Literature review

With regards to the fast advancements of information technology in the modern age, according to Altun, M. and Ahmad, H. K., technology operates in real-time and is able to provide students with vast amounts of resources. Students can explore language using simplified dictionaries and other forms of exploration, have numerous examples of language available on the Internet, as well as improve language learning by allocating time to focus on learning and assessment of classroom learning compared to static learning methods [7]. In their work, Rintaningrum, R. applied qualitative analysis in order to emphasize the benefits of the integration of technology into English language learning. According to the research findings, incorporation of modern technology into the process of learning contributes to fostering learner participation, is learner-oriented, and provides an innovative element for the English language classroom [8]. As noted in Klimova, B. et al., machine learning, deep learning, and various types of artificial intelligence technologies in English language education have become common place. The research provides a comprehensive review of technologies that are being used successfully in English language teaching and learning, although English teachers have yet to acquire necessary skills for making efficient use of these technologies [9].

The use of English Language Teaching in the technological age has been studied by Purwanto, M. et al., who made use of relevant texts, books, journals, and other resources. Results showed that the requirements of teaching the English language include infrastructural as well as curricula aspects and that dynamic and interesting ways of learning could be facilitated along with their implementation into practice; nonetheless, considerations should be made of the learners' ability to pay attention [10]. Another study conducted by Paragae, I. et al. looked into innovative ways of teaching the English as a foreign language. According to the research findings, innovation means that the method of teaching is student-centered and focuses

on providing learners with strategies that will help them develop the skills required for the global digital era. Innovation is associated with a variety of advantages that can be provided through language learning [11]. Gumartifa, A. et al. have proven that problem-based learning (PBL) is a beneficial and successful approach to teaching English at the junior high schools. Problem-Based Learning deals with solving different problems that arise during the course of learning by making the curricula related to the real world. Results showed that PBL was applicable in pedagogy, that the learners benefited from it, showing higher engagement and problem-solving skills [12]. In his study, Le, M. D. et al. considered how English language teachers exercise agency in reaction to policies under certain situational circumstances. It has been found that teachers need to be seen as important figures for innovative teaching and learning and the monitoring of different departments is crucial for ensuring teacher involvement timely enough to bring about inspirational learning experience for the learners [13].

3 English Language Proficiency Enhancement Program Construction in Primary Schools

3.1 Based on UMU and iSmart dual platforms

The online teaching platform, i.e., the teaching mode in which the UMU teaching platform is the main body of blended teaching and the intelligent learning and assessment tool (iSmart) is the main body of practice and assessment before and after class, utilizes the UMU platform to provide teaching resources for the English speaking course, and uses the functions of the iSmart platform such as follow-reading, repetition, and question and answer to carry out the speaking practice and assessment, which focuses on solving the precise teaching problems of follow-reading, voice intonation, and repetition, etc. [14, 15].

The teaching mode of pre-course self-study based on the UMU and iSmart platforms, in-class teaching based on the UMU platform, and post-course review based on the iSmart platform is designed, and the corresponding teaching implementation path is also designed, and the model of “precise teaching” of spoken English and the implementation path are shown in Figure 1. In the pre-course self-study stage, both UMU and iSmart platforms are used. Teachers upload learning materials on the UMU platform and set up pre-course practice tasks on the iSmart platform, so as to realize the precise delivery of teaching resources and organize tests. After independent learning on the UMU platform, students log in to the iSmart platform to complete the word-reading practice and get accurate assessment feedback. At this stage, the goals of teaching resources delivery, learning and assessment context creation, and accurate assessment feedback are achieved. In the learning phase of the class, the UMU platform is mainly used. Based on the learning feedback from the dual platforms before the class, the teacher establishes the important and difficult teaching points in the class, and then uses the testing function of the UMU platform to carry out translation and other exercises, and then receives systematic grading feedback. The data analysis of the assessment results provided by the platform is used to check the teaching effect of the key and difficult points. At this stage, we utilize intelligent functions such as accurate assessment feedback and big data analysis to adjust learning and verify the results. In the post-course stage, the iSmart platform is mainly used. According to the teaching effect before and during the lesson, the teacher determines the key learning points after the lesson, and arranges reading or repeating exercises on the Smart platform, so that students can repeatedly carry out the exercises and obtain evaluation feedback in time. At this stage, the goals of accurate assessment, accurate support for independent learning, and improvement of students' independent learning ability are realized.

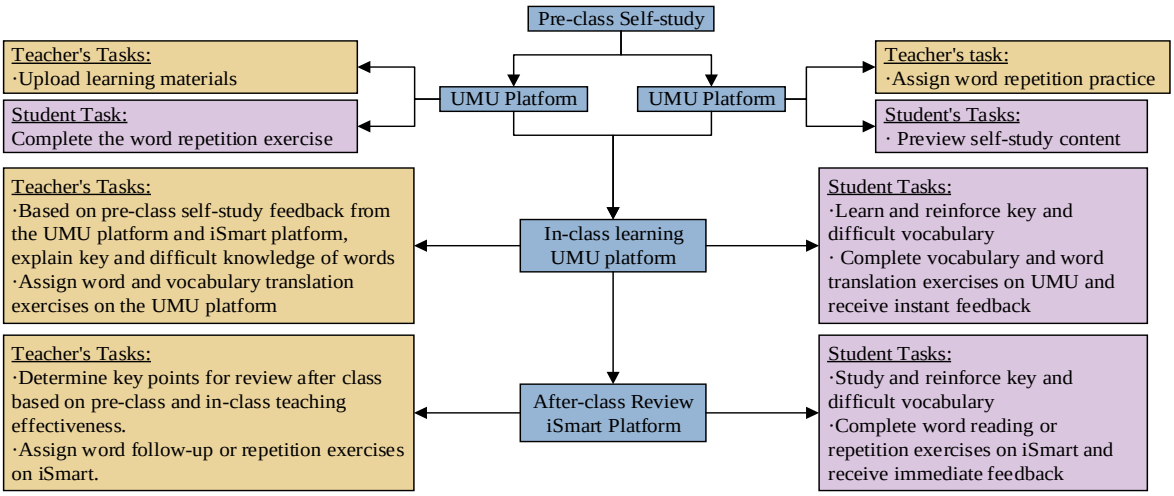

Figure 1: The "Precision Teaching" Model and Implementation Path for Spoken English

3.2 Application of Genetic Algorithms in Platforms

3.2.1 Modeling Content Organization Learning

Improvement of English language skills could be seen as a multiconditional optimization problem that is normally associated with the combination of an objective function and several conditions related to platform implementation and design. In considering the innovation of improvements for elementary students' English language skills, each content category is based on five key indicators that include amount, type, level, scope, and topic. Consequently, the structuring of the content may be expressed as: selection of personal content, which will include oral practice items, consists of selection from the repository of the content a number of oral practice items based on five criteria such that the content becomes expressible in the form of matrix below.

$$C = \begin{bmatrix} a_{11} & a_{12} & \cdots & a_{15} \\ a_{21} & a_{22} & \cdots & a_{25} \\ \cdots & \cdots & \cdots & \cdots \\ a_{n1} & a_{n2} & \cdots & a_{n5} \end{bmatrix} \tag{1}$$

The matrix C can then represent a set of spoken content, and the distribution of the column elements in the array meets the needs of each learner for language content and fulfills the purpose of English language learning for primary school students.

3.2.2 Generating initial populations

In the study of the innovative model of language proficiency enhancement, populations are not generated through random generation methods, but rather populations that fulfill the three basic requirements of rank, type, and theme are generated. The specific steps for generating a single set of content in the initial population are as follows:

(1) Input the course requirements of English language learning and initialize the algorithm.

(2) Extract the practice questionitem with type i, level j and topic k from the language learning library.

(3) If the number of grammatical parts is not satisfied then $i = i + 1$, go to (2), if satisfied then $i = 0$, $j = 0, k = 0$, go to (4).

(4)Extract the spoken practice questionitem with type i, level j and topic k from the spoken part of the content repository.

(5)If the number of speaking part is not satisfied then $i=i+1$, go to (4), if satisfied then $i=0$, $j=0$, $k=0$, go to (6).

(6)Extract the practice questionitem with type i, level j,topic k from the vocabulary of the content repository.

(7)If the number of vocabulary parts is not satisfied then $i=i+1$, go to (6), if it is satisfied then $i=0$, $j=0$, $k=0$, go to (8).

(8) Extract the practice questionitem with type i, level j, and topic k from the context repository of the content repository.

(9)If the number of context parts is not satisfied then $i=i+1$, go to (8), if it is satisfied then $i=0$, $j=0$, $k=0$, go to (10).

(10) Calculate the value of each attribute of this set of content and the adaptation value of the whole set of content.

(11) Place this set of content into the group.

3.2.3 Calculation of adaptation values

In genetic algorithms, the size of the fitness function value is often used to evaluate the merit of individuals in the population. In this paper, the fitness function is obtained by transforming the objective function, and the larger its value indicates the better the individual. The fitness function obtained is:

$$F=1/\left(1+\sum_{i=1}^{5}w_i e_i\right) \tag{2}$$

where e_i is the deviation of the expected value from the actual value distribution of attributes such as number, type, rank, scope and subject, and w_i is the proportion of each deviation. It can be determined that the smaller the error of the content individual to the constraints of content organization, the larger its fitness value, indicating that the extracted content individual Hugh is closer to the content organization goal.

The fitness values of each individual in the initial population, i.e., each set of content, are superimposed to obtain the total fitness value:

$$F=\sum_{i=1}^{N}f_i \tag{3}$$

where N is the total number of individuals in the population.

Calculate the selection probability as the fitness value of each individual divided by the total fitness value:

$$p_i = f_i / F \tag{4}$$

Calculate the total probability of a population constructing a roulette wheel:

$$P=\sum_{i=1}^{N}p_i \tag{5}$$

Perform a roulette wheel selection to generate a [0,1] random number r and select individuals if $r < p_1$.

Repeat the computation of selection probability, roulette wheel drinking roulette wheel selection until N individuals are selected, i.e., N sets of content.

3.2.4 Crossing operations

Crossover is the exchange of part of the genes of two selected chromosomes in a certain way to form two new individuals. Commonly used crossover methods include single-point crossover, two-point crossover, arithmetic crossover and so on i, and in this paper, we adopt the deformed arithmetic crossover operation. Each individual within the initial population is randomly paired into pairs, and the size of the above population is N, then there are a total of $N/2$ pairs of individuals.

In each pair of individuals, generate a random array of numbers in the interval [0,1] of length 1 of the length of the coding string, $R = \{r_1, r_2, \ldots, r_l\}$, and for all genes whose crossover rate is less than the selection rate, perform an arithmetic crossover operation, and then the i th locus of the gene after the operation is number is:

$$\begin{cases} x_A^{'} = \alpha x_B + (1-\alpha) x_A \\ x_B^{'} = \alpha x_A + (1-\alpha) x_B \end{cases} \tag{6}$$

where α is a random number within [0,1]. For the study in this paper, crossover produces more appropriate learning content, increases the diversity of content, and improves the global search capability of the genetic algorithm.

3.2.5 Setting termination conditions

A genetic algorithm involves a cyclic repetitive procedure aimed at determining the best possible solutions. Normally, each iteration will not lead to an optimum solution; therefore, it is necessary to develop termination conditions that can be used to stop the search process. There are three common techniques used to terminate the search procedures: (i) setting the number of iterations; (ii) setting deviation, which means stopping the procedure when the deviation between fitness and the targeted value goes beyond a defined value; and (iii) tracking changes on fitness over time, which means halting the search when the fitness value of the best individual does not change. In the current study, a hybrid technique that integrates the first and last strategies is applied, such that termination of the procedure takes place when the fitness value of an individual meets the requirement at a specified number of iterations; otherwise, the process will continue until the preset number of iterations is reached.

In the new era of education environment, before students carry out English online learning, accurate teaching is implemented through the dual platform of UMU and iSmart, and according to the results of the genetic algorithm calculation, students are arranged for the corresponding courses, organized group learning or arranged for online speaking teaching [16].

4 Innovative teaching based on the output-oriented approach

4.1 Output-oriented method teaching system

As an attempt to overcome the divergence between inputs and outputs, i.e., the separation of learning and using, which is typical of the traditional English teaching approach [17], the POA

includes three parts, namely, teaching philosophy, teaching assumptions, and teaching process. Figure 2 represents the instructional contents of POA, in which the teaching philosophy includes Learning Center Saying, Learning and Use Saying, Cultural Communication Saying, and Key Competence Saying. According to Learning Center theory, all activities in the classroom teaching are meant to facilitate the occurrence of learning for the purpose of achieving results and making progress. Learning and Use theory emphasizes that, in practical classroom instruction, there shall be no significant time interval between input and output; learning and using should proceed in one process. The theory of cultural communication claims that in teaching a foreign language, both the native culture of the learners and the target-language culture should be included so as to improve intercultural communication. The Key Competence Saying stresses that the ultimate goal of foreign language instruction is to improve students' key competences, which include linguistic competence, learning competence, critical thinking competence, cultural competence, creative competence, and cooperative competence [18].

Pedagogical assumptions include output-driven, input-enabled choice learning and assessment for learning. The output-driven assumption refers to the reversal of the traditional teaching sequence of input followed by output, allowing learners to attempt output first and then provide targeted input after they have found difficulty in producing output. The input-enabling assumption means that after students attempt output and find it difficult, the teacher must provide targeted input to enable students to complete the output task. The selective learning assumption means that the teacher must select the content, language, and structure necessary for students to complete the output task when guiding students to learn the input. The assessment for learning assumption means that the teacher must make assessment an integral part of instruction and provide remedial instruction to address typical problems in students' output texts, rather than merely giving feedback on students' output texts.

The teaching process is a dynamic cycle of “driving - facilitating - evaluating” in the context of teacher-led and teacher-student co-construction. In the driving stage, the teacher presents communicative scenarios and challenges the students' output ability, assigns output tasks, mobilizes the students' motivation to learn, stimulates the desire to produce output, and drives learning. In the facilitation stage, teachers provide the necessary input materials, guide students to selective learning, acquire the content, language form or discourse structure needed to complete the task, learn to use it, and facilitate the completion of the output task; the evaluation stage. Teachers make timely or delayed evaluations of students' “products” or “semi-finished products” in the process of completing the tasks.

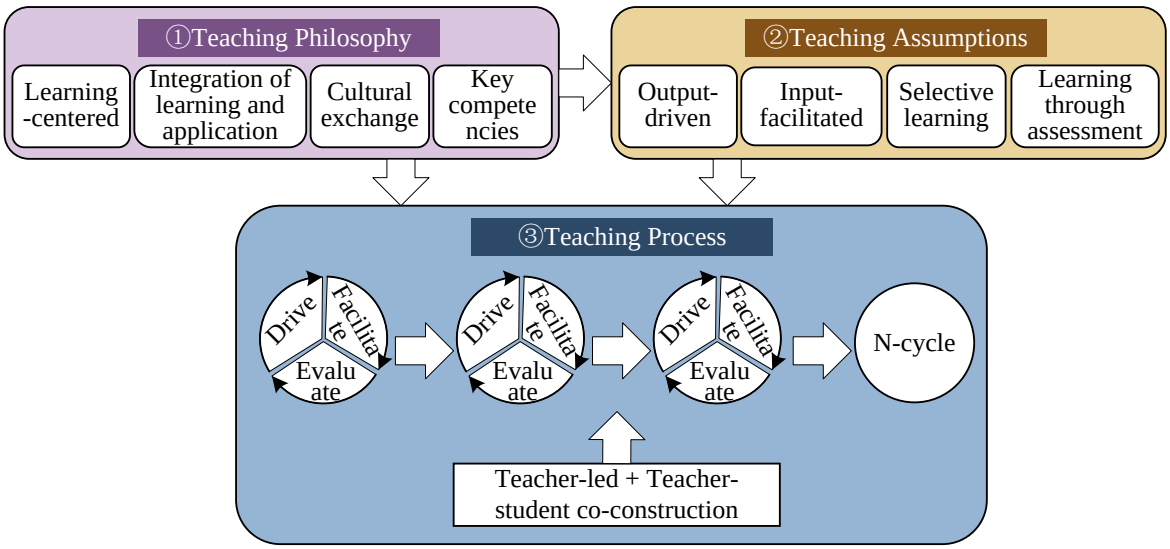

Figure 2: Content of Output Oriented Approach to Teaching

4.2 Instructional Design Strategies

The most distinctive feature of the output-oriented approach is that it advocates the integration of learning and use, closely integrating input learning with output utilization. The close integration of learning and use can enhance students' attention to certain language forms in the input materials and increase the possibility of using these language forms again in the output, thus strengthening the synergy between language input and output and improving the effectiveness and efficiency of foreign language teaching. This study applies the output-oriented method to the overall teaching of English language, and Figure 3 shows the teaching design of English language proficiency enhancement. On the basis of the research on unit teaching based on thematic significance, the design of unit output tasks and the formulation of unit evaluation strategies are integrated into the design and implementation of unit teaching, which guides students to pay attention to the content and significance of the language and at the same time strengthen the learning of language forms, so as to improve the quality of language learning and realize the integration of learning and use.

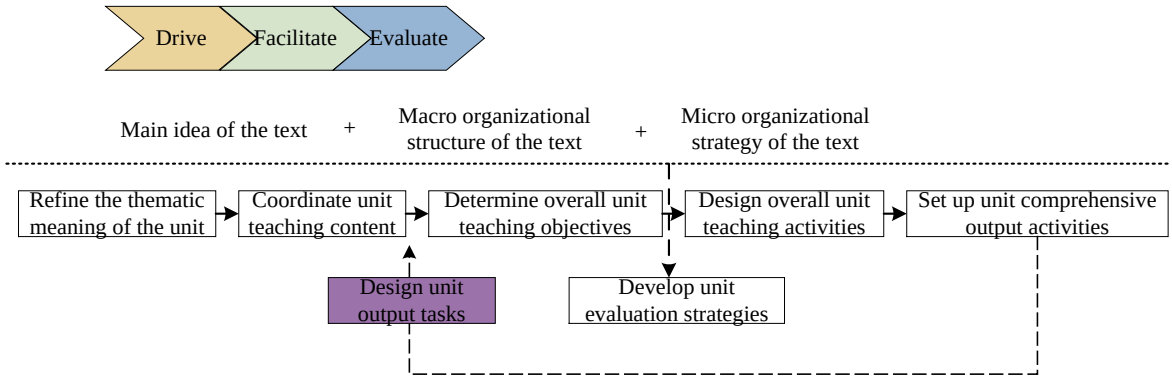

Figure 3: Instructional Design for English Language Proficiency Enhancement

5 Analysis of the effect of English language proficiency improvement in elementary school

5.1 Questionnaire design and data collection

In the pre-preparation stage, the first step is to design the questionnaire, then send out the questionnaire to collect the data related to students' English language learning, such as the final examination results and oral test results, and analyze and discuss the data of the questionnaire to test the effectiveness of the innovative teaching of English language.

In order to validate the questionnaire, Cronbach's alpha was used. According to the conventional interpretation, values above 0.8 mean high reliability, while values between 0.7 and 0.8 indicate good reliability, values ranging from 0.6 to 0.7 indicate acceptable reliability, and values below 0.6 suggest poor reliability. The results of the reliability test are given in Table 1 below, with reliability of 0.916 shown in this particular case.

Table 1: Reliability analysis of the questionnaire

Cronbach Alpha	Item count
0.916	20

The validity test is conducted to find out if the tool used in the study is sensible and valid. In this study, the validity of the survey instrument was tested through factor analysis. Particular emphasis was made on the Kaiser-Meyer-Olkin (KMO) test and the Sphericity test by Bartlett. The results of the validity test are shown in Table 2, wherein the KMO test result is 0.869 (greater than 0.6), while the Sphericity test of Bartlett is significant ($p < 0.001$).

Table 2: Analysis of the validity of the questionnaire

KMO Sample Suitability Quantity	0.869	
Bartlett's test of sphericity	Approximate chi-square	967.258
	Degrees of freedom	209
	Significance	<0.001

Using the time of the large classroom, the questionnaire survey was conducted on the students of the experimental class and the control class at the same time, and the students were supervised to answer the questionnaires carefully and ensure that sufficient valid questionnaires were retrieved, and then the data were analyzed by using the SPSS software. The subject elementary school students using the dual platform of UMU and iSmart combined with genetic algorithm and guided by the output-oriented method were categorized as the experimental group, and the subject elementary school students in the traditional classroom were categorized as the control group.

5.2 Improvement of language skills

5.2.1 Comparison of overall level of spoken language

The speaking pre-test scores of the control and experimental group subjects were statistically analyzed using the independent samples t-test, and the descriptive statistics of the speaking scores are shown in Table 3. N is the sample size, M is the mean, standard deviation is the SD, degrees of freedom is the df, and MD is the mean only difference. There is a significant difference between the control group and the experimental group subjects in the speaking posttest scores ($t=2.52, df=45, p=0.01<0.05$), and the experimental group subjects' scores are significantly higher than the control group subjects' scores (MD=4.12), which indicates that the dual-platform combined with the output-oriented method teaching mode is more capable of improving the elementary school children's speaking scores as a whole compared with the traditional teaching mode.

Table 3: Descriptive statistics of speaking scores

Group	N	M	SD	t	df	p	MD
Control group	75	4.13	1.65	3.20	47	0.05	4.24
Experimental group	75	4.02	1.41	2.52	45	0.01	4.12

5.2.2 Comparison of English speech scores

The results of intergroup comparison of voice scores are shown in Table 4, and there is a significant linear relationship between the subjects' voice scores, with a regression coefficient of $\beta=0.759$, $p=0.000$, which is much less than the 0.05 level of significance. There is a significant difference between the subjects' speech scores in the control and experimental groups, $p=0.981$ in the experimental group, which is much greater than the 0.05 level of significance, and the experimental group's oral teaching model is more effective than the

traditional model in improving the learners' speech.

Table 4: Results of intergroup comparisons of speech scores

Group	Relief	β	p	95% confidence interval	
				Minimum value	Maximum values
Control group	0.125	0.759	0.802	-0.812	0.765
Experimental group	0.008	0.759	0.981	--0.765	0.812

5.2.3 Comparison of Accuracy and Fluency

The accuracy and fluency statistics after the teaching trials are shown in Table 5. *Indicates that it is significant at 1% level, the subjects in the experimental group performed better than the subjects in the control group in terms of accuracy and fluency in spoken language use. There was a significant difference between the control and experimental group subjects in terms of accuracy of spoken language use, with the experimental group (78.32±8.45) outperforming the control group (73.47±7.61). There was also a significant difference between the subjects in the control and experimental groups in terms of fluency in the use of spoken language (p=0.04*, p=0.02*), suggesting that the dual-platform combined with the output-oriented method is more likely to significantly improve the students' accuracy and fluency in spoken language than the traditional teaching method.

Table 5: Accuracy and fluency statistics

Metrics	Group	M±SD	t	df	p	MD
Accuracy	Control group	73.47±7.61	2.02	46	0.04*	5.12
	Experimental group	78.32±8.45	2.13	46	0.02*	4.85
Fluency	Control group	73.47±7.61	2.37	46	0.04*	5.97
	Experimental group	78.32±8.45	2.41	46	0.02*	5.92

5.3 Learning behaviors and attitudes

5.3.1 Self-directed learning attitude survey

The survey of students' attitudes towards independent learning is shown in Figure 4, with Question A as preferring to conduct independent learning in the dual-platform combined with output-oriented method teaching mode, and Question B as believing that conducting independent learning in the dual-platform combined with output-oriented method teaching mode is an effective learning. Question C for believing that the dual-platform combined with output-oriented method teaching mode makes independent learning easier, and Question D for having the ability to conduct independent learning in the dual-platform combined with output-oriented method teaching mode. 67.2% of the students surveyed preferred to engage in independent learning under the dual-platform combined output-oriented method teaching mode, respectively, while 24.1% and 8.7% answered undecided and disagreed.80.2% of the students surveyed believed that engaging in independent learning under the dual-platform combined output-oriented method teaching mode was an effective learning, while 13.0% and 6.8% answered undecided and disagreed.82.2% of the surveyed students believed that the innovative teaching model made their independent learning easier, 10.8% and 7.2% answered uncertain and disagreed.71.3% of the surveyed students believed that they were capable of conducting independent learning under the innovative teaching model, 20.9% and 7.8% answered uncertain and disagreed. The results indicate that most of the surveyed students subjectively accept and are willing to engage in self-directed learning under the dual-platform combined with output-

oriented method model.

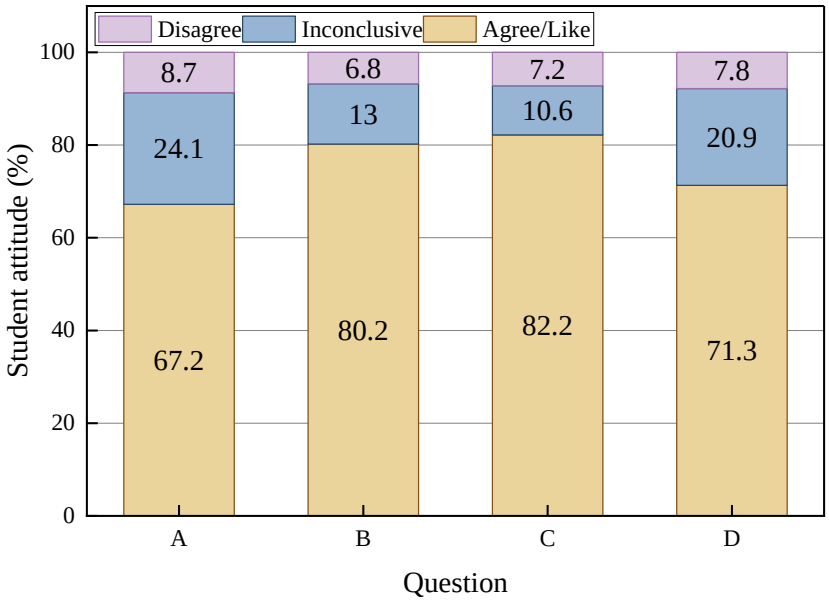

Figure 4: Survey on Students' Attitude towards Independent Learning

5.3.2 Contribution to the English language

The satisfaction evaluation of the facilitation of English language under the teaching model of dual platform combined with output-oriented method is shown in Figure 5. The teaching mode innovation used in English language teaching in elementary school received a better evaluation, especially the pre-course guided learning and rich online learning resource materials promoted the students' motivation for independent learning, improved the students' self-management and independent learning ability, the students' satisfaction with grammar and vocabulary in the blended teaching mode reached 84.2% and 90.1% respectively, and genetic algorithms in the enhancement of English language ability plays a key advantage.

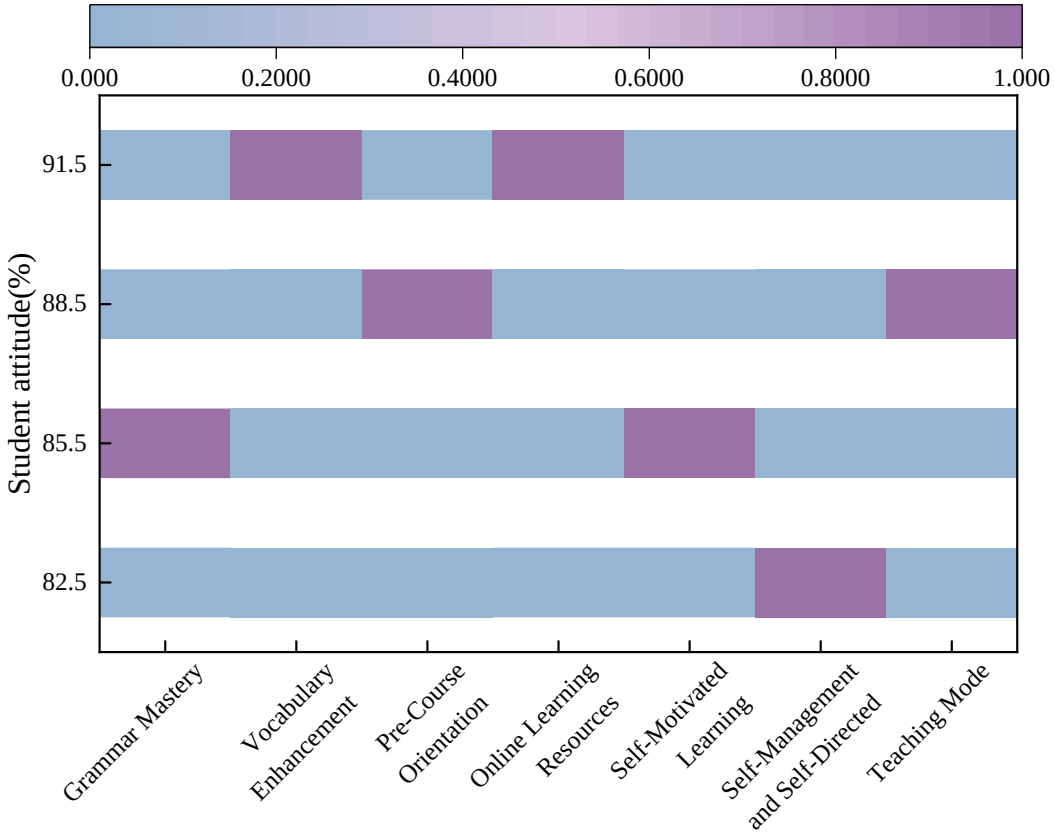

Figure 5: Satisfaction evaluation of the facilitating role of the English language

5.4 Analysis of Teaching Effectiveness

5.4.1 Evaluation of teaching methods

Students' satisfaction evaluation of speaking teaching activities is shown in Figure 6, with a satisfaction rate of more than 80%. 81.2% of the students think that the speaking activities organized by the teacher can stimulate their interest in participating, 80.2% of the students think that there are sufficient opportunities to practice speaking in the classroom. 91.2% of the students think that the teacher's way of organizing the speaking activities is innovative, 85.6% of the students think that the teacher can solve their problems in a timely manner, and help them overcome difficulties in oral expression, and 87.5% of the students think that teachers organize speaking activities in various forms.

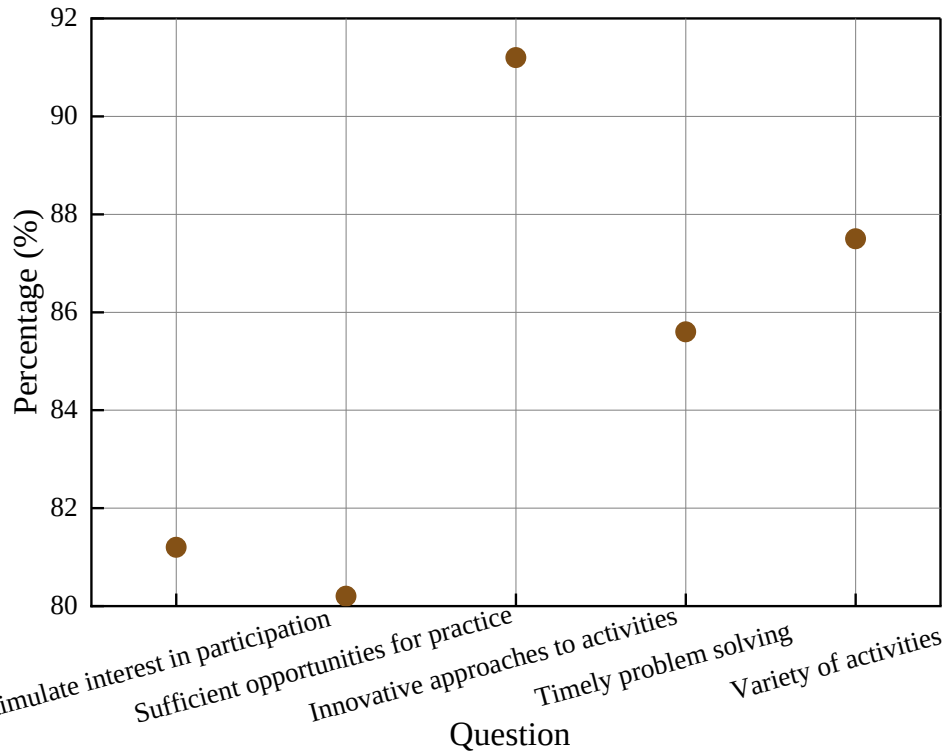

Figure 6: Students' satisfaction ratings of speaking teaching activities

5.4.2 Analysis of learning achievements

Comparison of the scores of each group is shown in Table 6, compared with the traditional teaching mode, the students in the experimental group have higher scores in contextual analysis ($P<0.05$), which is mainly reflected in the fact that the students' groups are more prepared for speaking, more active in their discussion performance, and more explicit in their results under the model of the dual-platform combined with the output-oriented method. At the same time, students in the experimental group also had higher scores in grammar and speaking practice ($P<0.05$), which were mainly reflected in the accuracy and depth of analyzing problems by flexibly applying what they had learned.

Table 6: Comparison of performance in each session

Sessions	Grades		P value
	Control group	Experimental group	
Grammar	71.6±6.9	82.3±8.1	<0.05
Speaking practice	77.8±7.5	86.2±9.4	<0.05
Contextual analysis	89.7±8.3	83.4±7.8	<0.05

6 Discussion

6.1 Effective use of advanced teaching tools

Proper application of sophisticated teaching instruments requires that effective instruction should be used to enable big data and artificial intelligence to play a full part in ensuring that the role of the elementary school English classroom in helping with the development is achieved through the innovation of oral English teaching methods [19]. The current educational

environment requires the newest educational theory stating that English lessons should be placed within the appropriate cultural context, developing cultural knowledge of English among students, as well as understanding the significant distinctions between English and Chinese, with the aim of minimizing the level of difficulty in learning and enhancing the level of English literacy. English spoken teaching is extremely practical and applicable, and it is extremely important to view cultural education as the starting point of teaching method innovation. As an illustration, prior to official oral instruction, multimedia technology is used to present the relevant English and Chinese cultural background, to compare differences between the English and the Chinese system regarding terminology, and to impart rational oral skills on the basis of perceptive cultural awareness. We suggest that the student uses English culture learning websites, software, and self-media that will allow him or her to study English language and culture in various ways after class. The authentic implementation of oral English learning in student life brings changes in the way students perceive language learning and makes them more intrigued by oral English learning.

6.2 Making full use of online teaching tools

Use all available online teaching resources to the fullest, such as uploading speaking test or speaking exercise materials on the English speaking education site, requesting that students take the test and exercise tasks according to the requirements, and tracking the progress of students by using the data analysis feature [20]. Create a wide range of English speaking events in the platform, such as an English movie dubbing competition, an English song singing competition, etc. Under the influence of the spirit of competition and games to engage students in performing oral training exercises independently, and under different teaching strategies, develop and enhance the English oral language communication abilities of elementary school children and their literacy level.

7 Conclusion

This study constructs a dual platform based on UMU and iSmart in order to carry out accurate assessment, accurately support independent learning, and enhance students' independent learning ability. Genetic algorithms are applied to enhance the English language proficiency of primary school students with the output-oriented teaching model as the dominant one. The results of the questionnaire survey show that the experimental group is better than the control group in terms of the overall level of speaking ($t=2.52, df=45, p=0.01<0.05$), and that the experimental group's speaking teaching mode is more effective than the traditional mode in improving the learners' speech. And accuracy experimental group (78.32 ± 8.45) performed better ($p<0.05$) compared to control group (73.47 ± 7.61). The analysis of the speech scores showed that the model had a positive effect in improving speech. In addition, more than 80% of the students were satisfied with the classroom speaking activities, and 84.2% and 90.1% of the students positively evaluated the grammar and vocabulary instruction, respectively. In terms of learning attitudes, most of the students agreed that the model promotes independent learning and self-management. The proposed study provides a generalizable paradigm for the practice of English language proficiency improvement in elementary school, and the paper also suggests the use of advanced teaching tools and online teaching tools to help reform English teaching in elementary school.

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