

# *Innovative Development of College English Education in the Age of Media Information*

Zhang Yue

*Department of International Cooperation and Exchange, Tianjin College, University of Science and Technology Beijing, Tianjin, 301830, China*

**Keywords:** Mediation Intelligent Adjustment Algorithm; Personalization; Test Items; College English Flipping classroom Teaching

**Abstract:** In this paper, in the age of media information, a kind of college English flipping classroom innovative teaching model dependent on mediation intelligent adjustment algorithm is put forward. Through the visualization of the knowledge points of college English flipping classroom in the English teaching contents, after the learning of the students, the test stack is used to select the targeted test items in accordance with the ability of the student individuals to learn English. And the mediation teaching contents are set on the basis of the test results to the student individuals, so as to achieve intelligent and mediation learning. Finally, through the research and analysis of the innovative teaching model of college English flipping classroom, compared with the traditional English teaching, flipping classroom innovative teaching mode that is dependent on the mediation intelligent adjustment algorithm can greatly enhance the interest of students in learning English and speed up their absorption of knowledge. And it will further facilitate the organic integration of the college English flipping classroom teaching method with the traditional education.

## **1. Introduction**

The 21st century is media information age. And the world is constantly evolving daily. In the information age, the living standard has been improved by many grades. In respect of the flipping classroom teaching of college English, there has also been a kind of new network mediation intelligent adjustment algorithm [1] specially designed for the English learning students. The traditional computer teaching technology has been very obsolete, which cannot keep up with the long-term development of the students in the new era. Hence, it is necessary to replace the obsolete technology with the new virtual multimedia teaching [3-5]. Modern mediation intelligent adjustment algorithm can develop different teaching programs for different students in accordance with their specific conditions, and tailor make a set of learning mode that is applicable to them exclusively. The targeted teaching will be able to adapt to the needs of the students and improve their learning efficiency [2-3]. The specific method is taking the students majoring in English as the subject of

deduction, and computer as the tools to assist in the teaching [4-5], and passing on the concepts of the teaching experts set in the computer to the students through the mediation intelligent adjustment algorithm. The students can learn on the computer at any time, to achieve the purpose of human-computer interaction and learning [6].

In view of this point, with respect to the above-mentioned concept, a kind of college English flipping classroom Innovative teaching model based on the mediation intelligent adjustment algorithm is put forward to cultivate the students. Many different types of subordinate populations are set in the mediation intelligent adjustment algorithm. The memory data are stored through the test station. If the students use it, the learning content that is corresponding to the student will show up automatically. And then the test station will tailor make a set of learning program specifically for the student with binary code programming, which will be able to identify the corresponding learning test content with high efficiency. The new set of system mainly monitors and controls the learning of the students in a timely manner by means of mediation intelligent adjustment algorithm. In combination with the learning situation of the individual students, the students are given priority to select the test items, to truly implement the human – computer English teaching application in the training and education method.

## 2. The Application of Mediation Intelligent Adjustment Algorithm in College English Flipping classroom

There are very few teaching methods that make use of mediation intelligent adjustment algorithm in China. And the mediation intelligent adjustment algorithm is mainly applied in western countries such as Europe and the United States. The system mainly uses the graphics to construct the spatial network between the chains of relationships and connect different learning objects to each other. It contains five key points, which include the intermediate node of the individual point connection, the connection, and the different degrees of individual mastery, the corresponding proposition and the common intersection range.

If the individual student is in a D-dimensional space, the designed population is  $2 \times N$  (the number of the lead individuals minus the number of the subordinate individuals equals to N). The nectar source and the lead individuals correspond one by one, that is to say, the number of the lead individuals; and the student individual at the i-th position is denoted as  $X_i = (x_{i1}, x_{i2}, \dots, x_{iD})$ . First, the probability of random generation at the N-th position is calculated as the following:

$$x_{ij} = x_{\min,j} + rand \bullet (x_{\max,j} - x_{\min,j}) \quad (1)$$

In the above calculation formula,  $i \in \{1, 2, \dots, N\}$ ,  $j \in \{1, 2, \dots, D\}$ , in which rand stands for the probability of individuals randomly occurring between [0,1], and Xmin and Xmax stand for the minimum and maximum values within the range.

During the scanning period, the subordinate individuals indicate the probability of the occurrence of the nectar source in accordance with the information displayed by the lead individual. And the specific calculation formula is as the following:

$$p_i = fit_i / \sum_{i=1}^N fit_i \quad (2)$$

The fit in the above formula indicates the degree of fitness corresponding to the nectar source individual.

The probability of the random scanning of the lead bee colony and the subordinate bees within the nectar source range is calculated in accordance with the following formula, and the details are as the following:

$$v_{ij} = x_{ij} + \varphi_{ij} \bullet (x_{ij} - x_{kj}) \quad (3)$$

It is assumed that in the calculation, the quality of the honey source has not been improved after the wireless cycle, then the leading bee will drop the position so that the object is programmed as the probe bee. The position of the new nectar source randomly occurring during the change period is calculated in accordance with the equation (1).

### 3. Flipping classroom Teaching of College English Based on the Mediation Intelligent Adjustment Algorithm

The new college English flipping classroom teaching is aimed at the students who practice English. Students of different levels do not have the same experience of the learning content. And the learning process they are subjected to is also very different. The new system is tailor made for different English learning individuals. And the new English Innovative teaching model in combination with the mediation intelligent adjustment algorithm that is put forward in this paper is similar to the one shown in Figure 1.

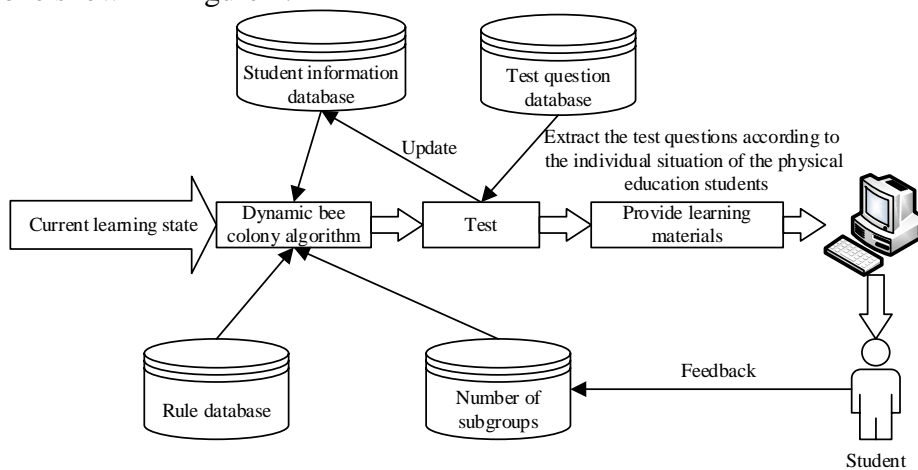


Fig.1 College English flipping classroom teaching process

In the modern intelligent teaching system, different learning programs generally correspond to different college English flipping classroom knowledge architecture. Among them, the corresponding arrangement on the learning items is carried out by using the mediation intelligent adjustment algorithm. And how to make use the programs to control the presentation college English flipping classroom knowledge architecture is a difficult problem to be fully solved in the College English flipping classroom Innovative teaching mode of mediation intelligent adjustment algorithm. In the mediation intelligent adjustment algorithm, two different individual students are connected to a frame connection, and the connection stands for the order of the contents in which the individual student needs to follow the order in which they acquire the cognitive ability. The relationship between the learning object and the individual relationship is presented by the relevance  $R_{ij}$ ,  $R_{ij} = \{ \langle C_i, C_j \rangle | i, j = 1, 2, \dots, n, i < j \}$ , in which  $R_{ij}$  stands for the degree of correlation between the learning individual  $C_j$  and the learning precursor object  $C_i$ . It is set that  $\sum_j R_{ij} = 1$ , in which, the greater the value of  $R_{ij}$  is, the greater the correlation between them is, and the more closely linked they are..

In accordance with the mediation intelligent adjustment algorithm, the program is a graph with arrow direction but no loop. The individual objects set in the program are connected into a node for the effective data storage. In the beginning, the mediation intelligent tuning algorithm is used for the weighing the threshold settings developed specifically by the experts in the industry and the teachers.

#### 4. Analysis of Teaching Case

In the traditional media teaching method, after they have completed their learning programs, all the learning situations related to their learning are passed on to the individual students. In this process, the selection of the test content that is corresponding to them is absent. After they have completed the learning tasks of C3 object, the corresponding learning content items include Q2, Q3, Q4, Q6, Q8 and Q9, all of which are used to test the learning status of the students. And the results can be shown in Table 1. In case there are relatively many miscellaneous contents in the test items, the difficulty of identifying the test content is increased. In this case, all the information that has been detected will be passed to the students, which will consume a lot of time that should not be wasted, and also reduce their learning effect at the same time.

Table 1 Screening of the test content

Selection method	Selected test items
English dependent on the mediation intelligent adjustment algorithm	Q2, Q3, Q4, Q6, Q8, Q9
English teaching method	Q3, Q4, Q8

In this paper, the Innovative teaching model of college English flipping classroom that is dependent on the mediation intelligent adjustment algorithm is put forward. After the students complete the test, the new system will automatically detect the test questions and test the correct probability of the students in the test database of the system one by one.  $CR(S_i) = \text{Correct}(Q_i)/N \square \text{Correct}(Q_i)$  stands for the number of the correct individual students, and N stands for the number of the first N test items of the optimal mediation intelligent adjustment algorithm.

Table 2 Student individual detection probability

Question	$S_1$	$S_2$	$S_3$	$S_4$	$S_5$
$Q_3$	1	0	1	0	1
$Q_4$	1	0	1	1	1
$Q_8$	0	1	0	1	1
$CR(S_i)$	0.67	0.33	0.67	0.67	1.00

From the nine and three in the above table, it can be seen that the probability of the student giving the correct answer is 67%. The calculation formula is  $CR(S_i) = 2/3 = 0.67$ . The scope set by the program is T-Value, thus the degree of the mastery in the knowledge points of the college English flipping classroom by each English student can be judged on this basis. It is assumed that  $CR(S_i) \geq T$ -Value, it indicates that the student has grasped the knowledge point of the college English flipping classroom very well.

If the students are familiar with the learning of C3, the total number of the individuals to be tested in the program should be set as  $N=3$  and  $T$ -Value = 0.5. Through the test of the individual students, it is necessary to select the first 3 test contents that are the greatest and the most optimal in the whole mediation intelligent adjustment algorithm. In the aforementioned table, those that are in line with the requirements are Q3, Q4 and Q8. After the learning of the other S series of the objects, the results of the items tested can be seen in Table 2. And it can be obtained that the individual students  $S_1$ ,  $S_3$ ,  $S_4$  and  $S_5$  can proficiently master the related knowledge in the college English flipping classroom. And the college English flipping classroom knowledge architecture is adjusted in accordance with the mediation intelligent adjustment algorithm that has already been existing in the system, to develop the characteristics of the object in the learning in the future. If the student  $S_2$  fails to

complete the test successfully, it is necessary to continue to select the test contents from the previous English teaching contents.

Through the above simulation data analysis, it can be concluded that the English teaching dependent on the mediation intelligent adjustment algorithm is a good method of education, which can demonstrate the contents perfectly. Through the intelligent selection of the learning objects on the related testing content, the time waste can be reduced in the local context. And the test items can be selected with high efficiency to further enhance the learning interest of the students and enhance their ability to learn.

## 5. Conclusions

In this paper, in the age of media information, a kind of college English flipping classroom Innovative teaching model that is dependent on the mediation intelligent adjustment algorithm is put forward. Through the mediation intelligent adjustment algorithm, the knowledge points of the college English flipping classroom to be learned are learned, and the correct learning content is passed on to the students. After a series of research and analysis, the results show that this Innovative teaching model can improve the interest of students in learning. In the subsequent research work, it is necessary to keep studying this Innovative teaching model for continual research and deepening.

## References

- [1] Xiumiao, Z., & Jun, Y. (2011). Reflection and exploration of interactive teaching in college English intensive reading classroom of newly built universities under network environment in minority areas. *IEEE*, 513-517.
- [2] Macdonald, C., & Pinheiro, M. (2015). Working in the zone of proximal development (zpd) in the English classroom: a case study on the teaching of literature. *Canadian Journal of Forest Research*, 34(6), 1332-1342.
- [3] Darda, A. (2013). Using English story jokes to facilitate the classroom interaction in teaching speaking : a case study at the second year of senior high school sma PGRI 8 kebun jeruk. *Neuroscience*, 232(3), 226-238.
- [4] Erling, Elizabeth, Burton, Sonia, & McCormick, Robert. (2011). The classroom practices of primary and secondary school teachers participating in english in action (study 2a2). *Journal of Biological Chemistry*, 248(18), 6366-6374.
- [5] Apperley, T. (2010). What game studies can teach us about computer games in the english and literacy classroom. *Journal of Neurosurgery*, 20(3), 711-714.
- [6] Kroislindner, A. (2011). International legal English : a course for classroom or self-study. *Journal of Applied Polymer Science*, 130(4), 3001-3008.