

Research on the Construction of English Teachers' Classroom Teaching Ability System Based on Artificial Intelligence

Yongyan Dong*

School of Education, Yunnan College of Business Management, Kunming, 650106, Yunnan Province, China

*Corresponding author (Email: Dorisdong525@163.com)

Keywords: Artificial intelligence, Teaching ability system construction, English teacher classroom

Abstract: From the perspective of quality education, there are no effective, inefficient, or even over-standardized practices in the current English teacher classroom instruction standards. Analysis of pre-service foreign language teacher standards in Europe and the United States found that the study of English teacher classroom teaching standards in China should emphasize the professional autonomy of teachers and focus on implicit classroom teaching norms. The curriculum standard teaching will be incorporated into the standard, teachers' ability to develop independent learners will be emphasized, and the understanding.

1. Introduction

With the development of information technology and the wide application of modern educational technology in English teaching, the integration of information technology and English disciplines has continued to deepen. Classroom teaching skills are an important part of teachers' professional qualities. Under the information technology environment, English teachers' classroom teaching skills have been given new content and have new features. To explore how to cultivate the classroom teaching skills of English teachers in the information technology environment is not only the requirement of the information age for English teachers, but also the urgent need for the professional development of English teachers [1-2]. This article starts with the definition, characteristics and classification of classroom teaching skills. Through the analysis of the new connotation and new characteristics of English teachers' classroom teaching skills under the information technology environment, this paper discusses the training strategies of English teachers' classroom teaching skills under the information technology environment. Classroom teaching skills are an important part of teachers' professional qualities. There are a lot of researches on it at home and abroad, but there is no unified conclusion on the definition of their concepts [3]. Generally speaking, classroom teaching skills refer to a series of teaching behaviors that teachers use in classroom teaching, based on teaching theory, using professional knowledge and teaching experience, so that students master the basic knowledge of the discipline, basic skills and ideological education. Classroom teaching skills are both knowledge and a skill. Classroom teaching skills are individual and practical.

Classroom teaching skills are the individual knowledge and skills of teachers that directly affect their classroom teaching behaviors through repeated practice, experience, reflection, and comprehension in the specific classroom teaching practice context. They are individual and practical. It condenses the teacher's personal wisdom, emotions and beliefs. It is the knowledge and skills that teachers obtain from specific classroom teaching practices and are used to solve practical teaching problems. This gives teachers a distinct personal touch. It not only influences teachers' choice, understanding, acquisition and application of theoretical knowledge, but also guides teachers' daily education and teaching behavior [4-5]. Classroom teaching skills are implicit and silent. Implicitness and silence mean that classroom instructional skills are difficult to interpret logically through words, words, or symbols. They cannot be transmitted in a formal form and cannot be critically reconsidered, but can be obtained through physical or rational intuition. The implicit and mute nature of classroom teaching skills makes it difficult to evangelize, and it is

difficult to state and use actions [6]. Classroom teaching skills have procedural and tactical aspects in specific areas. Cognitive psychology believes that basic skills in specific areas are automated, procedural knowledge that does not require conscious control; strategic knowledge in specific areas is procedural knowledge that intentionally monitors the basic skills that are automated. Classroom teaching skills are used to solve problems in the special area of teaching. They include both automated basic skills and strategies for monitoring, planning, and organizing the basic skills that are automated [7]. As a kind of teacher professional skill, classroom teaching skills consist of ten elements. They are Import Skills, Language Skills, Interpretation Skills, Questioning Skills, Change Skills, Board Writing Skills, Feedback Skills, Presentation Skills, Ending Skills, and Classroom Organization Skills. Each of these skills focuses on the basic elements of classroom teaching skills. Raise the level of guidance and demonstration of model teachers; improve English teacher's teaching efficacy and metacognitive ability.

2. New features of English teacher' classroom teaching skills

2.1. Information technology environment

The traditional classroom teaching skills penetrate the information technology elements. Traditional classroom teaching skills are made up of ten elements that permeate information technology elements in the information technology environment. The following analyses the characteristics of the four representative classroom teaching skills in the information technology environment. Importing is the teaching behaviour when teaching enters a new topic. The basic task of importing skills is to arouse the student's interest in learning, form a learning motivation, and create conditions for the motivation of the teaching process. The traditional methods of introduction include opening remarks, physical demonstrations, experiments, and questions at the beginning of class [8]. In the information technology environment, English teachers can review old knowledge and introduce new lessons by playing courseware, video, audio materials, computer simulations, and online inquiries. The types of imported skills are richer, the methods are more varied, teachers have more choices, and they are more likely to arouse students' interest in learning and form a learning motivation. Language skills refer to the use of language to disseminate educational and teaching information. The acquisition of this skill is related to teachers' language ability and training situation. Under the information technology environment, one can use modern information technology to train teachers' language skills, and more importantly, they can use information technology tools (such as electro-acoustic teaching media) to deliver education and teaching information using language as a carrier [9]. English teachers' skills in using the teaching of amplifying equipment, using multimedia networks for language teaching skills, and using language laboratory teaching skills are all extensions of language skills in the information technology environment.

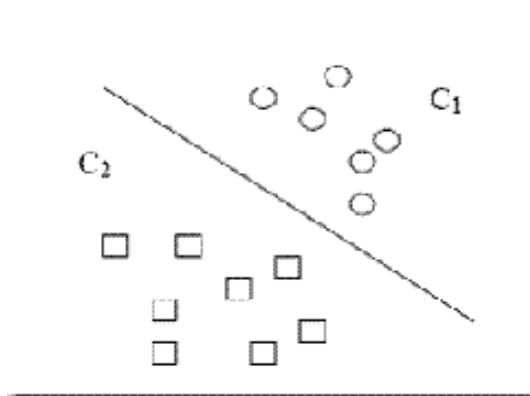


Figure 1. Classroom teaching skills

2.2. The definition of artificial intelligence

The traditional board writing skills mainly refer to the skills of using chalk to write teaching

content on the blackboard, including the writing of characters, the layout of boards, and the order of writing. In the information technology environment, the blackboard is no longer the only place for writing instructional content. Courseware PowerPoint presentations, web pages, and so on are the carriers for the presentation of teaching content. The selection of font sizes, the layout of pages, and the sequence of presentation of teaching content are all important contents of English teacher's classroom writing skills in the context of information technology. As long as English teachers have a certain level of information literacy, under the information technology environment, the acquisition and improvement of their classroom teaching skills can be guaranteed. English teachers are more likely to obtain such silent and procedural classroom teaching skills [10]. Under the information technology environment, teachers' classroom teaching skills have been given new meanings and penetrated the information technology elements. Therefore, the method of training should be the combination of traditional methods and modern methods. For example, the introduction of skills, language skills, questioning skills, etc., should not only pay attention to traditional methods such as drills, training, the old teacher's words and deeds, but also use modern means such as microteaching, recording, computer courseware and other means to improve classroom teaching skills.

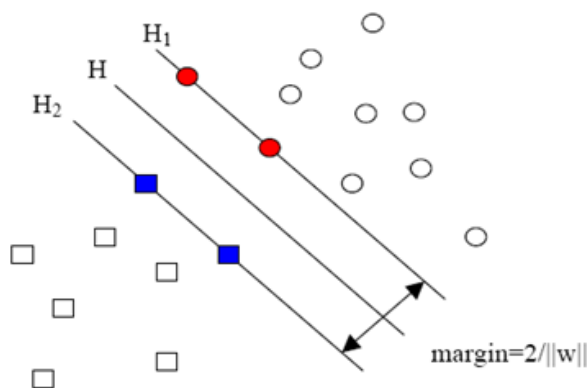


Figure 2. Classroom teaching skills implicit and mute

3. Worker's cognitive problem

3.1. Big data cognitive thinking of information data

Every cognitive subject is the intrinsic unity of perceptual thinking and rational thinking. In the process of understanding and understanding things, we cannot use only pure rational thinking to eliminate the interference of perceptual factors. Every human individual is a cognitive activist in the social network. It is inevitably influenced and influenced by emotional factors such as emotion and motivation. These factors are often the actual triggers of our psychological process and the source of major interventions. Therefore, for the research of artificial intelligence, it is necessary to deeply study the psychological operation mechanism of the human subject, and it is necessary to explore the relationship between the psychological and the behavior.

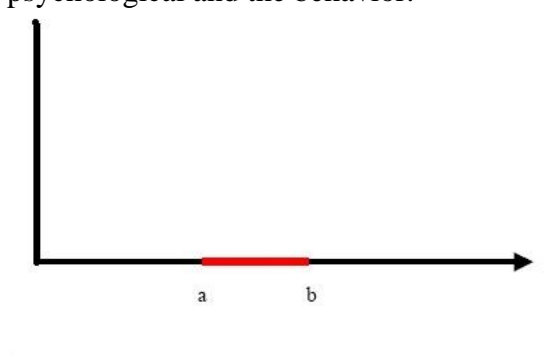


Figure 3. Procedural and Strategic

This kind of thinking first obtains all kinds of valid data, including sound, image, language, etc., through the surrounding environment of the world in which human beings live, and on this basis, it processes information and data. The advantage of this big data thinking in artificial intelligence research is that it can simulate human thinking and thinking processes based on the massive data obtained, and conduct effective data inference and reasoning based on mathematical knowledge such as probability. In order to scientifically and rationally control the behavior of machines, this makes artificial intelligence more targeted in the process of implementing “cognitive activities”, and even the perceptual cognition of human parts can be covered. In essence, this is a dialectical and dynamic information and data mode of thinking. It renews the exploration and recognition of human thinking characteristics from the perspective of physical mechanization, and highlights the perceptual and rational cognitive capabilities of humans in the cognitive process.

Teaching behaviors on new topics:

$$f(x') = \sum_{i=1}^n a_i y_i \langle x_i', x' \rangle + b \quad (1)$$

Teaching skills training strategy:

$$w = \sum_{i=1}^n (a_i y_i x_i) \quad (2)$$

Information Technology Environment:

$$g(x) = \langle w, x \rangle + b \quad (3)$$

Metacognitive ability of teaching skills:

$$g(x) = \sum_{i=1}^n a_i y_i K(x_i, x) + b \quad (4)$$

An important part of teacher professionalism:

$$y_i [(wx_i) + b] \geq 1 \quad (i = 1, 2, \dots, l) \quad (5)$$

Strategic knowledge in specific areas:

$$\begin{aligned} & \min \frac{1}{2} \|w\|^2 \\ & \text{subject to } y_i [(wx_i) + b] - 1 \geq 0 \quad (i = 1, 2, \dots, l) \end{aligned} \quad (6)$$

Classroom natural survey:

$$g(x) = \langle \sum_{i=1}^n (a_i y_i x_i), x \rangle + b \quad (7)$$

Data collection and analysis:

$$\delta_i = \frac{1}{\|w\|} |g(x_i)| \quad (8)$$

Target language classroom observation list:

$$y_i \left[(wx_i) + b \right] \geq 1 - \zeta_i \quad (i = 1, 2, \dots, l) \quad (9)$$

$$\zeta_i \geq 0$$

Backwash effect duration study:

$$C_+ \sum_{i=1}^P \zeta_i + C_- \sum_{j=p+1}^{p+q} \zeta_j \quad (10)$$

$$\zeta_i \geq 0$$

1) Big data thinking: human cognitive problems in the research process of artificial intelligence, one area that will inevitably be involved is linguistics. The reason is that the correct use of language is one of the prominent features of human intelligence. To realize the real sense of artificial intelligence, we must overcome the technical problem of human language representation. The biggest theoretical obstacle encountered in solving this problem today is contextual problems. This kind of reasoning method has obvious manifestation in the cognitive thinking of big data. Applying this kind of thinking mode to artificial intelligence will make up for the deficiencies in contextual problems and natural language understanding problems, thus creating new research approaches and methods. Here, big data abductive thinking as an external reasoning method is not simply understood as the inverse of phenomena to essence in the application process of artificial intelligence. But first, based on massive data, a theory must be pre-set to achieve a certain intelligent goal or task, and then reverse reasoning should be conducted before judgment and adjustment can be made.

2) Big data thinking approach: the big data technology and the big data thinking based on it provide a reliable research approach for the related research of the artificial intelligence paradigm. The so-called paradigm is a type of model or model recognized by the academic world. It is the theoretical foundation and practical norm in which conventional science operates, and it is a collective term for philosophical hypotheses, norms, and methods. From the research perspective, the development process of science is a process of establishment, transformation, or replacement of a paradigm. In the past, artificial intelligence benefited from the parallel development and complementarity between the three paradigms of symbolism, connectionism, and behaviorism. However, these three paradigms have encountered bottlenecks that are difficult to overcome when simulating human intelligence. The big data layered simulation paradigm and the big data evolution simulation paradigm are two paradigms Abstracted out based on the data analysis technology. They provide an innovative approach for artificial intelligence research in the future. At the same time, on the technical level, the accuracy and effectiveness of intelligent simulation are further enhanced.

3.2. Research tools and methods

The previous studies of cognitive philosophy, especially the study of psychosomatic relationships, have provided many frontier and inspiring theories for artificial intelligence in simulating human thinking. However, the problems faced by the Institute of Artificial Intelligence are not simply the issue of psychosomatic relationships, but also the relationship between the various levels of human thinking. In general, the relationship between human thinking patterns and the various levels of the thinking process is topological in nature and seems to have little to do with the symbolic and connectivity paradigms of the physical hierarchy that are now well known. Therefore, a new paradigm is urgently needed to enable data codes of various representational forms to form a higher-level topology holography system, thereby achieving similar topological structures similar to human intelligence thinking. For this reason, the hierarchical simulation paradigm and evolutionary paradigm of big data are based on the hierarchical and evolving characteristics of the human intelligence system to conduct analysis and research, which provides the possibility for artificial intelligence to effectively simulate the human complex thinking system.

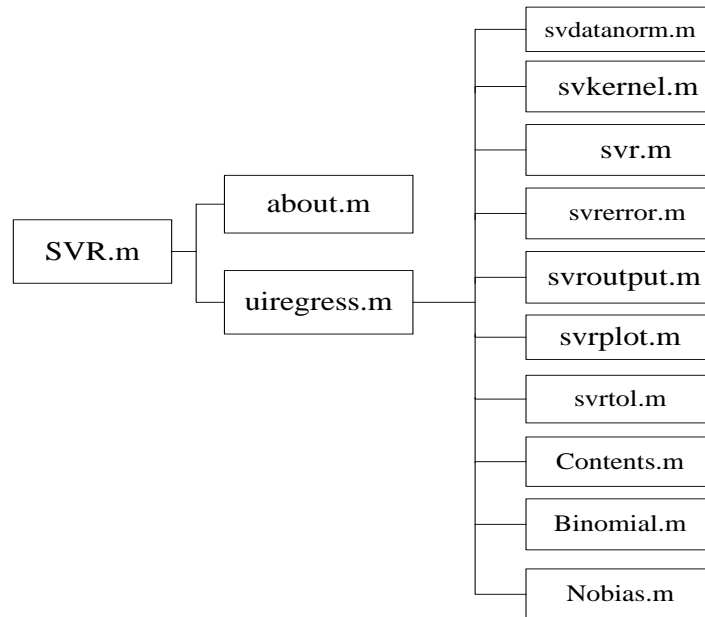


Figure 4. Procedural and Strategic

3.3. The defects of traditional artificial intelligence symbolism paradigm

For people's irrational thinking, such as perceptual cognition, it is lack of hierarchy and cannot be clearly defined by the belief code or the topological structure of the computer system. For this reason, from the point of view of the big data layered simulation paradigm, there is a great difference between the human thinking process and the machine. First of all, the human brain is divided into functional left and right hemispheres, and the two hemispheres contain different functional areas. In this way, the simulation of the different data generated in different regions can effectively simulate the overall function of the brain. Second, different levels of human consciousness also generate different levels of data, such as the highest level of human consciousness as a cultural layer, including science, art, etc., which are presented through language data and image data. The second level of human consciousness is the psychological level. This level of data mainly includes people's feelings, motivation, etc. They are presented through images and memory data. The lowest level of human consciousness is the physiological level. This level of data is presented through bioelectricity.

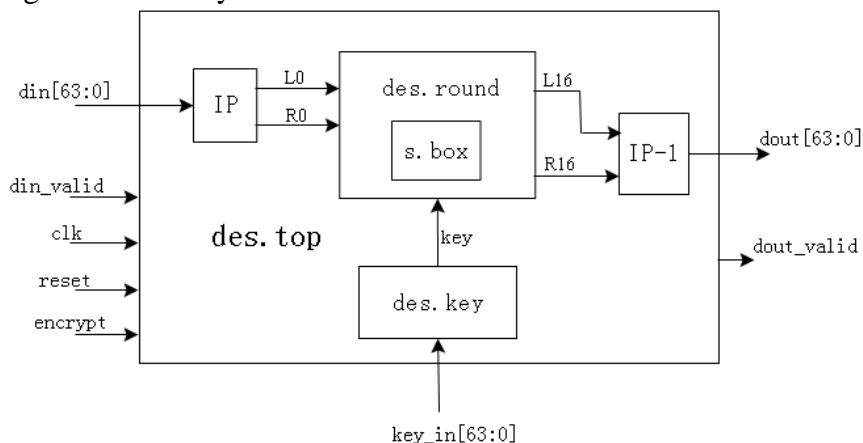


Figure 5. Procedural and Strategic

4. Empirical analysis

4.1. Creative theoretical presupposition

The special significance of artificial intelligence research is that its research object is human

intelligence, and the fundamental feature of human intelligence lies in the ability to connect people with the world through appropriate ways such as consciousness and mind. These characteristics are concentrated in the issue of intentionality. Intentional ability is not only the prerequisite for human beings to survive as the main body, but also the foundation for the development and development of all human minds. Therefore, the simulation of the intentionality problem is a key link in the process of artificial intelligence research. Only if the essential characteristics of human intentionality are approached and practiced at the technical level, can higher-level simulation of artificial intelligence be possible.

Table 1. Semester teaching plan

Doubt valid	1	0	Time
First	2120	2480	360
Second	3680	4040	360
Third	5240	5600	360

In scientific research, it is necessary to have a comprehensive and accurate definition and grasp of the composition, essence, and attributes of the problems that have been formed. However, on the issue of intentionality, its attributes have encountered controversies and problems at the beginning. Big data analysis technology provides theoretical support for the intentional attribute of artificial intelligence. This presupposition consists in defining intentionality as both internal and external. It is a special attribute between the two. Because there are a large number of ideological and cognitive experiments that can prove that the environment is indeed the essence of intentional content, or that it is an argument about the existence of psychological states and conditions of identity. In addition, another benefit of the big data layered paradigm is that it saves space for data operations and avoids the exponential explosion that was caused by the previous connectionist paradigm for the overall simulation of the brain. The hierarchical simulation paradigm of big data is used to classify and simulate different levels of presentation mechanisms in the field of human consciousness, and related procedures are designed to scientifically and effectively simulate the relationship and sequence between them.

Table 2. Teachers ask questions

Penalty factor C	Insensitivity coefficient ϵ	The number of input vectors	Number of support vectors	Regression performance
10	0.01	26	24	92.3%
10	0.005	26	25	96.2%
1	0.005	26	25	96.2%

4.2. Intentional simulation problem

The traditional artificial intelligence directly intercepts the thinking results in the practical operation of the specific simulated intentionality, but the actual thinking generation and operation process cannot be completely simulated by the existing technical means. This makes artificial intelligence missing the original generation link of human intentionality and the original creativity based on it, which leads to a series of cognitive problems. The analysis of big data addresses this argument by further emphasizing that the relationship between psychological intentionality and external things is infiltrated rather than isolated from each other, nor is it decided by each other. The content of intentional reflection depends not only on the external environment but also on the psychology itself. Here, the intentionality is self-contained and understood as a special non-entity attribute that is decentralized between people and the world. The so-called paradigm is a type of model or model recognized by the academic world. It is the theoretical foundation and practical norm in which conventional science operates, and it is a collective term for philosophical hypotheses, norms, and methods. From the research perspective, the development process of science is a process of establishment, transformation, or replacement of a paradigm. In the past, artificial intelligence benefited from the parallel development and complementarity between the

three paradigms of symbolism, connectionism, and behaviorism. However, these three paradigms have encountered bottlenecks that are difficult to overcome when simulating human intelligence. The big data layered simulation paradigm and the big data evolution simulation paradigm are two paradigms Abstracted out based on the data analysis technology. They provide an innovative approach for artificial intelligence research in the future. At the same time, on the technical level, the accuracy and effectiveness of intelligent simulation are further enhanced.

Table 3. Classroom activity process

Name	good	commonly	Not so good
Design ideas	16	2	0
	41	5	0
progress	18	6	0
	45	15	0
Incentive	13	17	0
	32.5	42.5	0
Applicability	3	11	1
	7.5	27.5	2.5

4.3. The definition of artificial intelligence

To a certain extent, the previous artificial intelligence intercepted the meaning of the thinking in the form of thinking and ignored the disadvantages of the original generation mechanism of intentionality, and also provided the possibility for the flexible transformation of the artificial intelligence syntactic machine to the semantic machine. In fact, human intentionality is a process of referring to an object through active construction. In this process, the meaning of an external object is revealed. At the same time, this process of manifestation is also a process in which meaning is identical. It is a special attribute between the two. Because there are a large number of ideological and cognitive experiments that can prove that the environment is indeed the essence of intentional content, or that it is an argument about the existence of psychological states and conditions of identity. In addition, another benefit of the big data layered paradigm is that it saves space for data operations and avoids the exponential explosion that was caused by the previous connectionist paradigm for the overall simulation of the brain. The hierarchical simulation paradigm of big data is used to classify and simulate different levels of presentation mechanisms in the field of human consciousness, and related procedures are designed to scientifically and effectively simulate the relationship and sequence between them.

5. Conclusion

In summary, big data analysis, as one of the foundations of artificial intelligence research, not only provides a new solution to the bottleneck problem of artificial intelligence from the technical but also the level of thinking. At the same time, it also gives a profound philosophical meaning for the development of the future theory of artificial intelligence. The cognitive thinking of information builds a bridge of mutual understanding between the cognitive and perceptual cognition of artificial intelligence, and provides more flexibility, randomness, and non-monotonicity in contextual problems. The big data analysis approach has made bold assumptions, that is, to restore intentionality to a data attribute, and provide theoretical support for intentional technology simulation through big data flexible, dynamic, and dialectical data-level nesting techniques. Human intentionality is a process of referring to an object through active construction. In this process, the meaning of an external thing is revealed. At the same time, this process of manifestation is also the process of meaning being unified. Here, the hierarchical nesting approach of big data analytics is to simulate the unique nature of human thinking.

References

- [1] Algorithm, A. S. “Artificial intelligence: a modern approach”. Applied Mechanics & Materials, vol. 263, no. 5, pp. 2829-2833, 2003.
- [2] Auteurs. “Artificial intelligence a modern approach”. Applied Mechanics & Materials, vol. 263, no. 5, pp. 2829-2833, 2003.
- [3] Cohen, & Paul, R. “Empirical methods for artificial intelligence”. IEEE Intelligent Systems, vol. 11, pp. 88-88, 1995.
- [4] Ligeza, A. “Artificial intelligence: a modern approach. Applied Mechanics & Materials, vol. 263, no. 5, pp. 2829-2833, 2003.
- [5] Mccarthy, J., & Hayes, P. J. “Some philosophical problems from the standpoint of artificial intelligence”. Readings in Artificial Intelligence, vol. 4, no. 4, pp. 431-450, 1981.
- [6] Negnevitsky, M. “Artificial intelligence: a guide to intelligent systems”. Information & Computing Sciences, vol. 48, no. 48, pp. 284-300, 2005.
- [7] Nilsson, N. J. “Artificial intelligence: a modern approach”. Applied Mechanics & Materials, vol. 263, no. 5, pp. 2829-2833, 2003.
- [8] Norvig, P., & Russell, S. J. “Artificial intelligence: a modern approach”. Applied Mechanics & Materials, vol. 263, no. 5, pp. 2829-2833, 2003.
- [9] Omicini, A. “Artificial intelligence: a modern approach”. Applied Mechanics & Materials, vol. 263, no. 5, pp. 2829-2833, 2003.
- [10] Russell, S. J., & Norvig, P. “Artificial intelligence: a modern approach”. Applied Mechanics & Materials, vol. 263, no. 5, pp. 2829-2833, 2003.