Original Research Article

Research on Multimodal College English Teaching in the Era of Artificial Intelligence

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Abstract: The interaction between humans and the world is multimodal, and in the course of human evolution, life forms are endowed with different perceptual channels, also known as modality, such as vision, hearing, smell, and taste. People use multiple senses and experience stimulation through the senses. Multimodality is a form of exchange between the human brain and the environment. A single modality means exchange only through a single channel. If the exchange is made through three or more perceptual channels, it is multimodal. One or more learning modes are gradually being replaced by new multimodal learning modes. Multimodal research is a new hot spot of language learning, but also the key problem of classroom English teaching reform. Based on the practical difficulties of the application from the aspects of culture, context, content (meaning + form) and expression, we develop the multimodal situational learning method with modern technology, adhere to the unified meaning and form of multimodal learning, and optimize the learning experience of using language and non-language to optimize the multimodal media level.

Keywords: Multimodal; Artificial intelligence; College English teaching

1. Introduction

As a new concept of modern learning, multi-modal learning has become a hotspot for many educational researchers. Multimodal analysis theory is the theoretical basis of various learning models. The symbol system in polymodal discourse analysis theory includes language, text, action, video, image, etc. The use of these symbol systems in the classroom greatly improves the classroom efficiency and stimulates the students' enthusiasm for learning.

Since the end of the 20th century, as the spread and use of multimodal discourse has become more popular, its research has become the focus of international attention. In modern classroom teaching, many teachers do not only rely on interpretation and demonstration to impart knowledge to their students. If only through language communication, it is difficult to make most students focus. Therefore, under normal circumstances, teachers use some non-language teaching methods, such as adding gestures according to the actual situation, reading articles through emotion and intonation, or introducing models, videos, music and other materials. These methods help to explain the concepts and make the students feel the flexibility and vitality of the teacher in the classroom. Students are attracted to the behavior of teachers, thus improving the quality of classroom teaching. Many researchers believe that teachers should communicate with students in class to achieve better teaching results(Shu Bin. 2024).

This communication is sometimes not only oral, but also behavioral communication, which helps to improve the effectiveness of classroom teaching. From this point of view, in the process of learning English, both verbal and non-verbal modes are crucial, and the two must be effectively combined to achieve effective classroom teaching results. Therefore, it is necessary to study and analyze the current situation of multimodal learning in the

English classroom, which will help teachers to understand the importance of multimodal teaching. Furthermore, this will provide important basic theories for improving and evaluating teaching training. This study seized the opportunity to deepen the reform of new teaching materials, from the perspective of multiple learning, combines modern educational theory and the corresponding English teaching theory, analyzes and studies the status and problems of multimodal learning in English teaching, and provides appropriate suggestions for different types of courses. Therefore, this paper has certain theoretical and practical significance.

2. Research Framework of the Multimodal Discourse Analysis Theory

In the 1990s, multimodal analysis gradually gained attention. Scientists in the United States and the Netherlands have shown that multimodal symbolic systems, including language, technology, images, color, music, movements, body language and facial expressions, each play roles in multidimensional interactions and cognitive frameworks. The interaction between different modalities needs to be considered to further optimize human, intelligent language with stronger interpersonal skills, such as attitudes and emotions

Communication is not limited to a single way. As a digital product, all of the models can be implemented through a single medium. The specific presented content is the most basic carrier, which integrates different modalities and expresses the meaning in a dynamic way. As Kress & amp; van Leeuwen notes, media is the material resource for making symbolic products and activities, including the tools and materials used(Liu Liebin. 2024).They are usually produced specifically for this purpose, not only in culture but also in nature. Ultimately, as the increasing importance of media in society grows, more abstract regulatory modes will develop.

Multimodal nature is a mode of different sensory perception and response, such as vision and hearing. In daily life, multimodal applications can be very widespread. People use multiple senses to communicate and interact with other objects to gain a deeper understanding. At the same time, people perceive the experience from the outside world through vision, smell and hearing; the human body can perceive its own internal state.

3. Evaluation Criteria and Practical Application Dilemma of Multi Modal Discourse

Teaching is a complex human activity. Under the background of the continuous promotion of domestic teaching reform, the multi-modal teaching theory has gradually attracted the attention of some external language teaching experts, and conducted the basic research and analysis of the teaching theory. Combined with the experience of multimodal teaching and the existing research results, we can understand that multimodal teaching refers to the teaching method of combining vision, hearing, smell, touch, taste and other senses. Although language occupies the most lasting and dominant position in it, the role of other modes in classroom teaching, such as gestures and body movements, which may contribute to language teaching; music and animation can be complementary to the teaching content. Therefore, in the study of multimodal teaching, attention should also be paid to the various undeniable roles of non-verbal modality.

Through interviews with 102 school teachers, it was found that multimodal and learning refers to the teaching methods and processes selected and used by teachers to achieve their teaching objectives. AI is not just a trained machine used to replace humans to perform specific tasks. People can gain knowledge from different perceptual interfaces by using different external communication means, such as ears, eyes, hands, language, and nose, as well as other external tools, means, and environments.

3.1. Evaluation Criteria of Multimodal Discourse

Modular quantification standard is an accepted standard in modern language circles, which refers to the

use of two or more discourse modes at the same time. Often, these modalities include vision, hearing, touch, smell, and taste. Monmodal discourse is discourse that involves only one modality, such as simply by listening to the radio or reading through vision. Bimodal discourse utterance refers to the use of two simultaneous discourse modalities, such as using the PPT for visual and auditory learning. Multimode discourse involves the simultaneous use of two or more discourse modalities, such as television and telephone systems, which can receive both sound, text, data, and images(Wu Xianwen. 2024).

3.2. Analysis of Multimodal Practical Application Environment in College English Classroom

In college English courses, the learning and teaching of students solely on language symbols can no longer meet the cognitive needs of students. The multiple modal structure of discourse analysis, including culture, context, content (i. e., meaning and form) and expression, has some challenges in its practical application. The communication pattern has shifted from a traditional single language to images or other modalities. However, due to the insufficient application of multi-modal learning in cross-cultural practice, it has not been fully popularized in college English teaching. The single or dominant mode limits the active degree of classroom teaching, resulting in teachers facing teaching difficulties and students feel boring. The current teaching puts too much emphasis on grammar education, and ignores the implicit role of "curriculum thought and grammar" in English education. Since most students have a limited understanding of western culture, they often have difficulty to fully understand the classroom content. Therefore, integrating ideology and grammar education into the English curriculum is of great significance to cultivate students' moral quality, especially to improve their cultural confidence. On a situational level, creativity is ignored and real opportunities for communication are lacking. Communication is limited by contextual factors, and the five skills of college English are also influenced by these factors, including text size, tone, and style. In the era of artificial intelligence, listening, vocabulary, reading, writing and translation in English teaching can realize real context modeling. The application of multimodal technology can reorganize the time, space, audience, and resources of learning. The content level includes the meaning level and the form level, as well as the definition of the discourse meaning, the choice of the form system and the coordination of relations. The content level is divided into two parts: "discussing the meaning" and "form and relationship". The meaning of discourse can be divided into conceptual planning, interpersonal planning and verbal planning, which are modulated by context."Form and relationship" includes the forms of language, vision, hearing and sensory organs, as well as complementarity and nonparts.verbal and non-verbal communication are important means of communication. With the development of network technology and artificial intelligence, the "partner language" complements and strengthens the semantic transmission by means of size, intonation, tone, stress, frequency, sound, font size, shape, color and spatial layout. Some teachers rely too much on multimedia courses and spend more time preparing classes after class. In class, they use PowerPoint presentations or only play videos, instead of writing on the blackboard. This leads to a lack of interaction and communication between teachers and students, but also to inadequate utilization of educational resources. Students only master the knowledge and skills, but the lack of positive thinking, unable to achieve the learning goals. In addition, some teachers overuse multimedia courses, and the interaction and switching between resources are too frequent. Some teachers even use mobile phones to work at the same time in class. This surface form will distract students' attention, leading to the lack of depth of learning content and unable to achieve the desired effect.

4. New development mode of multi-modal discourse teaching in the era of artificial intelligence

4.1. Be familiar with Multi-Modal Integrated Teaching Platform Tools and Strengthen Cross-Cultural Learning

Teachers need to skillfully use multi-functional intelligent learning platforms and advanced learning tools. In the classroom, software such as Rain Classroom, Mi cro Teaching Assistant and Learning Communication are used to achieve multimodal teaching and real-time tracking feedback to help teachers quickly understand the students' knowledge mastery. These learning platforms provide special training course space, so it is more convenient to use. For example, teachers can use carefully prepared PPT to explain knowledge points after class, rather than relying on traditional blackboard teaching, which can reduce the use of MOD and let students understand the knowledge points faster. At the same time, teachers use more advanced intelligent classes and 3D software models to explain and demonstrate the relevant knowledge, so that the knowledge point is more intuitive and clear, and easy for students to understand.

Teachers need to develop students' cross-cultural communication skills. Specific components of intercultural communication skills include knowledge, competence, attitudes, and literacy. In cross-cultural English learning, the goals of knowledge, ability and emotion aspects can be achieved through multi-modal teaching. For example, combine the use of PPT, language teaching, body movement, facial expressions, watching English video songs, discussing and answering questions, classroom interaction, MOOC micro-class, inverted classroom and other teaching methods. These methods can use different sounds, texts, texts, language, colors, images, movements and expressions to guide students to learn western culture from a critical perspective and cultivate their confidence in national culture.

4.2. With the Help of Modern Technology, Improve Students' Participation in Learning

Context is the environment for the existence and development of the language, which makes it difficult for students to judge the suitability of the language form. College English learning can rely on Chinese university MOOC platform, wechat public, Synfei E, mobile virtual laboratory, national virtual simulation experiment learning and communication platform and other online learning resources. Through network technology, computer technology, virtual modeling technology, etc., teachers can share educational resources, interact with students, and eliminate external interference in a certain period of time(He Xiaolan. 2024). Comprehensively and systematically develop students 'reading and writing ability, and build an innovative learning mode combining interactive learning mode and situational learning mode, so as to stimulate students' interest and improve students' participation in learning.

4.3. At the Content Level, Adhere to The Unity of Multi-Modal Teaching Significance and Form

In English teaching, adhering to the significance and form of great value for learning ideology and cultural education. However, there are many problems in ideological and political education in college English courses, including vague concepts, insufficient emphasis and rigid teaching methods. In the process of constructing the multimodal learning form, we should pay attention to guiding students' practice and application, and cultivate their advanced consciousness and macro perspective. For example, when it comes to foreign festivals, students can deepen their understanding by experiencing foreign festivals, scenes, and interacting by doing live broadcasts

or videos in virtual classrooms. In addition, English teaching often involves the introduction of festival food. At this time, teachers can explain the cultural connotation of the festival through various ways, such as vision and taste. Through these activities, expand the teaching content and help students to form English thinking.

4.4. Artificial Intelligence Enables Teaching Evaluation

To better promote students to grow up, English teachers should improve the importance of students 'English application ability, ability for standard system, traditional English teaching evaluation, to examine students' English knowledge, and to examine students' oral English level, listening level, performance, at ordinary times, and highlight the expanding knowledge and skills training, build science teaching evaluation system, to realize the goal of English teaching. First of all, build an English test bank. Colleges and universities can introduce intelligent test software such as digital language laboratory, U campus test platform, English writing teaching and evaluation system, and university foreign language test and training system. The test question bank should cover the textbook content and the non-textbook content. Among them, the content of non-textbooks can be college English real questions and simulation questions, professional English representative vocabulary, etc. Colleges and universities can also establish a characteristic test bank according to students' level and professional characteristics. In terms of questions, should not only keep reading, radio, cloze, writing, traditional topic, and according to the four 6 type change adjustment type, such as, increase the long, words, 46 often test of news, and increase the passage reading, complete situation dialogue, oral oral test, effective exercise students listening and English language expression ability. In terms of writing correction, we should make full use of the intelligent test software correction function, clearly point out the students' mistakes in vocabulary, grammar and other aspects, and provide standard language and reference models to strengthen the feedback timeliness and comprehensive. Secondly, a full range of classroom data collection. Universities can install cameras in the classroom to collect classroom data in real time. In the evaluation of "teaching", integrated analysis of teachers and students facial expression, language expression, behavior data, clear classroom interaction between teachers and students, student attention, force concentration and knowledge degree, to quantify the teachers' teaching behavior of students attraction, clear classroom teaching for students, provide reference for teachers to optimize classroom teaching. In the evaluation of "learning", can with the aid of big data technology of data mining, analysis and processing ability, integration, students in the classroom teaching learning behavior data, and collect the students in, wisdom learning platform, understand students online and offline real learning situation, provide comprehensive and objective evaluation students data reference. This evaluation method not only overcomes the disadvantages of the final evaluation, but also the teachers can complete the objective evaluation with the help of big data technology anytime and anywhere, so as to improve the quality and efficiency of teaching evaluation.

4.5. Effective Use of Language and Non-Language, to Optimize Multi Modal Media

In the teaching process, non-language refers to the meaningful action integration of the parts related to the teacher's body, in which the "related part of the body" mainly refers to the face, body potential, limbs, etc.; "meaningful" refers to the teaching content or made to achieve certain teaching purposes. Therefore, the non-language media in the teaching process of teachers refers to the creative and active activities that teachers flexibly use the non-language ways to conduct content expression, teaching and educating people.

Starting from teachers' teaching practice experience, non-language languages with high teaching practice and scientific research value mainly include facial language, body posture language, eyebrow language, gesture

language and so on. Getting students to communicate and interact on social media will change teachers' teaching ideas and methods to a certain extent, and realize the transformation of "student-centered and teacher-led" teaching.

5. Conclusion

In classroom teaching, teachers should pay attention to stimulating students' learning motivation, so that they can actively participate in classroom activities, from which meaningful to obtain learning and knowledge. Constructivist learning theory has become the core of modern learning theory. This theory emphasizes students 'active learning, opposes teachers' simple knowledge transmission, encourages students to continuously create new knowledge, and constantly enrich their own knowledge reserve. In this process, the students' subjective initiative and the ability to actively construct a knowledge system are emphasized to achieve meaningful learning. Multi-modal learning requires students 'active participation in English teaching, and it can also improve students' learning initiative and motivation.

The comprehensive application of artificial intelligence technology can also optimize the English teaching model. Compared with the traditional English teaching mode, the teaching mode integrating artificial intelligence technology is more abundant and more interesting, which can better attract students 'attention, so as to stimulate their interest in English learning, which is of great significance to stimulate students' interest in English learning and cultivate students' initiative in English learning(Dawn. 2024).

Teachers can use a series of methods to stimulate students' interest in learning and participation. For example, stimulate the student's optic nerve by displaying blurred pictures of the words, or enter the spelling, meaning, and vocabulary of the words. Moreover, when interpreting terminology, objects are used to help students understand, while when interpreting verbs or verb phrases, they combine verbal modality with modal movements to stimulate the classroom atmosphere and students' enthusiasm for learning. For grammatical interpretation, teachers should choose appropriate modes according to the teaching type, content and the actual situation of students, and rationally use PPT and blackboard to achieve the best teaching effect.

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