

Research on Multimodal Collaboration and Meaning Construction of Discourse in English Reading Class - A Case Study from High School English Reading Demonstration Class

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Abstract:

This study aims to analyse the modalities used to achieve meaning construction in high school English reading class and to explore the synergy of multimodal discourse. Taking a high school English reading demonstration class as a case study, we analyze the action, auditory and visual modalities used by teachers in teaching. It is found that these modalities are distributed throughout the whole process of reading teaching, and they work together with each other, which jointly promotes students' understanding of reading materials and the construction of communicative significance. The action modality enhances the students' sense of participation through the teacher's non-verbal behavior; the auditory modality promotes the interaction between teachers and students through questions and discussions, and the visual modality strengthens the transmission and understanding of information through PowerPoint and other auxiliary tools. The results reveal the potential of multimodal teaching in improving the effect of English reading class.

Keywords:

High School English, Reading Class, Multimodal Discourse, Synergy

1. Introduction

As an important part of basic education, the quality of English teaching in high school is directly related to students' key competencies in English and development. In China's high school English teaching, reading has always been the focus of teachers' and one of the focal points of scholars' research. Reading is the basis for improving students' integrated language skills, and reading ability determines, to some extent, the depth and breadth of students' access to key information. [6] Moreover, reading not only helps students acquire language knowledge and improve language skills, but also promotes the development of students' thinking skills, cultural awareness and intercultural competency. At present, in the field of education,

research on teaching methods is advancing, especially the application of multimodal discourse in teaching.

With the rise of multimodal theory, more and more scholars have begun to pay attention to the non-verbal elements of classroom discourse, such as body language, facial expressions, and the pitch and rhythm of the voice. These non-verbal elements work in coordination with language to build the complexity and richness of classroom discourse. The theory provides teachers with new perspectives for a more comprehensive understanding and optimization of teaching practices. Against this background, this paper selected a high school English reading demonstration class as a case study to explore how different modalities work together in a reading class to achieve teaching goals. Through an in-depth analysis of this demonstration class, this paper aims to reveal the practical value and theoretical significance of multimodal synergy in English reading teaching.

2. Theoretical Foundation

In the development of multimodal discourse analysis, O' Toole used Halliday's Systemic Functional Linguistics to analyse multi-semiotic systems in visual arts. [17] Kress and van Leeuwen constructed a framework for the syntactic analysis of visual grammar based on the same theory, which provided a solid theoretical foundation for multimodal discourse. [16] Li Zhanzi pioneered multimodal discourse studies in China[2]. Hu Zhuanglin described the multimodal phenomenon in different semiotics, opening a new chapter for multimodal discourse. [1] Zhu Yongsheng explored the content, method and significance of multimodal discourse analysis, which pushed forward the development of multimodal discourse analysis in China, [14] and these scholars promoted the research in the field from different perspectives. Despite the conceptual confusion, scholars such as Wei Qinhong[5] and Zhang Delu[7] made the research clearer by clarifying the meaning of terms and establishing an analytical framework. Zhang Delu further discussed the properties of semiotic system and establishes a new systemic-functional integrative framework for multimodal discourse analysis. [12]

In view of the limitations of monolingual modality in teaching, the New London Group proposed the application of multimodality in language teaching. [3] With the deepening of the study of multimodal discourse, scholars in China have begun to pay attention to the importance of other modalities in English teaching. Zhu Yongsheng[15] and Zhang Delu[8] emphasized the importance of multi-sensory coordination and the integration of multimodal semiotic systems respectively, which marked an important development in multimodal foreign language teaching in China. Zhang Delu studied modal invocations and its functions in the foreign language class and explored instructional design and modal invocation systems [9] Zhang Delu and Ding Zhaofen explored the multimodal selection framework, [10] and Zhang Delu and Wang Zheng introduced the multimodal interaction analysis theory and method.[11] Zhao Xuemei investigated how multimodal interaction under the embodied cognition perspective promotes the development of higher-order thinking in high school English reading class. [13] In addition, Quan Zhicheng found that multimodal teaching can reduce students' reading anxiety, enliven the classroom atmosphere, enrich teaching resources, and enhance students' multi-sensory memory and communication skills. [4] All of the above multimodal discourse analysis theory and its applications provided a solid theoretical foundation for multimodal teaching behaviors in today's digital media era.

In multimodal teaching, teachers can make use of a variety of symbolic resources such as images, sounds, videos and movements, which are combined with language to form a multidimensional teaching environment. This teaching method can better adapt to the needs of different learners, especially for visual and auditory learners, multimodal teaching can provide a more intuitive and vivid learning experience. Through multimodal teaching, students not only learn language knowledge, but also develop intercultural communication skills, critical thinking skills and creative thinking skills. Therefore, multimodal teaching plays an increasingly important role in foreign language teaching today. This paper takes a video of a quality reading class in the 17th National High School English Teachers' Basic Teaching Skills Competition as the corpus of analysis, and explores the different modal types of multimodal classroom discourse and the synergistic relationship between these modalities in a high school English reading demonstration class according to the different stages of reading.

3. Research Design

3.1. Research Questions

Taking multimodal discourse analysis integrative theory constructed by Zhang Delu as the theoretical framework and based on visual grammar, this study selected a video of a reading demonstration class in the 17th National High School English Teachers' Basic Teaching Skills Competition as the object of study. According to the different stages in reading class, we explored the distribution characteristics of different modalities in multimodal classroom discourse at different stages, and how these modalities collaborated with each other to reach an effective construction of the English classroom. The specific research questions are as follows:

- (1) What modalities did the teacher use in class?
- (2) What are the distribution characteristics of these modalities in reading?
- (3) How did the various modalities collaborate with each other to achieve communicative meaning?

3.2. Research Corpus

The corpus for this study was collected from a video recording of a high school English reading demonstration class in the 17th National High School English Teachers' Basic Teaching Skills Competition, which lasted about 40 minutes. The teacher was a female of about 30 years old. The content was Unit 1 *Teenage Life* from the People's Education Press High School English Compulsory Coursebook 1. The theme of the competition was "Effective Ways and Methods for High-Quality Classroom Instruction in Basic Foreign Language Education under New Circumstances", which was organized by the Foreign Language Education Professional Committee of the Chinese Society of Education(FLEPC-CSE). The competing teacher was selected from all over the country, and according to her profile, she have rich teaching experience and excellent quality. Therefore, it is representative for this study to select her class case as the research object to explore the multimodal synergy in classroom teaching.

3.3. Research Method

The involved discourse was the multimodal discourse of the teacher, which mainly consisted of the verbal and non-verbal modalities. The research methods used in this study were observation and case study. The study first combined the theory of multimodal discourse analysis to record and analyse the teacher's oral language, body language, facial expressions, and teaching aids in the video, and then finally focused on an in-depth discussion of specific teaching clips to reveal the application and effect of multimodal discourse in actual teaching. Through the combination of these two approaches, this study aims to provide a comprehensive understanding of how the teacher can collaborate different modalities to achieve teaching goals and facilitate student learning.

4. Analysis and Findings

4.1. Description of the Corpus

The content of the lesson plan was centred on the theme of “The Freshman Challenge”, through the point of view of the main character Adam, who faced challenges and adapts to the process after moving from junior high school to high school. The text is rich in content, covering a wide range of topics including course choices, extracurricular activities, academic responsibilities, and outlook on the future, and providing students with a close-to-life, easy-to-empathize reading material. This is a new reading lesson, lesson 2 of Unit 1. The teacher would guide students to learn new language knowledge through the reading material while developing reading comprehension and critical thinking skills. Through reading activities, students were not only exposed to new vocabulary and grammatical structures, but were also able to deepen their understanding and application of the material through discussion and interactive activities. The lesson emphasizes students' active participation and the process of meaning construction, which is closely related to the theme of this study.

4.2. Analysis of the Genre Structure of Classroom Discourse

By repeatedly watching and analyzing the teaching video, as well as referring to the genre structure mentioned by Zhang Delu in his research on the design of foreign language teaching and multimodal synergy, this 40-minute class can be divided into seven teaching procedures.

(1) Greeting, in which the teacher and students greet each other to indicate the official start of the teaching activity.

(2) Lead-in, in which the teacher introduces the topic by asking “How did you feel in the first week at senior high school?”

(3) Pre-reading, the teacher shows the title “The Freshman Challenge” and related pictures through PowerPoint to stimulate students' background knowledge and predict the content of the text by using visual modality, so as to pave the way for in-depth reading.

(4) In while-reading, the teacher guides students to identify the main idea of each paragraph through skimming and finding the main idea. At this stage, text modality becomes the main focus and students need to extract information through reading. Meanwhile, the questions and prompts in the PowerPoint serve as aids to the visual modality, guiding students to deeper understanding of the text.

(5) In post-reading, the teacher sublimates the main idea of the text through discussion, group activities and other forms.

(6) Homework assignment, the teacher assigns homework through PowerPoint and guides students to self-assessment. This session not only consolidates classroom learning, but also encourages students to continue to think and apply what they have learned after class.

(7) Ending part, the teacher and students say goodbye to each other.

4.3. Distribution Characteristics of Teachers' Classroom Discourse Modality

By annotating and analyzing the content of the video, this study reveals that the teacher employed a diversity of modalities in the about 40-minute class. Based on Zhang Delu's criteria for classifying modalities, this study carefully classified the modalities employed by the teacher in this class into two main categories: the verbal and non-verbal modalities. In terms of verbal modality, the teacher mainly used oral modality in the teaching process, covering pure language, rising and falling tones, etc. In terms of non-verbal modality, the teacher used movement modality and visual modality in the teaching process. The movement modality includes body language such as gestures, body gestures, expressions, and eyes. Meanwhile, the visual modality, such as pictures and words, mediated by PowerPoint, was also frequently used in the teaching process. The distribution of each modality in different parts of teaching is shown in Table 1.

Table 1. Distribution of the teacher's discourse modality.

Teaching procedures	Types of discourse modality
Greeting	Oral, movement modality
Lead-in	Oral, movement and visual modality
Pre-reading	Oral, visual modality
While-reading	Oral, movement and visual modality
Post-reading	Oral, movement and visual modality
Homework assignment	Oral, visual modality
Ending part	Oral, visual modality

4.4. Synergies between Different Modalities in Teaching Procedures

4.4.1. Greeting

The core modality function of the greeting procedure as an integral part of the teaching process is to construct interpersonal meaning. This procedure reflected the interactivity between the teacher and students, i.e., they should interact with each other with the corresponding greetings. In the corpus sample selected for this study, the teacher achieved effective interactive greetings by combining the oral modality with the movement modality. For example, before the formal class, the teacher greeted the students with "Are you ready? Boys and girls. Class begins.", which was accompanied by smiling and a leaning forward gesture to enhance the intimacy and interactivity of the greeting. This greeting not only conveyed the teacher's concern and expectation for the students, but also made the greeting more vivid and contagious through the aid of movement modality. After receiving such a greeting, students would also respond to the teacher with positive responses, thus creating a harmonious and friendly atmosphere. In addition, the use of rising tones by the teacher in this procedure made the greeting sound more enthusiastic and inspiring, and further promoting emotional communication between teacher and students. Through

such interaction, the teacher not only succeeded in attracting students' attention, but also laid a positive foundation for the next teaching activities.

4.4.2. Lead-in

In the lead-in procedure, the teacher asked: "How did you feel in the first week at senior high school?", which directly touched on students' personal experiences and stimulated their memories and reflections. The use of oral modality not only conveyed the information, but also promoted communication and sharing among students, and laying the foundation for emotional resonance for the subsequent reading activities. Teacher also used body language and gestures to attract students' attention, for example, pointing to specific student through gestures when asking questions and using open gestures to encourage students to speak, or even stepping down from the podium to establish an informal close contact with students, so as to bring them closer to each other and to create a relaxing atmosphere. The combination of the movement modality and verbal modality enhanced the interaction between students and teacher and created an atmosphere of active participation in the class. In addition, the teacher used visual elements in the PowerPoint, such as displaying relevant text to assist the verbal modality. The synergy of these three modalities constructed a multi-sensory learning environment in the lead-in procedure, which not only enhanced student engagement but also provided students with the opportunity to understand and think about issues from different perspectives. The movement modality enhanced interactivity, the verbal modality facilitates communication, and the visual modality provided intuitive cues for comprehension and memory. Through this multimodal synergy, the teacher effectively built bridges to the reading material for the students, laying a solid foundation for in-depth reading and discussion.

4.4.3. Pre-Reading

In the pre-reading activity, the teacher used the visual modality with the verbal modality in the medium of PowerPoint to introduce the theme and stimulate students' predictions. At this procedure, the visual modality was combined with the oral modality, and the teacher guided the students into reading by showing pictures and captions.

4.4.4. While-Reading

In the while-reading procedure, the teacher used oral modality to pose a question and guided students to analyse the text. For example, the teacher asked, "What courses did Adam choose?" and "Which club did Adam join?". These questions prompted students to seek answers from the text, thereby promoting the analysis and discussion of the reading materials. Oral communication also enabled students to share their understanding and viewpoints, and enhanced the interactivity of the class. When guiding students in reading, the teacher would also use gestures to indicate the direction or key points of reading, such as pointing to the reading strategies on the blackboard or the key information on the PowerPoint. These movements not only helped students focus on the key content, but also enhanced the intuitiveness of teaching in a non-verbal way and made the reading process more vivid and interactive. PowerPoint played a crucial role in this stage. By presenting the structure of the article, key vocabulary and questions, therefore the visual modality assisted students in better understanding the text. The teacher used highlighting to mark important parts in the text, enabling students to quickly locate and understand key information. The

synergy of these three modalities created a multidimensional learning experience in reading. The movement modality enhanced the intuitiveness of teaching through non-verbal communication, the oral modality promoted students' in-depth understanding and expression through questions and discussions, while the visual modality strengthened students' understanding of the text structure and content through visual aids. Through this multimodal synergy, the teacher not only enhanced students' understanding of the reading materials, but also promoted communication and meaning sharing among students, thereby achieving the construction of communicative meaning.

4.4.5. Post-Reading

In the post-reading procedure, the teacher first asked questions and guided students to discuss, for example, in the "Think & Share" section, students were asked to discuss Adam's personality traits. This kind of oral communication not only helped students express their thoughts, but also promoted peer interaction and collision of ideas, deepening their understanding of the reading materials. In the subsequent group discussion and presentation, the teacher guided students' participation through action modality. The teacher would encourage students to interact by gesturing when assigning tasks or moving among students, and these non-verbal behaviors enhanced students' participation and the atmosphere of the classroom. While the PowerPoint continued to play a role in the post-reading procedure by presenting the survey charts and questions to support the oral discussion. In the "Discuss & Present" section, the teacher used PowerPoint to prompt questions and helped students organize their mind maps and presentations. The use of the visual modality provided structure and focus for the students' oral presentation. The synergy of these three modalities created an interactive and reflective learning environment in the post-reading procedure. The movement modality enhanced student engagement through non-verbal cues from the teacher, the oral modality facilitated the exchange of ideas between students through discussion and sharing, and the visual modality provided structure and visual support for discussion through the PowerPoint. Through this multimodal synergy, the teacher not only helped students consolidate the reading content, but also promoted the development of critical thinking and communicative skills, and achieved deeper meaning construction.

4.4.6. Homework Assignment

In this procedure, the teacher used oral modality and visual modality. The teacher assigned homework through PowerPoint and guided the students to self-assessment after the session. This procedure not only consolidated learning, but also encouraged students to continue to think about and apply what they had learned after class.

4.4.7. Ending Part

This procedure indicated that the class is coming to an end, which was similar to the greeting procedure in the interpersonal meaning. In the selected corpus, the teacher said: "That's all for today. Thank you for your cooperation.", and at the same time she displayed "Thanks!" on the PowerPoint, the combination of oral modality and visual modality was achieved, which promoted the interaction and communication between teacher and students.

It was found that the teacher mainly used oral modality, movement modality and visual modality in the teaching. In the class, the teacher used oral modality to ask

questions, explain and lead discussions with students, oral modality promoted interaction between teacher and students. Movement modality enhanced the intimacy and intuition of teaching, and visual modality such as displaying pictures, words and questions in PowerPoint assisted in the transmission of information and understanding. The distribution of these modalities varied due to the teacher's different focuses in each teaching procedures. In the greeting and end part, the teacher mainly used oral and visual modality to create a relax atmosphere. In the lead-in and pre-reading, oral and visual modality worked in synergy to stimulate students' interest in reading and background knowledge. In the while-reading, the teacher used oral modality to guide students in analyzing the text, movement modality to support teaching and learning, and visual modality to present key information through PowerPoint to help students' comprehension. In the post-reading, the oral and visual modality were combined to promote in-depth thinking and critical thinking through discussion and presentation of diagrams. Last, in the homework assignment, the oral and visual modality were mainly used to consolidate learning. These features suggests that the teacher flexibly used a variety of modalities according to different teaching objectives and procedures to achieve the best teaching results.

5. Conclusions

This study reveals the important role of multimodal synergy in teaching by analyzing multimodal discourse in the high school English reading demonstration class. In the process of teaching, the teacher guided students' thinking and discussion through oral modality such as questioning and explaining, and at the same time enhanced the intimacy and intuition of teaching with the help of body language. The synergy of oral modality and movement modality not only promotes students' understanding of the teaching content, but also enhances the interactivity and active atmosphere of the class. This synergy provides teacher with richer teaching tools, and makes the teaching process more vivid and effective. The teacher used PowerPoint to display visual modality such as pictures, words and questions to support oral explanations and help students better understand and remember the teaching content. The synergy between oral modality and visual modality plays an important role in information transfer and comprehension. In the post-reading, the teacher guided students' participation by asking questions and guiding them through discussions, incorporating body language and using PowerPoint to display survey charts and questions to help students organize their mind maps and presentations. The integrated synergy of these three multimodal modalities created an interactive and reflective learning environment, which not only helped students consolidate the reading content, but also promoted the development of critical thinking and communicative competence, and realized the construction of meaning.

By analyzing the use of multimodality in high school English reading demonstration class, this study reveals how teacher can promote students' language comprehension and communicative competence through the synergy of oral modality, movement modality and visual modality. Multimodal synergy has important practical value in English reading teaching. Teachers should be fully aware of the synergy between different modalities, flexibly utilize multiple modal resources and design diverse teaching activities to promote students' overall language skills development and communicative competence. This multimodal synergistic teaching mode can not only stimulate students' interest and participation in learning, but also provide teachers with richer teaching strategies to enhance teaching effectiveness.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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