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Multimodal Discourse Analysis Theory Applied to Senior High School English Reading Instruction

Li Chuangang^{1*2}, Nalini Arumugam¹, Du Gang³, Zhang Xinghui¹
* Corresponding Author

¹ Faculty of Education, Language, Psychology and Music, SEGi University, Petaling Jaya, Malaysia
² Department of General Education, Changzhou Vocational Institute of Mechatronic Technology, China
³ School of Marxism, Suzhou Institute of Trade & Commerce, China

licg_197312@163.com, naliniarumugam@segi.edu.my, 744839807@qq.com, 421847245@qq.com,
Tel: 011-25852968

Abstract

Reading English is required for high school students to gain language proficiency, enhance their cultural awareness, and broaden their global perspective. This study incorporates the theory of multimodal discourse analysis into English reading teaching for high school students based on the principles of social semiotics and systemic functional linguistics. The results indicate that utilizing multimodal discourse analysis theory in high school English reading enhances students' focus in class and boosts their English reading scores. Additionally, it facilitates their comprehension of text information and establishes a solid basis for developing multiple literacies.

Keywords: Multimodal discourse analysis theory; Senior high school; English reading teaching

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1.0 Introduction

1.1 The advancements in modern science and technology have led to the globalization of cultures and the expansion of diversity. Students need to acquire various knowledge, and traditional classroom teaching alone is insufficient to meet education and training demands. As an English teacher in the new era, it is crucial to guide students in finding the required information resources, developing their ability to identify various multimedia platforms, and broadening their access to information. Moreover, distance teaching on network platforms and multi-modal learning software on mobile devices can compensate for the limitations of traditional teaching by utilizing diverse presentation and interaction methods. Therefore, conducting in-depth research on the theory of multi-modal discourse analysis is essential to enhance foreign language teaching reform and development. Multimodality is a theory of social semiotics that focuses on modern communication. It involves using various semiotic modes or resources to convey a message (Adel & Bentouati, 2018). Multimodality is present in all aspects of human life. When communicating, gestures, movements, and facial expressions can significantly impact how information is transmitted and received between individuals. Reading in English is crucial for high school English language learners to improve their literacy skills. English teachers must possess strong research skills and a solid theoretical foundation to effectively incorporate multimodal teaching with reading instruction. Applying the theory of multimodal discourse analysis in high school English reading classrooms is particularly important in engaging students, improving their learning efficiency, and promoting their overall development.

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1.2 This research aims to analyze English reading instruction in high school classrooms, the research objectives are as follows:

RO1. To investigate how high school English reading multimodal teaching can improve students' classroom attention and learning efficiency.

RO2. To explore the difference between the multimodal English reading teaching model and the traditional one in improving the reading skills of senior high school students.

RO3. To identify the multimodal teaching of English reading in senior high school can improve students' multimodal reading ability.

And providing answers to the following research questions:

RQ1. To what extent can multimodal teaching in English reading in senior high school improve students' classroom attention and learning efficiency?

RQ2. How does the multi-modal English reading teaching mode differ from the conventional mode in improving high school students' reading skills compared to traditional approaches?

RQ3. What about multimodal teaching in high school English reading classrooms to enhance students' multiple literacy skills?

The methods used to gather data include questionnaires, tests, classroom observations, and interviews.

2.0 Literature Review

2.1 According to Halliday (1978), there is a connection between symbolic systems and modes in social semiotics. He suggested that every extended plan contains methods with distinct characteristics. Kress and Van Leeuwen (2020) argue that human communication usually involves multiple modes rather than just one. This implies that multimodal discourse is a linguistic phenomenon that utilizes various sensory organs, communication methods, and symbolic resources for effective communication. For example, illustrations in high school English textbooks can effectively help students increase their understanding of text situations. In daily contact, when facing the younger generation, we should speak in a relaxed and lively tone to show concern and narrow the distance, while when facing the elders, we should talk politely and calmly to show respect and highlight etiquette. To better express ideas in WeChat chat, the text will be sent simultaneously to assist the expression and make the communication more vivid.

2.2 Kress and Van Leeuwen (2020) claimed that mode is a kind of meaning potential, which is endowed with cultural elements and emotional value due to the long-term infiltration of material media in the social environment and is a cultural resource of a social nature used to express ideas and exchange meanings. LeVine and Scollon (2004) point out some differences between mode and media: mode is a symbolic system with internal logical relations, which can form contrast or opposition; Media is a material means to record the existence of signs. For example, in the process of speech, the body movements to better assist the expression of meaning, in such a social scene that can be seen everywhere every day, the sound mode displayed by the speaker belongs to the main way, while the body movements belong to the primary method of auxiliary sound for complete expression, which occupies a secondary position and belongs to the sub-mode. At the same time, the sounds made by teachers when teaching, the printed pages used by factories to present text information, the voice and audio used by communication parties on mobile communication media, handwritten letters, etc., belong to a material means of conveying information - media.

However, initially, people needed to pay more attention to the multimodality of discourse and only used it as an auxiliary system for scientific research. Only in the development of society could a single form of modality meet the increasingly diversified communication needs of human beings, and it could maintain and expand the channels for human beings to obtain information resources. People gradually realized the importance of multimodal discourse.

Barthes (1977) paid attention to the study of multimodal discourse analysis for the first time. In his published works, he discussed the degree of superposition among images, music, and texts and their combinational relations in different situations. However, at that time, it did not attract enough attention in the academic ocean of the linguistics circle; on the one hand, although the work focused on multimodal discourse analysis, it did not have scientific, systematic theoretical support; on the other hand, it was because the depth of the research was not enough. In the 1990s, multimodal discourse analysis theory ushered in the rapid development and new transformation of real significance, Kress (2009) pioneered the systematic functional linguistics theory as one of the most suitable supporting theories for studying multimodal discourse analysis theory. With the in-depth development of multimodal discourse analysis theory, more and more scholars are trying to construct the internal framework of multimodal discourse analysis theory from different dimensions and explore the synergy between the idea and the foreign language environment.

Later scholars' research ideas on multimodal discourse analysis theory can be divided into two categories:

(1) Internal construction: the construction of the theoretical framework of multimodal discourse analysis

Machin and Van Leeuwen (2007) investigated the development of multimodal grammar construction, while Scollon and Scollon (2003) delved into the correlation between symbolic resources and social life. Norris (2004) summarized a theoretical framework to analyze multimodal communication interactions using a multitude of real-life communication examples. Overall, research on the internal construction direction of multimodal discourse analysis theory primarily focuses on addressing issues that require clarification, such as the problems that arise in the construction process of multimodal grammar, the ways to clearly distinguish modes of different dimensions and the interpretation methods of different dimensional modes.

(2) External connection: the guiding role of multimodal discourse analysis theory in foreign language teaching

According to Dressman (2019), the complementarity of symbolic resources is crucial in analyzing the multi-modal cooperative phenomenon in the second language classroom. They delved into the cooperative relationship between each mode and how they can

complement each other. Kress et al. (2001) also tackled the issue of multimodal teaching and learning, discussing the challenges and possible solutions for teachers and students. Meanwhile, (Baldry & Thibault, 2008) studied the relationship between modalities and media and explored the creation of a multimodal corpus and the implementation of technical support. While these scholars emphasized the connection and application of multimodal discourse analysis theory with the outside world, such as in language classrooms to improve students' learning efficiency, they paid limited attention to constructing the theory's internal framework.

3.0 The Importance of Research

Through the conceptual interpretation of multimodal discourse analysis theory and its integration with high school English reading teaching, this study will give necessary reading teaching examples, and combine testing methods, questionnaire survey methods, classroom observation methods, interview methods and specific experimental data, while paying attention to the changes in students' performance. They also pay as much attention to the changes in students' classroom performance and the realization of self-efficacy, and place the explicit and implicit factors of high school students' English reading in the same important position.

4.0 Methodology

Two Grade One classes from a senior high school in Changzhou, Jiangsu Province, were selected for a one-semester teaching experiment. Each class consisted of 50 students, and one of the compulsory high school English textbooks was chosen as the reading material for both classes. Before the experiment, a pre-test was conducted in September using the reading section of the monthly test paper to assess if there were any differences in reading levels between the two classes. In December, a post-test was conducted using the reading section of the monthly test paper to determine if the student's academic performance improved after a multi-modal foreign language teaching semester. The first class was an experimental class that used the multi-modal external teaching mode and was guided by the theory of multi-modal discourse analysis. The second class was the comparison class and used the traditional teaching mode. To minimize irrelevant variables, the researcher taught both English reading courses simultaneously and used consistent teaching materials and progress for both classes.

4.1 This paper discusses the research methods used in this research: questionnaire, test, classroom observation, and interview.

4.1.1. Questionnaire

For the scholarly investigation, two parallel Grade One classes were chosen as the subjects at the start of the experiment. To assess the English reading proficiency of the students before and after the investigation, two Likert scale questionnaires were created for the pre-test and post-test, respectively. The questionnaires were designed to gauge the degree of compliance by scoring the responses.

4.1.2. Test

The English reading test is split into two sessions, the first in September 2022. The pre-reading test questions are taken from the monthly exam papers of the first grade of high school in September. The chosen reading questions are objective, and the types of questions are selected from the two optional reading papers in the monthly exam papers and one seven-choice five-fill assignment. At the end of the teaching experiment, in December 2022, the monthly test papers of the first grade of the month will be selected, and the types, difficulties, and quantities of the chosen questions will be consistent with those of the pre-reading test. The purpose of the post-reading test is to determine whether the multi-modal foreign language teaching model for three months will have a specific impact on the English reading learning state of senior high school students, whether positive or negative, and to what extent. To ensure fairness, both classes of students should take the test in a quiet and secure classroom. Invigilators will monitor the exam. Electronic devices and any materials related to the test content, such as paper books, are prohibited during the test. The test should be completed within 40 minutes. Afterward, data analysis will be conducted using Excel and SPSS 26.0 software to draw appropriate conclusions.

4.1.3. Classroom observation

During an educational experiment, two different English reading teaching methods were observed and recorded through video recordings and written notes. The class atmosphere of the two classes implementing these methods was also kept. The classroom observation focused on two main areas: classroom links and patterns. Five parts of classroom links were monitored and assessed: introduction, presentation, practice, review and summary, and assignment. The classroom model was analyzed from two different perspectives: students and teachers. The study observed and compared students' reading attitudes, interests, use of reading skills, learning strategies, changes in reading classroom performance of high and low-group students, academic achievement, reading level, and self-efficacy. The study also examined whether teachers' teaching styles changed under different teaching modes and whether this impacted students' learning and acceptance of English reading.

4.1.4. Interview

To thoroughly understand how the multimodal foreign language teaching mode affects students' learning status and acceptance, the author conducted in-depth communication with eight randomly selected students from Class 1, Grade 1 of the experimental class, who belonged to different score groups. This approach was taken due to the difficulty in quantifying certain parts of the previous questionnaire

survey and observing teaching phenomena comprehensively during classroom observation. The goal was to assess the effectiveness of this teaching mode in enhancing students' reading performance and learning level.

5.0 Analysis and Discussion

Before data analysis, a standard distribution test was performed on the experimental and control classes' pre-test and post-test scores. This was done to ensure that the student numbers and scores met the prerequisites for various types of analysis such as independent sample t-test, variance test, Pearson correlation coefficient analysis, linear regression analysis, paired t-test, and multiple post-comparison analysis. Upon discovering that the serial number and reading test scores of students in both classes met the normal distribution, we utilized SPSS (26.0) software and Excel tables as data analysis tools to compare the reading test scores of both classes across five dimensions.

To observe whether there is a difference in English reading level between Class (1) and Class (2) in Senior One, the experiment conducted a reading pretest for the two classes at the beginning of the study. As can be seen from Figure 5-1, there is little difference in English reading level between the two classes before the experiment.

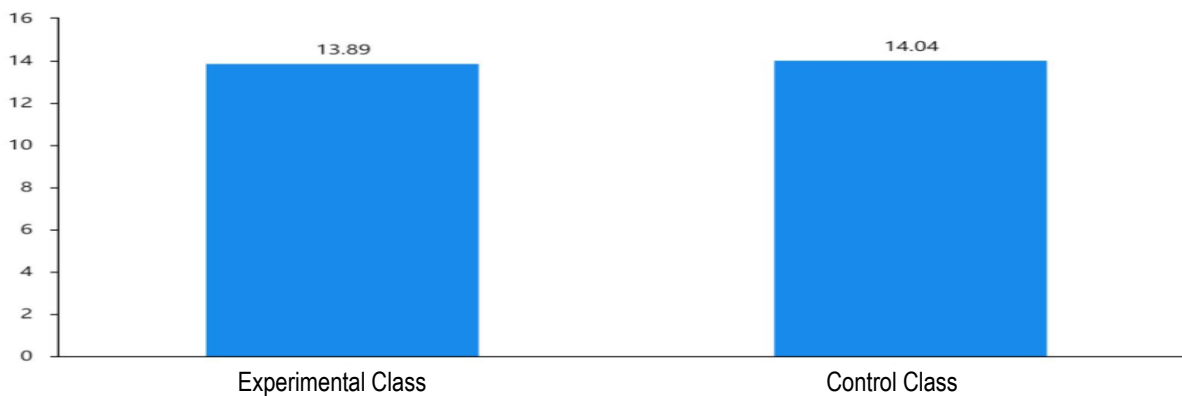


Fig. 5-1 Bar chart of t-test comparison between class and pretest scores

After the experiment, a reading post-test was conducted to determine whether the multimodal foreign language analysis guided English reading classroom in senior high school can promote students' English reading achievement. As can be seen from Figure 5-2, it is true that the bar chart height of the test class is obviously higher than that of the control class.

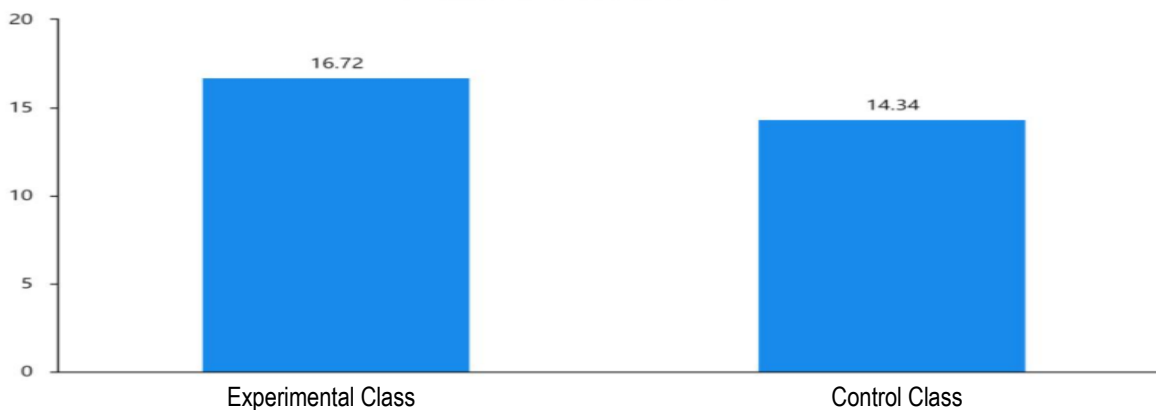


Fig. 5-2 Histogram of t-test comparative analysis of post-test scores of reading in Class (1) and Class(2)

From the final experimental results and comparison, the study shows that integrating multimodal discourse analysis theory into high school English reading classrooms can improve students' reading achievement.

6.0 Findings

Through questionnaires, tests, and interviews, the main findings of this study are as follows.

6.1 After conducting pre and post-reading tests for both classes, it was discovered that the scores of both types had improved. However, the experimental class showed a more significant performance improvement than the other class.

6.2 After conducting pre-test and post-test questionnaires for students in the experimental class, it was discovered that the English reading class guided by the theory of multimodal discourse analysis had a positive impact. It stimulated reading interest, corrected learning attitudes, exercised reading skills, developed reading strategies, enhanced students' self-efficacy, and improved the overall teaching atmosphere of the reading class.

6.3 During classroom observation, significant disparities were observed between the experimental and control classes in their teaching approaches and methods. The practical course displayed a more cohesive and welcoming atmosphere, with active student participation.

6.4 As part of the research, the author conducted in-depth interviews with six high, middle, and low students. This approach helped me better understand the students' perspectives on multimodal foreign language teaching, which complemented the quantitative research. The author listened to the students' opinions with an open mind and used their feedback to constantly reflect on and improve their teaching methods, design, and classroom atmosphere. The ultimate goal was to inspire a love for English reading and promote the students' development.

7.0 Recommendations

Through literature review and empirical research, it is found that integrating multimodal discourse analysis theory into high school English reading classrooms is beneficial to help students get the best reading effect. At the same time, I also found many worthy of optimization and urgent room for improvement.

7.1 Teacher

7.1.1 It is essential for teachers to act as guides in developing students' diverse literacy skills. With the help of The Times, students can broaden their horizons, develop cross-cultural awareness, enhance national pride, and become new-era talents.

7.1.2 It is crucial for teachers to focus on practical application. Precisely, in English reading classes, teachers should aim to provide students with real-life scenarios and examples to enhance their learning experience.

7.1.3 It is vital for teachers to provide clear and accurate guidance. This involves giving clear instructions in the classroom and addressing any difficulties or doubts that students may have in their academic and personal lives.

7.1.4 It is essential for teachers to design their lessons with critical thinking in mind. They should motivate their students to enhance their analytical abilities, approach a topic from various perspectives, and derive conclusions independently.

7.1.5 It's essential for teachers to establish emotional connections with their students. They are crucial in guiding them toward the right path in life, not just imparting linguistic knowledge. Teachers should set an example in all aspects of learning and life, bridging the emotional divide in their students.

7.2 Student

7.2.1 students are encouraged to develop their problem-solving skills in the reading class. They must take ownership of their learning and not rely solely on their teachers. By mastering the class rhythm, they can achieve optimal learning outcomes.

7.2.2 Students should integrate into the class and enhance their interest in learning.

7.2.3 Students should be independent and flexible and choose the best reading strategy according to the text.

7.2.4 Students should strive to translate text knowledge into practice.

7.2.5 As a student, it's essential to take the lead in improving your self-efficacy by communicating effectively. Regardless of your current level of English reading, it would be best if you were willing to challenge your thinking, initiate conversations with teachers and peers, divide your learning tasks into smaller goals, and gradually work towards achieving them. This will ultimately lead to an overall sense of improvement in your self-efficacy.

7.3 Prospect of future research

Many scholars leading the development of multimodal discourse analysis theory focus on systematic functional linguistics or social semiotics research, with only a few engaged in interdisciplinary research. This research field is vast and profound, but its complexity lies in the wideness of multimodal discourse analysis, which emphasizes the integration of multiple disciplines. Researchers' current single-modal educational background may limit expanding the field's research scope. Additionally, most top scholars are concentrated in universities, with research goals focused on combining English teaching and multimodal discourse analysis theory in higher education.

However, there is a need for more emphasis on English teaching in primary and secondary schools. Due to its interdisciplinary nature, the theory involves information technology, emerging technologies, and multimedia means, requiring high school English teachers to possess professional, disciplinary, humanistic, scientific, and information literacy skills.

The research prospects mainly exist in the following aspects: Firstly, the academic background and educational background of the researchers engaged in this theory should be multi-modal, and secondly the section and category of pedagogy engaged by the

researcher should be multimodal. Finally, the professional quality, disciplinary quality, humanistic quality, scientific research quality and information quality of contemporary English teachers should be multimodal.

8.0 Limitations

8.1 The research study has limitations regarding the number and diversity of research objects. The educational experiment involved 100 students from two classes in a senior high school in Changzhou, Jiangsu Province. However, the sample size needs to be expanded to increase the breadth of the study. Additionally, the experiment was conducted on students from the same grade, school, and area, so further research is needed to confirm whether the results are widely applicable to high school students.

8.2 Extending the study period for this educational experiment would be beneficial. It is planned to last from September 2022 to December 2022, which only allows for four-month observation. However, tracking and evaluating learners' progress in English reading could be faster and requires a more extended time frame and multiple perspectives from teachers. Therefore, extending the study period to ensure an accurate and comprehensive evaluation of student development would be advisable.

8.3 The study consists of two pretests and two post-tests for reading. However, due to the limited number of tests and questions, it may give a partial evaluation of the English reading level of the students. Moreover, there are uncontrollable variables such as personal psychology, physiology, and external environment that may influence the performance of individual students during the test. As a result, the test outcomes may only partially be reliable.

8.4 The classroom observation in this study needs more quantitative data analysis and is related to more professional qualitative research. In the classroom observation, the two classes' teaching processes and teaching modes are compared in detail. However, it is only a descriptive comparison of classroom phenomena, which needs to include the conversion of notes, audio, video, and other materials of classroom observation phenomena into data materials. Also, it needs the link of deep qualitative analysis.

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