Investigation of Environmental Multimodal Discourse Evaluation in English Reading Teaching

Ruirui Lin

Haojing College of Shaanxi University of Science & Technology, Xi'an, Shaanxi, China
lruirui@live.cn

Abstract: English reading ability is one of the important components of a student's English ability, which is an important criterion to measure the student's English level. The cultivation of reading ability plays an important role in promoting the improvement of English proficiency. The emergence of environmental multimodal discourse analysis teaching method has brought about important changes in English reading teaching, which reflects the application in English reading teaching. This paper compared the class using environmental multimodal discourse analysis teaching method with the class using traditional teaching mode. It was concluded that the application of environmental multimodal discourse analysis teaching method to English reading teaching improved students' interest in English reading in college. The average was about 2 points higher than that of traditional teaching and the average English reading score was also increased by 11 points, which satisfied students' individual reading needs and improved students' English reading scores.

1. Introduction

With the development of society, countries in the world communicate more closely, and globalization is the general trend. In this process, English, as a language, plays an important role. Therefore, the status of English is very prominent, and the demand for English reading learning and teaching is increasingly high [1-2]. Reading is the foundation of English learning, and mastery of reading skills is one of the important bases for students to improve their English reading. However, the actual situation of English reading teaching at this stage is not satisfactory. The current teaching methods of English reading do not pay enough attention to the cultivation of students' ability to use language and words and their interest in learning. Therefore, it is necessary to explore some new and efficient reading teaching methods, so as to improve the level of students' English reading and stimulate students' enthusiasm for learning. On the other hand, the rapid development of information technology has greatly affected the way the public communicates. Therefore, multimodal classroom teaching is guided by the research perspective of multimodal discourse analysis and integrates linguistic symbols and non-verbal symbols into the English reading teaching classroom, so that students can integrate various sensory multimodal learning in English reading and the papers of English reading should be more three-dimensional and visualized in teaching

[3-4]. With the development of education, people pay more and more attention to English reading teaching. Many scholars have made a series of relevant research reports on how to better carry out English reading teaching. Wu J believed that in the teaching of English reading, it was necessary to promote the development of students' thinking quality, which was an integral part of the core competence of English subjects. However, the current English reading teaching overemphasized the input of language knowledge and the application of reading strategies, and the cultivation of students' thinking quality was neglected [5]. Yan Z believed that reading played an important role in the learning and teaching of languages in other countries and second languages. It not only provided sufficient and important language input, but also laid the foundation for the further development of listening, speaking, and writing [6]. Shi X believed that through online platforms, college students could compete in English. Through competition, learning was promoted, were enhanced by using a blended English teaching model [7]. Chen J believed that the computer could process text, sound and image, which broke the traditional teaching method and conformed to the cognitive law of students, so as to promote the development of students' diversified thinking [8]. Based on environmental multimodal discourse, its research interest has always been high, and related research reports are emerging one after another. Belgrimet S delved into the complexities of multimodal discourse analysis on posters for advocacy campaigns against violence against women and tried to explore how to construct posters with different symbols when cooperating with language [9]. Momsen J observed videos of speakers describing objects to demonstrate the role of visuospatial working memory in understanding multimodal discourse and proved the role of multimodality in discourse [10]. Based on the concept of foothold, Chen J activated the footsteps of different judges through multi-mode resources, including animators, animators + principals, and determined the footsteps of judges in the court [11]. By using a systematic functional multimodal discourse analysis approach, Fei V L examined the relationship between language and gestures teachers used when interacting with students and the meaning produced by multimodality. The interactions between various symbolic resources were described and discussed and a new meaning of "structured informality" was proposed by analyzing and explaining teachers' multimodal choices in the classroom [12].

2. Environmental Multimodal Discourse Evaluation on English Reading

2.1 Theoretical Classification of Multimodal Discourse Evaluation

Different research schools engaged in multimodal discourse analysis theory also have different understandings and definitions for the classification of modal resources, which are mainly divided into three types: new London group, static and dynamic, and dimension [13-14].

Based on the basic theory of multimodal discourse analysis, the New London Group clearly proposes to build the Internet media hypertext era from five aspects: language modality, visual effect, auditory modality, behavioral modality, and spatial environment, which can help people who learn languages of other countries improve their ability to read in a variety of ways [15-16]. From the perspective of teaching, there are three main levels of multiple reading and writing for people who learn other languages, as shown in Figure 1.

Static and dynamic is to divide the modal resources into "static" and "dynamic", and integrate the body dynamics theory for verification. According to its theory, it can be summarized as shown in Figure 2.

Dimensions refer to the modalities that can be divided into one-dimensional mode (linear), two-dimensional mode (planar), three-dimensional mode (stereoscopic) and four-dimensional mode (dynamic) according to the difficulty of identifying symbol resources, and the specific arrangement is shown in Figure 3.
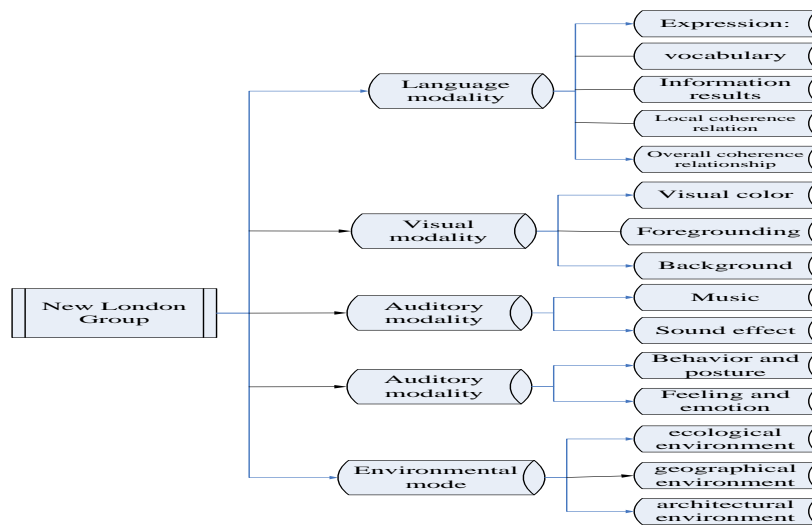
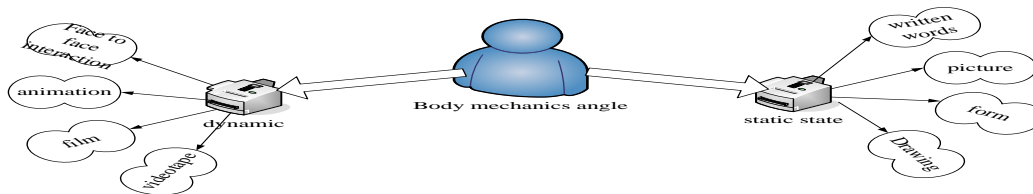Figure 1: Classification of modal resources new London Group

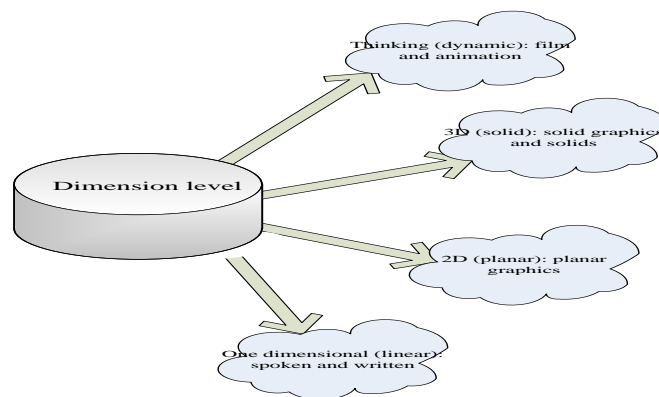Figure 2: Classification of modal resources (static and dynamic)

Figure 3: Classification dimension level of modal resources

2.2 Opportunities Brought by Multimodal Discourse Evaluation to English Reading Teaching

First, the interest in learning is stimulated, and the comprehension of English reading papers is deepened. Many sentence expressions in the self-media era are different from the previous unimodal expressions, which are generally composed of two or more symbol systems. Compared with simple words, they express a wider range. If the shaping of traditional quality is conducive to learners' ability to master basic languages such as reading and writing, it can stimulate their interest and enthusiasm in learning English reading by cultivating learners' multimodal discourse literacy ability. Contemporary text often involves a variety of multimodal symbols, which can be very lively and efficient to publish messages. If the learner has the ability of multi-modal reading, on the premise of understanding the basic language, he can treat an paper from different angles, and analyze the intention of the writer of the paper to choose different modes, so as to more

comprehensively build the actual meaning of the paper as a whole and deepen the understanding of the overall depth of the paper [17].

Second, the enhancement of cross-cultural awareness and the cultivation of learners' multi-modal reading level would help improve learners' cross-cultural awareness. One of the key overarching goals of English reading instruction is to develop cross-cultural awareness and inter-language communicative competence. In the era of self-media, cross-cultural cultivation is not simply equivalent to the teaching of language knowledge. This is because the learning of English reading is not only the grasp of language professional skills, but also the understanding of the multiculturalism of English-speaking countries and the absorption of the country's excellent culture.

Third, it can integrate educational resources and improve English reading ability. Multi-modal teaching content, multi-modal teaching interaction and multi-modal teaching methods allow teachers and students to share multi-media teaching resources, so that the learning effect can achieve the principle of economic adaptation. Teachers should know how to use various modalities, and select the optimal modal form to achieve the best teaching effect based on the cognition, comparison and critical analysis of various multimodal symbol systems. In the lesson preparation, the content of textbooks is integrated, and the multi-modal teaching plans are prepared in advance. Collaborative multimodal teaching methods are utilized and effectively used in teaching to meet the multimodal requirements of different students for college English reading. Students are given the opportunity to practice and use critical awareness to interpret, so as to strengthen the understanding of the text and promote students' meta-cognitive knowledge reading ability, and fully mobilize students' interest in learning to maximize the teaching effect.

2.3 Evaluation of Environmental Multimodal Discourse Algorithm

In the Region Proposal Network (RPN), the learning of classification and position regression is required. In the two-stage object detection network, the multi-level features of the input image are extracted through the backbone network to generate feature maps of different levels, and the dense anchor boxes are generated on the feature maps. The loss for multi-tasking is as follows:

$$\text{Loss} = \frac{1}{M}\sum_{i=1}^{M} L_{cls}(q_i, q_i^2) + \frac{1}{M}q_i^2\sum_{i=1}^{M} L_{reg}(x_i x_i^2) \tag{1}$$

Among them, the first part L_{cls} is the classification loss, which is generally a two-class cross entropy loss function:

$$L_{cls}(q_i, q_i^2) = -[q_i^2\log(q_i) + (1 - q_i^2)\log(1 - q_i)] \tag{2}$$

Among them, q_i^2 is the actual label. If it is a positive sample, it is recorded as 1; if it is a background, it is recorded as 0. q_i is the binary classification prediction score of the anchor box, and the second part L_{reg} is the positioning loss, the formula is as follows:

$$L_{reg}(x) = \begin{cases} 0.5x^2 \\ |x| - 0.5 \text{ otherwise} \end{cases} \tag{3}$$

x_i is the four-dimensional parameterized vector of the frame at the i-th position, and x_i^2 is the four-dimensional parameterized vector of the corresponding marker frame, which are expressed as follows:

$$\begin{cases} x_t = \frac{x - x_b}{w_b}, x_y = \frac{y - y_b}{g_b} \\ x_w = \log\left(\frac{w}{w_b}\right), x_g = \log\left(\frac{g}{g_b}\right) \end{cases} \tag{4}$$

$$\begin{cases} x_t^2 = \dfrac{x^2 - x_b}{w_b}, x_y^2 = \dfrac{y^2 - y_b}{g_b} \\ x_w^2 = \log\left(\dfrac{w^2}{w_b}\right), x_g = \log\left(\dfrac{g^2}{g_b}\right) \end{cases} \tag{5}$$

The relevant algorithm formula of the evaluation index is as follows:

$$\widehat{X} = \sum_i^m w_i x_i, \sum_i^m w_i = 1 \tag{6}$$

The mean square error of English reading teaching performance improvement is:

$$\delta^2 = E\left[\sum_{i=1}^m w_i^2 (x - x_i)^2 + 2\sum_{i=1,k=1,i \neq j}^m w_i(x - x_i)w_k(x - x_k)\right] \tag{7}$$

x_i-i are related parameters and are independent of each other, and x is the unbiased improvement of English reading teaching performance.

$$E[(x - x_i)(x - x_i)] = 0 (i, k = 1,2, \cdots m, i \neq k) \tag{8}$$

Therefore, the overall average improvement in English reading performance is:

$$\delta^2 = E\left[\sum_{i=1}^m w_i^2 (x - x_i)^2\right] = \sum_{i=1}^m w_i^2 \delta_i^2 \tag{9}$$

The overall mean error of English reading performance improvement are:

$$\delta^2 = \frac{\sum_{i=1}^m \delta_i^2}{m^2} \tag{10}$$

$$q(x,y) = q(x|y) \times q(y) = q(y|x) \times q(x) \tag{11}$$

x is the experimental class of class 1, and y is the control class of class 2:

$$q(x|y) = \frac{q(y|x) \times q(x)}{q(y)} \tag{12}$$

3. Application of Environmental Multimodal Discourse Evaluation in English Reading Teaching

Before the experimental study in this paper, one or two senior classes in a university are randomly selected as the research objects to verify whether college English reading teaching guided by environmental multimodal discourse analysis can promote students' English reading performance. The specific results are shown in Table 1, it is divided into class 1 (50 students) and class 2 (50 students). After investigation, all students in these two classes are randomly assigned, and both classes are the same at the beginning of teaching. Therefore, the students in class 1 are used as the experimental class of the experiment, and the English reading teaching is taught by multimodal discourse analysis; while the class 2 is used as the control class, which does not use multimodal discourse analysis and only adopts the traditional English reading teaching mode.

Table 1: Basic information of students in class 1 and class 2 and average reading score in English class test

Class	Total number Average reading score of English class test	Schoolboy	Schoolgirl	Average score of reading in English class test
1 shift	50	26	24	23.98
2 shifts	50	24	26	24.12

As shown in Table 1, the classes are randomly divided, so the average scores of the English reading test of the two classes are not much different, and there is only a difference of 0.14 points.

Therefore, under such an almost negligible gap, it is possible to set two classes as the control group for the experiment.

Before the experiment, the students of the two classes are investigated about their understanding of their English reading level and whether they liked the English reading class. The evaluation criteria include four criteria: like it very much (very understanding), love it (very understanding), insensitivity (unclear) and very dislike (do not understand at all). The survey results are shown in Figure 4.

As shown in Figure 4, it is the student's understanding of reading level. 50 students in the two classes choose to know very well, accounting for 50%, and 25% of the students know their own level well; the students who do not know account for 15%; the proportion of students who do not know is 10%. Regarding their understanding of whether they like the English reading class, there are 60 students in the two classes who like the English reading class very much, accounting for 60%; the students who love it account for 20%; the students who have no feeling account for 15%; the students who do not like it account for 5%. Most of the students know their reading level and like English reading class, which is very helpful for the next research.
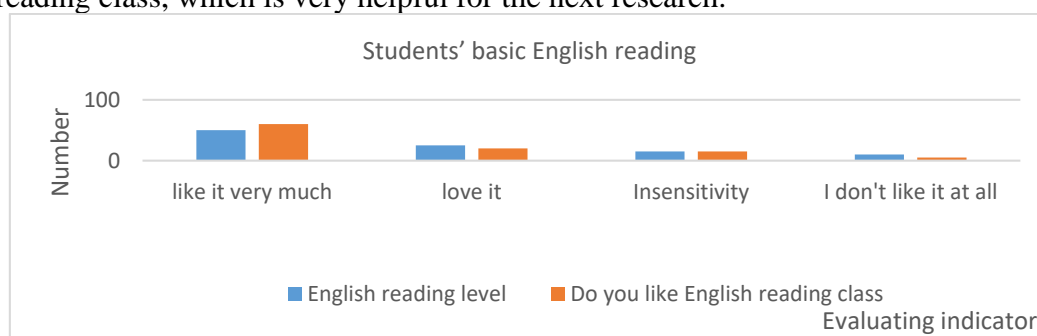

Figure 4: Survey results of students' basic English reading learning in class 1 and class 2

3.1 Environmental Multimodal Discourse Evaluation on Students' Interest in English Reading

A questionnaire was conducted on 100 students in two classes about their interest in English reading courses. The questions in the questionnaire are: 1. English reading class makes people feel relaxed and happy; 2. The teacher's reading teaching content is rich and colorful; 3. The teacher's reading teaching design is very reasonable and easy to understand; 4. The addition of pictures, videos, animations and body language in the reading class makes the class more lively and interesting. The scores for these four questions are 5 points for liking very much and 1 point for disliking them at all. The higher the score, the stronger the consistency. Table 2 shows the experimental results of two classes that did not use environmental multimodal discourse analysis in English reading teaching.

By observing Table 2, it can be found that the average scores of the four questions about the students' interest in English reading courses in the two classes are all lower than 3 points, which shows that there are more than average students who are not interested in English reading courses. Both classes have the highest averages for question 1 at 2.78 and 2.84, respectively. The reason for such a result may be that the current teaching design can not cultivate students' interest in reading. The reasons are as follows: First, the reading materials are mostly plain text, which may cause visual fatigue for students. Second, students lack relevant reading skills training. Without the help of auxiliary tools such as dictionaries, they cannot simultaneously grasp the subject and details of the text and search for relevant materials within the specified time. It can be seen from the above that it is very important to change the status quo and enhance students' reading ability. Therefore, it is necessary to try to apply a new teaching method in English reading class.

Table 2: Data analysis of students' interest in English reading class of class 1 and class 2 (before the experiment)

Class	Question number:	Average value
1 shift	1	2.78
	2	2.71
	3	2.45
	4	2.51
2 shifts	1	2.84
	2	2.72
	3	2.35
	4	2.49

The experimental class 1 is taught the multimodal discourse analysis teaching method for 2 months, and the control class 2 is still taught in the conventional way. After the experiment, the two classes investigate the four questions again to explore the difference between the multi-mode teaching method and the normal teacher method and the detailed data results are shown in Figure 5.
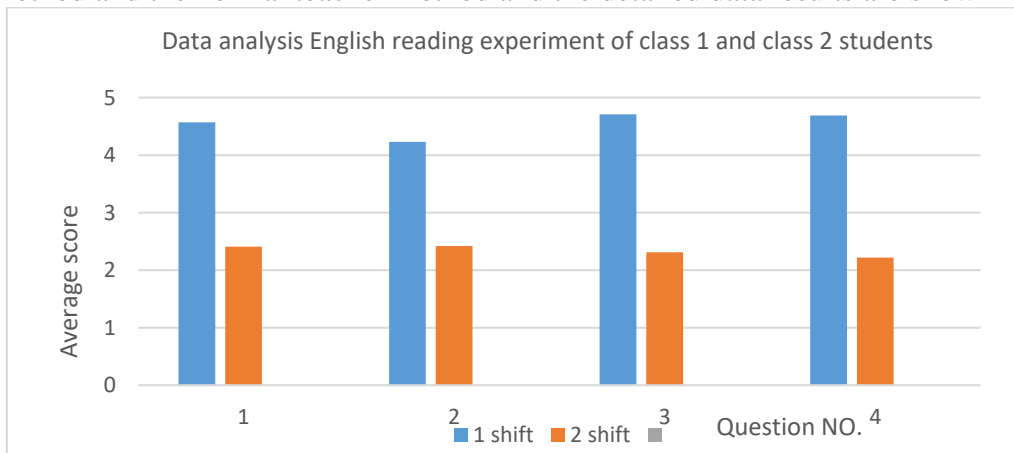

Figure 5: Data analysis of students' interest in English reading class of class 1 and class 2 (after the experiment)

As shown in Figure 5, the average of each question in English reading in class 1 using the multimodal discourse analysis teaching method is higher than 4 points. Class 2 is taught according to the traditional model, and the average of the four questions is lower than before. This once again shows that the traditional teaching mode would affect students' interest in English reading class, indicating that the application of environmental multimodal discourse analysis to English reading teaching greatly improves students' enthusiasm for English reading class. Among them, class 1 using the multimodal discourse analysis teaching method has the highest average score of 4.71 in question 3 "The teacher's reading teaching design is very reasonable and easy to understand", which is 2.4 points higher than the average of class 2 using the traditional teaching mode; the lowest average score is in question 2 "The teacher's reading teaching content is substantial and colorful". The score is 4.23 points, which is 1.81 points higher than the same question in class 2. Class 2 using the traditional teaching mode has the highest average value in question 2 "the teacher's reading teaching content is rich and colorful", and the score is 2.42 points. The lowest average is only 2.22 points for question 4, which is 2.47 points lower than the average of class 1. The average improvement of class 1 in question 3 is 2.26 points, which indicates that the multimodal discourse analysis teaching method used by the teacher make most students enjoy English reading courses, and most students begin to like or prefer English reading courses. Students credit the multimodal

teaching approach, which changes their perceptions of English reading and greatly increases their expectations for the course, and it also has a positive impact on their English proficiency.

After analyzing the impact of multimodal discourse analysis teaching in the application environment on students' interest in English reading, this paper continues to study the impact of multimodal discourse analysis teaching on students' English reading activities. This is mainly based on four questions: question 5: In reading class, students really want to speak and answer the teacher's question; question 6: Students can keep up with the pace of classroom activities designed by the teacher; question 7: Students like the English reading class that the teacher utilizes the multimodal instructional design; question 8: The multimodal instructional design has improved the reading comprehension. These four questions are rated as 5 for very liked and 1 for disliked at all. The higher the score, the stronger the consistency. The results of the number of experiments in class 1 after using multimodal discourse analysis teaching are compared with the average value of class 2 after teaching English reading without the traditional teaching mode, and the specific results of the comparison are shown in Figure 6.
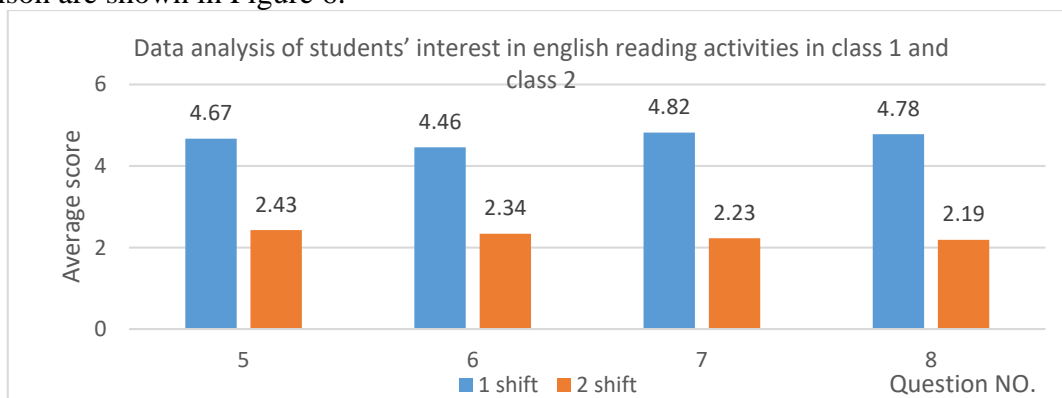

Figure 6: Data analysis and comparison of students' interest in English reading activities in class 1 and class 2

By observing Figure 6, it can be found that the average of each question in class 1 is higher than 4.5 points in the English reading activity using the multimodal discourse analysis teaching method. Class 2 is taught in the traditional mode, and the average of the four questions is much lower than that of class 1 and none exceeds 2.5 points. This once again shows that the multimodal teaching mode can give students positive feedback on activities in real time, so the willingness of students to participate in activities is also greatly improved. Among them, Class 1 using the multimodal discourse analysis teaching method has the highest average and score of 4.82 in question 7 "Students like the English reading class designed by the teacher using multimodal teaching", which is 2.59 points higher than the average of 2 classes using the traditional teaching mode; the lowest average is 4.46 points for question 6, "Students can keep up with the pace of classroom activities designed by teachers," which is 2.12 points higher than the same question in class 2. Class 2 using the traditional teaching model has the highest average score in question 5 "In reading class, students want to speak and answer the teacher's question", and the score is 2.43 points, which is 2.24 points lower than the average of class 1. Question 8 has the lowest average, and it has a score of only 2.19. The average of this class is 2.59 points lower, and the gap is more than doubled. Class 1 has the largest difference between the averages in questions 6 and 7, and class 1 is 2.59 points higher than class 2.

Teachers use environmental multimodal discourse analysis in the design of students' English reading activities and allow students to role-play and imitate characters as well as work in small groups. This would increase the enthusiasm and enthusiasm of students to participate and change their attitude towards English reading. The teaching activities designed by teachers are rich and

colorful, which can allow students to actively participate in a series of activities such as competition speeches, so that students can gradually exercise their courage and enhance their self-confidence in the process of participating. Therefore, through the analysis of the questionnaire results, it can be seen that the multimodal teaching method can improve the application of environmental multimodal discourse analysis to English reading teaching, which greatly improves the enthusiasm of students to learn English reading activities.

3.2 Environmental Multimodal Discourse Evaluation on the Improvement of Students' English Reading Performance

In order to ensure that there is no significant difference in the actual level of the experimental class 1 and the control class 2 before the experiment, this paper conducts an independent sample t test on the pre-test scores of the two classes. The total score of the test paper in the original test is 40 points. The average score represents the reading level of the whole class, and SD represents the Standard Deviation. The specific data are shown in Table 3.

Table 3: T-test results of independent samples of class 1 and class 2 before the experiment

Class	Number	Average value	SD	T
1 shift	50	23.98	6.897	0.073
2 shifts	50	24.12	7.012	

As can be seen from Table 3, there are 50 students in class 1 of the experimental class. The average score before the experiment is 23.98, and the standard deviation of the experiment is 6.897; there are also 50 students in class 2 of the control class, and the average value before the experiment is 24.12. The standard deviation score is 7.012 points, and the mean and standard deviation of the two classes are very similar. A t-value is used to analyze the data more deeply to find out the differences between the experimental and control classes. Under the assumption that the total variance is equal, the t value is 0.073, which indicates that there is no significant difference in English reading scores between the two classes. Based on the results of the data analysis, it is concluded that the reading levels of the students in the two classes are almost the same. Therefore, teaching experiments can be carried out.

After 2 months of multimodal discourse analysis in English reading teaching application experiment, class 1 and class 2 are tested after the experiment. This is to verify whether the application of environmental multimodal discourse analysis teaching method to English reading teaching can improve students' reading performance. The test paper used has a total score of 40 points. Descriptive statistics and independent sample t-test are performed on the collected scores, and the test scores of class 1 using the environmental multimodal discourse analysis teaching method are compared with the test scores of class 2 using the traditional teaching mode, so as to observe whether there are differences in students' English reading scores between the two teaching methods, the comparison results are shown in Figure 7.

As shown in Figure 7, it can be very intuitively found that the average test score of experimental class 1 after using the environmental multimodal discourse analysis teaching method is 34.98 points, which is 11 points higher than the average score without using the teaching method in this paper; The score of control class 2 is only 24.56. The average score is only 0.44 points higher than that of two months ago and the degree of improvement is very small. However, the average score of class 1 in the experimental class is 10.42 points higher than that of class 2 after the use of multi-modal discourse analysis, which shows that the application of the teaching methods in this paper to English teaching reading can significantly improve the students' performance.
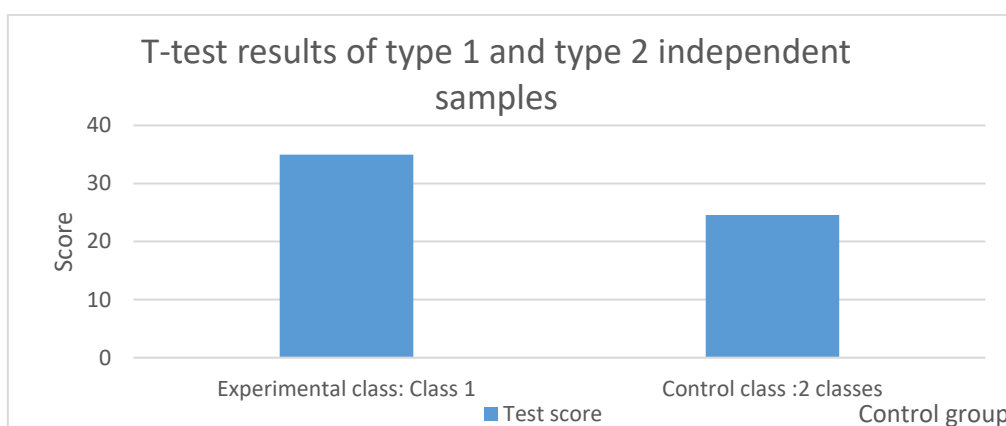
Figure 7: T-test results of independent samples of class 1 and class 2 after the experiment

4. Conclusions

As a new type of teaching method, the environmental multimodal discourse analysis theory has been applied to the English reading teaching process to fill the deficiencies of the conventional teaching mode in the classroom, and reform and innovate the rigid education theory, which is very suitable for the development prospects of the current education industry. By adopting a multimodal education theory, teachers and students can flexibly use modern technology to provide multiple choices for classroom teaching. By using environmental multimodal discourse analysis to study English reading teaching and by comparing it with the conventional teaching mode the development of the use of environmental multimodal discourse analysis for English reading teaching can not only enhance students' reading interest, but also improve students' English reading performance as much as possible. This basically meets the needs of most students for English reading and stimulates students' interest in learning English, so that students can actively participate in the English reading teaching designed by teachers and students' practical ability to use English reading can be cultivated.

References

[1] Bowers, Jeffrey, S. The importance of correctly characterising the English spelling system when devising and evaluating methods of reading instruction: Comment on Taylor, Davis, and Rastle. The quarterly journal of experimental psychology: QJEP, 2018, 71(7):1497-1500.

[2] Kieffer M J, Mancilla-Martinez J, Logan J K. Executive functions and English reading comprehension growth in Spanish-English bilingual adolescents. Journal of Applied Developmental Psychology, 2021, 73(3):101-238.

[3] Prieto L P, Sharma K, Kidzinski L. Multimodal teaching analytics: Automated extraction of orchestration graphs from wearable sensor data. Journal of Computer Assisted Learning, 2018, 34(2):193-203.

[4] Huang R. A Study on Multimodal Teaching Mode for Adult English Learners under Epidemic Situation. Open Journal of Modern Linguistics, 2020, 10(4):366-374.

[5] Wu J. The Research on the English Reading Teaching Mode Aiming at the Improvement of Thinking Quality. Region - Educational Research and Reviews, 2021, 3(2):040-043.

[6] Yan Z. Research on the Cultivation of Non-English Majors' English Reading Interest: POA Teaching Mode in the Internet + Era. Journal of Physics: Conference Series, 2020, 1533(2):022-090 (7pp).

[7] Shi X. Research on the Empirical Study of Blended English Teaching Model Based on Network Platform Promoting Learning by Competition. Journal of Physics: Conference Series, 2021, 1915(2):022-079 (5pp).

[8] Chen J, Qian Y. Research on the Application of Computer Multimedia Technology in English Education and Teaching. Journal of Physics: Conference Series, 2021, 1915(3):018 -032 (5pp).

[9] Belgrimet S, Rabab'Ah G. A Multimodal Discourse Analysis of English Posters in Violence Awareness Campaigns against Women. Theory and Practice in Language Studies, 2021, 11(2):181-191.

[10] Momsen J, Gordon J, Wu Y C. Event related spectral perturbations of gesture congruity: Visuospatial resources

are recruited for multimodal discourse comprehension. Brain and Language, 2021, 216(6):104-916.

[11] Chen J. Multimodal Discourse Analysis of Judges' Footing Shifts in Criminal Courtroom. Chinese Journal of Applied Linguistics, 2020, 43(1):005-025.

[12] Fei V L. Investigating intersemiosis: a systemic functional multimodal discourse analysis of the relationship between language and gesture in classroom discourse. Visual Communication, 2021, 20(1):034-058.

[13] Camiciottoli B C, I Fortanet-Gómez. Towards developing multimodal literacies in the ESP classroom: methodological insights and practical applications Introduction to the SPECIAL ISSUE Multimodal approaches in ESP: innovative research and practice. Multimodal Communication, 2021, 11(1):001-004.

[14] Zhang Q, Min G. Yang-ge dancing, to be fit and happy: A multimodal analysis of the discourse in thePeople's Daily. Chinese Language and Discourse, 2019, 10(1):061-083.

[15] Cohen S, Dohan A. Flow quantification in congenital heart disease with magnetic resonance imaging: A new tool in multimodality assessment of complex abnormalities. Archives of Cardiovascular Diseases, 2020, 113(12):763-765.

[16] Chen X, Liu X, Tao Z. Similarity and dissimilarity measures of basic uncertain information and their applications in group decision-making. Computational and Applied Mathematics, 2022, 41(6):063-065.

[17] Sujanta Kazemanzadeh. Distributed System Integrating Virtual Reality Technology in English Teaching. Distributed Processing System, 2022, Vol. 3, Issue 1: 62-70.