# A Case Study on the Multimodal Coordinated Relationship of Teacher Scaffolding in a Content and Language Integrated Classroom

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**Abstract:** *This study uses a teaching video of a Content and Language Integrated (CLI) comprehensive English course, which is taught by an English major teacher in a certain university, as the corpus. The video is 80 minutes in length. Based on the constructed Framework of Systemic Functional Multimodal Discourse Analysis, it explores the application of teacher scaffolding, its multimodal characteristics, and how various modalities coordinate with scaffolding language to construct meaning. The research findings are as follows: (1) In the CLI classroom, the teacher employed a diverse range of teaching scaffolding to help students, mainly including reinforcing key information, guiding self-correction, bridging information gaps, and simplifying tasks; additionally, most of the teacher scaffolding activities are targeted at content, followed by language. (2) Teacher scaffolding exhibits distinct multimodal characteristics. The teacher predominantly uses falling tones, and frequently employs intonation nuclei to emphasize key points. Gestures mainly consist of stress gestures and symbolic gestures that help convey complex concepts. The teacher often moves around in the classroom space, and her eye movements mainly involve scanning the entire class; there are certain differences in the multimodal characteristics of the scaffolding used by the teacher when focusing on different aspects. (3) The various modalities of teacher scaffolding coordinate with scaffolding language to jointly construct the ideational meaning, interpersonal meaning, and textual meaning of teacher scaffolding. They often form a complementary and reinforcing relationship (primary-secondary and expansion) with scaffolding language. This study aims to provide some insights for CLI teachers on how to construct teacher scaffolding and achieve effective classroom teaching.*

**Keywords:** Teacher Scaffolding, Multimodality, Meaning Coordination, Content and Language Integration.

## 1. Introduction

Since the 1990s, "scaffolding" has gradually become an important aspect of foreign language classroom research (Li Danli, 2012). This term is increasingly used to describe certain kinds of support which learners receive in their interaction with parents, teachers, and other 'mentors' as they move towards new skills, concepts, or levels of understanding (Maybin et al., 1992). However, at present, research on "scaffolding" focuses on the verbal scaffolding of teachers, and not enough attention is paid to non-verbal scaffolding (Xu Jinfen Chen Ziyi, 2022). Teacher scaffolding exists in the interactive activities between teachers and students, and a significant portion of its communicative meaning is realized through non-verbal features. The intonation, speech rate, head movements, eye contact, gestures, and other aspects of both the participating teachers and students all play a role in this process. (Sun Xin et al. 2021). Therefore, the study of non-verbal teacher scaffolding is of particular importance. Multimodal Discourse Analysis provides a methodological possibility for the research on non-verbal scaffolding. Multimodal Discourse Analysis not only focuses on linguistic symbols but also pays attention to other non-verbal resources, including images, sounds, gestures, and so on. Moreover, this approach emphasizes exploring how different semiotic resources are interconnected and jointly contribute to realizing the meaning that the speaker intends to convey. (Zhang Delu, 2009).

Content and Language Integration (CLI) is an educational concept that uses foreign languages to teach or learn content and language to achieve multiple purposes (Chang Junyue, 2020), and its positive effects have been effectively proven (Chang Junyue Zhao Yongqing, 2020). In China, classroom teaching serves as a crucial frontline for foreign language learning, playing an irreplaceable role in promoting learners' acquisition of the target language. Under the teaching concept of Content and Language Integration (CLI), learners are confronted with the dual tasks of learning subject content and a foreign language. Therefore, the scaffolding role of teachers is both necessary and significant for the teaching effectiveness of CLI. Based on this, this study takes the CLI comprehensive English course as an example to explore the application of teacher scaffolding, its multimodal characteristics, and how various modalities coordinate to construct meaning through scaffolding language, thus fulfilling the scaffolding function. The aim is to provide suggestions for CLI teachers on how to construct effective scaffolding and enhance teaching effectiveness.

## 2. Literature Review

### 2.1 Teacher Scaffolding

Wood et al. (1976:90) first proposed the concept of "scaffolding", defining it as a process of helping children or novices to solve problems, complete tasks or achieve goals independently. Stone (1998), van de Pol et al. (2010) and Enyewel et al. (2015) believe that teacher scaffolding in classroom interaction is an interactive process aimed at helping learners enhance their autonomous learning ability and achieve self-regulation. Talebinejad & Akhgar (2015) regard teacher scaffolding as a classroom teaching strategy. Based on the above, this study defines teacher scaffolding as follows: In accordance with the current level and actual needs of students, teachers provide temporary and targeted assistance to students in order to help them complete tasks that they cannot accomplish independently, or to achieve goals that are beyond their current capabilities.

Most studies have found that in a teaching environment, teacher scaffolding can have a positive impact on students' academic performance, skill mastery, reading ability, and comprehensive ability (Li Youliang 2010; Peng Yanghua and Zhou Ping 2011; Mulatsih 2011). Moreover, teacher scaffolding can motivate learners to participate in classroom activities, improve their conceptual understanding, help learners solve learning errors, and develop students' and teachers' thinking and reflection abilities (Meyer and Tumer 2002; Wischgoll et al. 2015; Muhonen et al. 2016; Lv Jing and Yang Min 2020). However, although the effectiveness of teacher scaffolding has been fully confirmed, the observation content of these studies is mostly classroom records of award-winning teaching skills competitions, and overall, there is insufficient attention to daily teaching situations; secondly, because learners in CLI classrooms have to complete the dual tasks of content and language, this makes teachers face a higher difficulty challenge when providing teacher scaffolding, but currently few scholars have explored how teachers in CLI classrooms should build teacher scaffolding; in addition, the meaning of teacher scaffolding does not solely come from pure language. Modalities such as gestures, postures, eye contact, and paralanguage also carry meaning. The meaning of teacher scaffolding is jointly conveyed and expressed through the coordinated interaction of multiple modalities. Nevertheless, most current studies only focus on the scaffolding of a single pure language modality, paying little attention to non-verbal scaffolding and the coordinated relationship between scaffolding modalities. Systemic Functional Multimodal Discourse Analysis provides a theoretical basis for studying these aspects.

## 2.2 Systemic Functional Multimodal Discourse Analysis Framework

Multimodal discourse refers to the phenomenon of communication through multiple means and symbolic resources such as language, images, sounds, and actions (Zhang Delu, 2009). The study of multimodal discourse began in the 1990s. Based on the theory of systemic functional linguistics (Halliday, 1978), the academic community has constructed a variety of Multimodal Discourse Analysis frameworks, such as spatial analysis, perspective image analysis, gesture analysis, and systemic functional linguistics paralanguage system (O'Toole, 1994; Kress & van Leeuwen, 1996; Martinec, 2004; Hood, 2011; Lim, 2017; Martin & Zappavigna, 2018). In China, the initial stage of research focused on the introduction of concepts (Li Zhanzi, 2003; Zhu Yongsheng, 2007; Hu Zhuanglin, 2007; Gu Yueguo, 2007; Yang Xinzhang, 2009). After that, Zhang Delu (2009) established a comprehensive and clear framework for Multimodal Discourse Analysis based on Halliday's systemic functional linguistics theory, dividing the multimodal discourse system into two major categories: language system and non-language system, namely "Multimodal Discourse Media System", and divided the multimodal discourse relationship into complementary and non-complementary, namely "Multimodal Discourse Relations" (Table 1). In addition, Ying Jieqiong and Xie Chaoqun (2024) constructed a Multimodal Discourse Analysis framework of teachers' language, gestures, body postures and expressions in English teaching based on previous research.

**Table 1:** Multimodal Discourse Relations

| **Complementary**: One mode of discourse cannot fully express its meaning. Or it cannot express its full meaning and needs to be supplemented by another mode. | **Reinforcement**: One mode is the main form of communication, and another or more modes are its reinforcement. | **Protrude** | One modality provides background for another modality, bringing it to the foreground. |
| --- | --- | --- | --- |
| | | **Primary-secondary** | One mode is the main form of communication, and the other mode plays a supporting role. |
| | | **Expansion** | One modality complements what the other modality does not or cannot express. |
| | **Non-reinforcement:** The two communication modes are indispensable and complementary to each other. | **Cross** | Two or more modes alternately describe an event or activity. |
| | | **Joint** | In the same mode, different media together express the complete meaning. |
| | | **Harmonization** | The two modes work together to express a complete meaning and neither is indispensable. |
| **Non-complementary** | The second mode does not contribute much to the first in terms of meaning, but it still appears as a mode. | | |

**Table 2:** Systemic Functional Multimodal Discourse Analysis Framework

| Modalities | Aspects of Inspection | | Conceptual meaning | Interpersonal significance | Discourse Meaning |
| --- | --- | --- | --- | --- | --- |
| **Pure Language** | Transcribed Text | | Transitivity Process | Mood System: Questions, Statements, Commands, Exclamations | Thematic Structure: Speaker's Perspective (e.g., Person) |
| **Para-language** | Intonation | Rising | | Intonation | Toneme, Nucleus and Rhythm |
| | | Falling | | | |
| | | Fall-rise | | | |
| | Speech Rate | Slowing Down | | | |
| | Intonation Nucleus | | | | |
| **Gesture** | Symbolic | | Symbolism: Concrete Objects, Metaphorical Concepts Deixis: Importance, Acceptability, Pointing Relationships | Attitude: Positive, Negative Engagement: Expansion or Contraction of the Communicative Space Graduation: Fast, Medium, Slow Speed | Wavelength: Amplitude, Rhythm Direction: Direction, Clarity |
| | Pointing | | | | |
| | Beat | | | | |
| | Stress | | | | |
| **Spatial Position** | Authoritative Space | | | Engagement: Intimacy | |
| | Mobile Space | | | | |
| **Eye contact** | Gazing at Individuals | | | Eye Contact: Gaze (Yes/No) | |
| | Scanning the Whole Class | | | | |
| | At Others (Books, Blackboard, Screen, etc.) | | | | |
| **Expression** | Joy | | | Emotion: Happy, Sad, Serious, etc. | |
| | Smile | | | | |
| | Seriousness | | | | |
| | Doubt | | | | |

Since this study is a multimodal discourse analysis of teacher scaffolding in the foreign language teaching classroom, and considering the representativeness, complementarity and practical guidance of each framework, this study refers to the frameworks created by several scholars (Lim, 2017; Martin & Zappavigna, 2018; Zhang Delu, 2009; Ying Jieqiong and Xie Chaoqun, 2024), and based on the research purpose of this study, a "Systemic Functional Multimodal Discourse Analysis Framework" was constructed, as shown in Table 2 below, to explore the multimodal characteristics of teacher scaffolding and how paralanguage, gestures, spatial position, eye contact and expression modalities work together to scaffold the pure language modality to construct meaning.

## 3. Research Methods

### 3.1 Research Questions

1) What kinds of teacher scaffolding exist in CLI classrooms? And what is the distribution pattern of these scaffolding in content teaching, language teaching, and the integrated teaching of content and language?

2) What multimodal discourse characteristics do teacher scaffolding in CLI classrooms exhibit?

3) How do the paralanguage, gestures, spatial positions, eye contact, and facial expressions of teacher scaffolding in CLI classrooms coordinate with the pure language modality of scaffolding to construct meaning?

### 3.2 Research Context and the Participant

The corpus of this study is derived from a compulsory course for freshmen majoring in English at a certain university in China - Comprehensive English: Classic Works of American Literature. This course is one of the multiple courses developed during the English major reform carried out by this foreign language university in accordance with the educational concept of CLI. In one semester (17 weeks), this course completes a total of 5 units, with one main text in each unit. There are two classes per week, and each class lasts for 80 minutes. The teaching content of the recorded class in this study is an excerpt from the classic selection of The Old Man and the Sea, and the teaching target is a complete freshman class with 30 students.

**Table 3:** Basic information of the participant

| Participants | Gender | Teaching Age | Time Teaching CLI | Professional Title | Lesson Observed | Students Information |
|---|---|---|---|---|---|---|
| **Teacher Z** | Female | 20 years | More than 10 years | Associate Professor | *Comprehensive English: Classic Works of American Literature* | First-year undergraduate students majoring in English |

In order to observe how English teachers use teacher scaffolding and its multimodal aspects in CLI classrooms, this study adopts the methods of purposive sampling and convenience sampling to find the suitable participant. The criteria for selecting the participating teacher are as follows: 1) An experienced teacher with 5 - 10 years of teaching experience; 2) The teacher should have an understanding of teacher scaffolding and practical experience in applying it. Based on this, this study has invited a teaching teacher, and the basic information about this teacher is shown in Table 3.

### 3.3 Data Collection and Analysis

The data of this study mainly comes from classroom videos, and secondly from teaching auxiliary materials, such as teaching courseware, etc. This study uses qualitative research methods to analyze data. The specific steps are as follows:

First, the recording materials were transcribed. The recording materials were transcribed with the help of Jianying software, and then manually compared, with an accuracy rate of 95%.

Second, identify the segments containing teacher scaffolding functions and classify and annotate them (usage type and distribution). This study refers to the scaffolding classification of Wood et al. (1976) and Sun Xin et al. (2021), and proposes 6 types of teacher scaffolding (Table 3) based on the actual corpus. This study invited a graduate student. The two selected 20% of the transcribed text for back-to-back annotation, with a consistency rate of 66.7%. After discussion and agreement, the remaining part was completed by the researcher alone.

Third, based on the "Systemic Functional Multimodal Discourse Analysis Framework" constructed in this study, the teacher scaffolding was multimodally coded and counted through ELAN6.7 software, and the coding statistical results were analyzed for multimodal features. Similarly, the coding part was selected by two scholars for 20% back-to-back annotation, with a consistency rate of 76%. After reaching a consensus through discussion, the remaining part was completed by one person.

Fourth, based on the "Systemic Functional Multimodal Discourse Analysis Framework" and "Multimodal Discourse Relations", we analyze how the paralanguage, gestures, spatial position, eye contact and facial expression modalities in the teacher scaffolding work together to scaffold the pure language modality to construct meaning.

## 4. Research Results and Discussion

### 4.1 Teacher Scaffolding Usage

The usage of teacher scaffolding in CLI classroom is shown in Table 4. There are 70 teacher scaffolds in total, and their usage can be divided into 6 different types.

Firstly, the teacher uses the scaffolding of 'reinforcing key information' most frequently. This scaffolding often achieves its function through means such as repeating, rephrasing students' words, and making reconstructive summaries. This result is relatively consistent with the research findings of Du Xiaoshuang and Zhang Lian (2022). Specifically, frequent repetitive input can help students deepen their memory of this information. Rephrasing students' words can assist students in

understanding and mastering knowledge from a more comprehensive perspective, and this approach can also improve students' language expression ability. Using reconstructive summaries can help students integrate scattered information and form a complete knowledge system.

Secondly, "guiding self-correction" uses a relatively small degree of scaffolding support to subtly guide students to think independently, thereby achieving self-correction. Radford et al. (2012) believe that when providing scaffolding, teachers should strive to encourage self-repair because it provides learners with the opportunity to utilize their own knowledge resources. In this study, the teacher often uses "fill-in-the-blank scaffolding". For example, when the teacher says "The old man and the...", she is guiding students to naturally correct and fill in the missing part of the sentence. In addition, "rising tone scaffolding" is also frequently used. For instance, when a student mispronounces a word (such as mispronouncing "sharp"), the teacher repeats the word with a rising tone to guide the student to discover the mistake and correct it independently.

Thirdly, "bridging the information gap" further increases the depth of the course through expansion and transfer, helping students integrate and construct a more complete and systematic knowledge system. Moreover, this study also found that the teacher flexibly uses translanguage in class, achieving conversion between Chinese and English. In the process of "bridging the information gap", the proportion of the mother tongue usage is 71.4%. This strategy of using the mother tongue aims to reduce the difficulty of learning and ensure that students can better understand the content and language knowledge of the CLI course, which is consistent with the research results of Sun Xin and Zhou Xue (2022).

Fourthly, "simplifying the task" is often achieved by reshaping the way of asking questions. For example, the teacher first asks the whole class, "'take it when it comes.' What does it mean?" After a few seconds of silence, the teacher realizes that this question may be too broad, so the teacher simplifies the question to "'take it when it comes', what does 'it' refer to?" In this way, the scope of the question is narrowed, and students start to actively participate in answering the question. In fact, the process of "simplifying the task" is actually the process for teachers to find the students' zone of proximal development. When students correctly understand and answer the question under the teacher's prompt, then this question has completed its scaffolding function, which can develop students' language expression ability and cognitive level (Zhao Nisha, 2012).

**Table 4:** Usage of teacher scaffolding

| Teacher Scaffolding Usage | Quantity: 70 (Aspects of Attention: Content 32 / Language 26 / Content and Language 12) | Definition | Examples |
|---|---|---|---|
| **Reinforcing Key Information** | 42 (60%) (20/15/7) | When students need to strengthen their understanding and memory of knowledge in terms of content or language, the teacher highlights key information by repeating, rephrasing students' words, and making reconstructive summaries, etc., to help students enhance their understanding and memory of key information. | T: So we can tell this fisherman was very [Waiting for students' answers]<br>S: Skilled (One student answers)<br>T: **yes, skilled and experienced because he could tell the weather from the clouds in the sky.** |
| **Guiding Self-correction** | 8 (11.4%) (4/4/0) | When students are unable to answer questions effectively, the teacher guides students to self-correct through prompting or hinting, helping students complete the task. | SB: …razor-sharp (Pronounces sharp wrongly)<br>T: **razor…**<br>SB: razor-sharp (still wrong)<br>T: **sharp (Wrong pronunciation, rising tone)**<br>SB: oh, sharp<br>T: Yeah, sharp |
| **Bridging the Information Gap** | 6 (8.6%) (4/1/1) | When students do not understand or have an incomplete understanding of knowledge in terms of content or language, the teacher bridges the information gap between students' current understanding and the correct understanding by mobilizing various resources, etc. | T: What's the meaning of "plowed over"?<br>S: 冲(Chinese equivalent to "dash"), dash<br>T: plow [Rising tone]?<br>T: **Plowing the land, right? So "plow over" has the same meaning, 只不过这块不是土地而是水, (Chinese equivalent to "except that here it's not the land but the water.") So we translate it as "破浪而起"(Chinese equivalent to "cut through the waves").** |
| **Simplifying Tasks** | 5 (7.1%) (4/1/0) | When the task is difficult for students to understand, the teacher simplifies the complex task in a way that learners can recognize. | T: "take it when it comes." What does it mean?<br>Ss:<br>T: **take it when it comes, what does "it" refer to?**<br>Ss：The shark<br>T: The shark, that's possible. It can refer to the specific shark, or it can refer to anything that happens.<br>T: "take it when it comes" means when something comes, what do we do? We deal with it, right… |
| **Providing Emotional Support** | 5 (7.1%) (0/3/2) | When students show signs of lack of confidence, hesitation, anxiety, or withdrawal towards questions or tasks, the teacher provides emotional support to students by encouraging, affirming, or praising them. | T: Let me ask some of you to read some part of the paragraph. SA.<br>SA: …<br>T: Okay, just stop here, **good, okay, you read very well. I think most of the words were pronounced very well, correctly. Thank you.** |
| **Drawing Students' Attention** | 4 (5.7%) (0/2/2) | When students encounter difficulties in understanding and their attention drops, the teacher uses classroom directives and other means to draw students' attention to the knowledge points. | T: **Look at this [Points to the PPT]**. At a spot where the line intersected with the line… |

In addition, in terms of the aspects of attention, this study finds that the teacher pays the most attention to the content in class, accounting for 45.7%. The attention to language ranks second, accounting for 37.1%, while the attention to the integration of content and language is the least, accounting for 17.2%. This may be because the data comes from the first class of the course, and the teacher attaches more importance to students' initial understanding of the subject content. Classic literary works are complex and literary, and they are relatively difficult for freshmen to understand. Therefore, the teacher provides content scaffolding to guide students to understand the article, the authors' intentions, and conduct literary analysis. Moreover, since the language of classic works poses challenges to students' understanding and analysis abilities, the teacher also provides language scaffolding to help students master unfamiliar words, complex sentence structures, and rhetorical devices. Although the attention to the integration of content and language is relatively less, effective CLI teaching should emphasize the interaction between the two, because the content of literary works is often expressed through its language form. The teacher helps students understand both the content and the language simultaneously by guiding them to pay attention to the key words, sentence structures, and text organization in the text.

**4.2 Multimodal Features of Teacher Scaffolding**

This paper mainly examines the characteristics of five non-verbal modalities of teacher scaffolding in CLI classrooms, namely paralanguage, gestures, spatial positions, eye contact, and facial expressions. The research results are shown in Table 5.

**Table 5:** Multimodal characteristics of teacher scaffolding

| Modalities | Aspects of Inspection | | Reinforcing Key Information Total (Content-Language-Content and Language) | Guiding Self-correction Total (Content-Language-Content and Language) | Bridging the Information Gap Total (Content-Language-Content and Language) | Simplifying Tasks Total (Content-Language-Content and Language) | Providing Emotional Support Total (Content-Language-Content and Language) | Drawing Students' Attention Total (Content-Language-Content and Language) | Total |
|---|---|---|---|---|---|---|---|---|---|
| Pure Language | Transcribed Text | | 42(20-15-7) | 8(4-4-0) | 6(4-1-1) | 5(4-1-0) | 5 | 4 | 70 |
| Para-language | Intonation | Rising | 0 | 5(3-2-0) | 0 | 5(4-1-0) | 0 | 0 | 10 |
| | | Falling | 35(15-13-7) | 4(2-2-0) | 7(4-1-2) | 0 | 5(0-3-2) | 3(0-1-2) | 54 |
| | | Fall-rise | 20(14-5-1) | 1(1-0-0) | 6(4-2-0) | 0 | 0 | 1(0-1-0) | 28 |
| | Speech Rate | Slowing Down | 14(9-1-4) | 0 | 2(1-0-1) | 0 | 0 | 0 | 16 |
| | Intonation Nucleus | | 35(23-4-8) | 0 | 2(1-0-1) | 0 | 2(0-2-0) | 0 | 39 |
| Gesture | Symbolic | | 24(16-2-6) | 3(3-0-0) | 7(5-1-1) | 1(1-0-0) | 0 | 0 | 35 |
| | Pointing | | 5(3-0-2) | 0 | 1(1-0-0) | 0 | 0 | 1(0-0-1) | 7 |
| | Beat | | 5(2-3-0) | 0 | 0 | 0 | 0 | 0 | 5 |
| | Stress | | 35(21-10-4) | 0 | 2(0-2-0) | 0 | 0 | 0 | 37 |
| Spatial Position | Authoritative Space | | 9(5-1-3) | 1(0-1-0) | 4(4-0-0) | 1(1-0-0) | 4(0-3-1) | 1(0-0-1) | 20 |
| | Mobile Space | | 33(15-14-4) | 7(4-3-0) | 2(0-1-1) | 4(3-1-0) | 1(0-0-1) | 3(0-2-1) | 50 |
| Eye contact | Gazing at Individuals | | 8(3-4-1) | 1(0-1-0) | 1(0-0-1) | 2(1-1-0) | 0 | 0 | 12 |
| | Scanning the Whole Class | | 26(15-5-6) | 1(1-0-0) | 6(4-1-1) | 3(3-0-0) | 0 | 0 | 36 |
| | At Others (Books, Blackboard, Screen, etc.) | | 14(5-6-3) | 4(2-2-0) | 4(2-0-2) | 0 | 5(0-3-2) | 4(0-2-2) | 31 |
| Expression | Joy | | 0 | 1(1-0-0) | 4(4-0-0) | 0 | 0 | 0 | 5 |
| | Smile | | 16(11-3-2) | 3(2-1-0) | 1(0-0-1) | 2(1-1-0) | 1 | 0 | 23 |
| | Seriousness | | 0 | 0 | | 1(1-0-0) | 0 | 1 | 2 |
| | Doubt | | 0 | 2(1-1-0) | 0 | 0 | 0 | 0 | 2 |

Firstly, in terms of the paralanguage modality, falling tones are the most commonly used (58.7%), followed by fall-rise tones (30.4%), and intonation nuclie frequently occur (55.7%). The reason for this, as considered in this study, is that falling tones are usually used in declarative sentences, imperative sentences, or sentences expressing certainty. The high-frequency use of falling tones demonstrates the teacher's authority in the classroom. Fall-rise tones often appear in the sentence pattern of "…, right/ok?" and aim to motivate students to think actively and achieve further interaction. Intonation nucleus, as a means of "highlighting", is the strongest stress in a sentence, emphasizing important information or the latest information (Qin Xiaoyi, 2007). Therefore, the use of intonation nucleus can ensure that students grasp the key points of knowledge. In addition, the appropriate use of intonation nucleus can also enhance the expressiveness and appeal, and regulate the classroom atmosphere. For example, in this study, when the teacher is narrating some plots in The Old Man and the Sea, the teacher will appropriately use intonation nucleus to better simulate the real situation and increase the authenticity and sense of urgency of the language.

Secondly, gestures are the most common non-verbal modality in teacher scaffolding, mainly consisting of stress gestures (44%) and symbolic gestures (41.7%). The reason for this result may be that stress gestures can attract students' attention and highlight the teaching key points; while symbolic gestures can present things or processes from a visual perspective, especially in second language or foreign language teaching (Ying Jieqiong, Xie Chaoqun, 2024). This study shows that symbolic gestures representing concrete objects account for 42.9%, and those representing metaphorical concepts account for 57.1%. This is consistent with the research results of Gregersen et al. (2009), Sun Xin and Zhang Dan (2018), and Guo Hongwei and Yang Xueyan (2020), that is, high-level language users tend to use metaphorical gestures to simplify abstract concepts, thus simplifying the teaching content.

Thirdly, in terms of spatial positions, the teacher is often in the mobile space (71.4%), that is, the position when the teacher steps out of the podium area or walks back and forth in the classroom, and occasionally in the authoritative space (28.6%), that is, the position when the teacher stands behind the podium and on both sides of the podium. This may be because when the teacher is in the mobile space, the teacher can better participate in interactions with students and enhance the liveliness of the classroom atmosphere. The less frequent use of the authoritative space reflects the trend of

reducing the traditional teaching mode and encourages student-centered interactive learning.

Fourthly, the teacher's eye movements are flexible in class. The teacher often scans the whole class (45.6%) to maintain order and understand the overall reaction, and occasionally gazes at individuals (15.2%) to establish individual connections. Although the proportion of gazing at individuals is not high, it indicates that the teacher recognizes the importance of interacting with individual students, which helps to promote the active participation and emotional development of individual students.

Fifthly, the teacher's facial expressions are mainly smiling (71.9%). This may be because smiling can convey the teacher's positive attitude and encouragement towards students, which helps to create a relaxed and pleasant learning atmosphere.

In addition, this study also found that there are differences in the multimodal characteristics of the teacher when she focuses on different aspects. Firstly, in terms of intonation, when focusing on the content, the teacher uses falling tones (44.7%) and fall-rise tones (40.4%) to balance authority and interactivity; when focusing on the language, she tends to use more falling tones (64.5%) and fewer fall-rise tones (25.8%), indicating that the teacher places more emphasis on demonstrating authority to ensure that students accurately understand and apply language rules. Secondly, in terms of gestures, when focusing on the content, the teacher frequently uses stress gestures (37.5%) and symbolic gestures (44.6%) to enhance the transmission and understanding of information; when focusing on the language, she relies more on stress gestures (66.7%) rather than symbolic gestures (16.7%). This may be because when teaching language knowledge, such as language structures, grammar rules, or pronunciation skills, stress gestures can effectively guide students to pay attention to the accuracy and details of the language, without the need for excessive visual aids like symbolic gestures.

**4.3 The Coordination of the Meaning of the Teacher's Scaffolding Modes and Scaffolding Language**

Zhang Delu (2015) pointed out that the main reason for multimodal selection is that when one modality cannot fully express meaning, another modality supplements and reinforces it to reflect the overall meaning intended by the speaker. Based on the constructed "Framework of Systemic Functional Multimodal Discourse Analysis" and "Multimodal Discourse Relations", this part analyzes how the paralanguage, gestures, spatial positions, eye contact, and facial expressions of teacher scaffolding coordinate with the pure language modality of scaffolding to construct meaning from three aspects: ideational meaning, interpersonal meaning, and textual meaning. The research results are shown in Table 6.

**Table 6:** The coordinated relationship of teacher scaffolding

| Modalities | | Coordinated Relationship with the Pure Language of Scaffolding | Constructed Meaning |
|---|---|---|---|
| Para-language | Intonation | Complementary and Reinforcing Relationship | Interpersonal Meaning |
| | Speech Rate and Intonation Nucleus | Complementary and Reinforcing Relationship (expansion) | Textual Meaning |
| Gesture | Symbolic Gesture | Complementary and Reinforcing Relationship (primary-secondary) | Ideational and Interpersonal Meaning |
| | Beat and Stress Gestures | Complementary and Reinforcing Relationship (expansion) | Interpersonal and Textual Meaning |
| Spatial Position, Eye Contact and Expressions | | Complementary and Reinforcing Relationship | Interpersonal Meaning |

4.3.1 The Meaning Coordination between Paralanguage and Pure Scaffolding Language

Firstly, in terms of paralanguage, intonation in teacher scaffolding reinforces the interpersonal meaning between the teacher herself and students through different tonal changes. Specifically, falling tones often appear in the scaffolding of "reinforcing key information", conveying the teacher's clear and authoritative attitude. Fall-rise tones are usually paired with sentence patterns such as "…, right?" or "…, ok?", which are extremely effective in classroom interactions and often appear in teacher scaffolding that focuses on content, aiming to encourage students to provide feedback and form an effective two-way communication. The scaffolding of "providing emotional support" appeared 5 times, all in the form of falling tones. Emanuel Schegloff (2013), the founder of the conversation analysis school, stated that affirmative evaluation utterances are mostly declarative sentences with falling tones, such as "Yes!" and "Good job!", which is consistent with the findings of this study.

Secondly, the slowing down of speech rate and the use of intonation nucleus can strengthen the construction of textual meaning. In this study, we found that when the teacher used the teaching scaffolding of "reinforcing key information" in class, the speech rate was slowed down 14 times, and intonation nucleus was used 35 times. This may be because the slowing down of speech rate and the use of intonation nucleus can help students identify and remember important information in the complex language information flow, ensuring that they pay attention to the key knowledge points in the class.

4.3.2 The Meaning Coordination between Gestures and Pure Scaffolding Language

Gestures often appear in the scaffolding of "reinforcing key information", "bridging the information gap", and "guiding self-correction", and work together with the pure language of the scaffolding used to construct the ideational meaning, interpersonal meaning, and textual meaning of teacher scaffolding.

Symbolic gestures often appear in the scaffolding that focuses on content, forming a complementary and reinforcing relationship (primary-secondary) with the scaffolding language. In terms of constructing ideational meaning, for example, when the teacher explains that the teeth of a shark are in a "pyramid shape", the hands will simulate a sharp triangle (Figure a) to enhance students' cognition. As

Atkinson (2011) said, in language teaching, since language itself is embodied, through the guidance of gestures, the meaning of the language materials in the second language can be rooted in the corresponding concepts known in the mother tongue through body movements, especially gestures, serving as a bridge to connect the second language with the first language. In terms of interpersonal meaning, symbolic gestures can also show the speaker's attitude and engagement. For example, the symbolic gesture of stretching out the arms can reflect the speaker's positive attitude. As shown in Figure b, when the teacher gets the expected answer, accompanied by the affirmative verbal marker "yeah", the teacher makes a gesture of raising the arms, indicating agreement with the student's answer. In this study, the attitudes expressed by the teacher's gesture language are mostly positive, which is consistent with the research results of Lim (2017). In addition, the interpersonal meaning of gestures can also be reflected through engagement, that is, the expansion or contraction of the communicative space. Guo Hongwei and Yang Xueyan (2020) pointed out that interrogative sentences can reflect the teacher's willingness to expand the negotiation space. In this study, when the teacher asks questions to guide students through means such as "fill-in-the-blank scaffolding", the teacher will make a gesture of spreading the palms and turning the palms upward (Figure c). This is in line with Hood's (2011) view that the teacher spreading the palms or turning the palms

upward indicates the expansion of the multi-voice space, expressing the teacher's subjective tendency to invite students to participate in communication.

Beat gestures and stress gestures form a complementary and reinforcing relationship (expansion) with the scaffolding language, jointly constructing interpersonal meaning and textual meaning. In terms of interpersonal meaning, beat and stress gestures can be reflected through graduation, that is, the speed. A fast graduation conveys emotions of urgency, eagerness, and initiative (Lim, 2017), while a slow graduation conveys a cautious and emphasizing attitude (Guo Hongwei, Yang Xueyan, 2020). For example, when explaining the verb meaning of "close", the teacher will slow down the speech rate, lower the arms, and slowly make a pushing and hitting motion (Figure d). In terms of textual meaning, stress gestures can highlight the key points, and beat gestures synchronize the body with the rhythm of the speech, helping students perceive the rhythm of the language. The two can supplement the content that has not been expressed or cannot be expressed by the pure language of the scaffolding, that is, they can externalize the speaker's subjective emotions, concretize the prosodic features, and highlight the key parts, which is conducive to the smooth and effective output and reception of language.
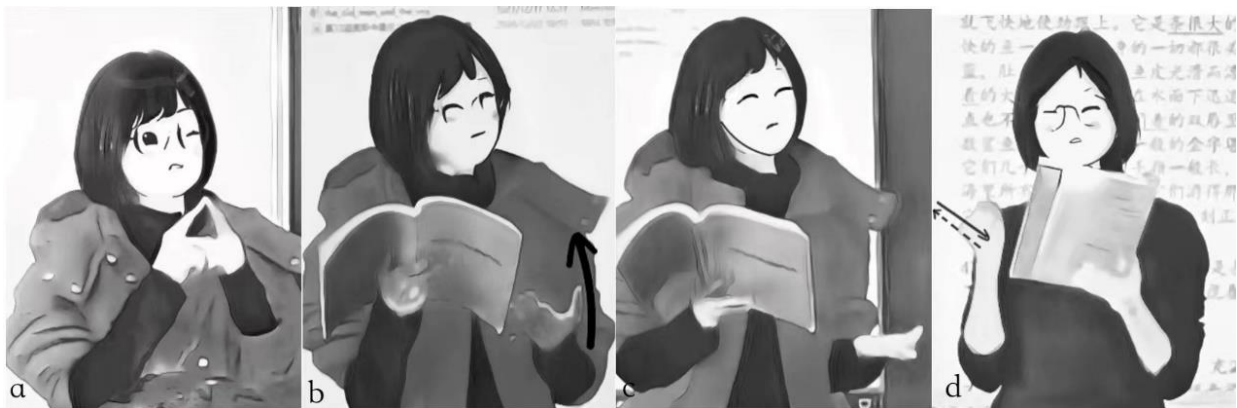


**Figure 1:** Teacher's scaffolding gesture diagram

### 4.3.3 The Meaning Coordination between Spatial Positions, Eye Contact, Facial Expressions and Pure Scaffolding Language

The modalities of spatial positions, eye contact, and facial expressions often serve as secondary modalities to complement and reinforce the pure language of scaffolding, constructing the interpersonal meaning of teacher scaffolding.

This study found that in the classroom, the teacher demonstrated both the affinity for interaction between herself and students and the authority in imparting professional knowledge. When the teacher used teacher scaffolding such as "reinforcing key information", "guiding self-correction", and "simplifying the task", the teacher tended to walk among the students, entering the mobile space, and was more likely to show expressions of joy and smiles. This may be because the teacher hoped to mobilize students' enthusiasm for answering questions by showing affinity and strive to expand the subjective willingness of the interaction space between herself and students. Conversely, when the teacher provided the scaffolding of "bridging the information gap", the teacher

consciously stood in the authoritative space to highlight the authority and professionalism in teaching new knowledge.

In addition, in the scaffolding of "reinforcing key information" and "bridging the information gap", the teacher's eye contact was also very flexible. The teacher often scanned the whole class and occasionally gazed at individuals. These two eye contact strategies are tools used by the teacher to optimize information delivery and enhance student engagement. Together, they create an interactive and inclusive learning environment where every student feels seen and heard, thus complementing and reinforcing the interpersonal meaning of teacher scaffolding.

## 5. Conclusion

This study applied the constructed the "Systemic Functional Multimodal Discourse Analysis Framework" to investigate the multimodal coordinated relationships of teacher scaffolding in CLI comprehensive English classrooms. The study found that the teacher uses teacher scaffolding with multimodal characteristics to help students understand

knowledge. The modalities of paralanguage, gestures, spatial positions, eye contact, and facial expressions often form a primary-secondary relationship with the pure language modality of scaffolding, followed by an expansion relationship, complementing and reinforcing the ideational meaning, interpersonal meaning, and textual meaning presented in the classroom. This study shows that teachers are not only transmitters of knowledge but also guides in the learning process. By constructing scaffolding with the coordination of multiple modalities, teachers can create an interactive and dynamic learning environment. However, this study also has certain limitations. Since the sample is limited to one teaching practice of one teacher, it cannot comprehensively reflect the multimodal characteristics of teacher scaffolding and the relationships between modalities among CLI foreign language teachers. Future research can expand the sample range to investigate how teachers with different backgrounds and experiences construct scaffolding for teaching and its impact on different learner groups.

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