



## Research Article



# Exploring the Role of Multimodal Metaphor through Gestures in Middle School English Education

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### ABSTRACT

**Introduction:** As scholarly interest in metaphorical gestures has burgeoned in recent years, the exploration of these non-verbal communicative cues has primarily centered on domains, such as speeches, advertisements, and movies. Surprisingly, there exists a notable dearth of research specifically delving into the nuanced role of metaphorical gestures within the realm of English teaching, especially in middle school settings. This study sought to address this gap by strategically selecting two nationally recognized English courses taught in middle school English classrooms. The study aimed to explore the role of multimodal metaphors in gestures and provide some inspiration for middle school English teachers.

**Methodology:** In this research, two videos from National Excellent Courses were selected for analysis using a multimodal annotation tool, namely EUDICO Linguistic Annotator (ELAN). The course selected was the middle school English teaching design course, and the students involved were from Beijing Normal University, China. All gestures analyzed were classified into three types of metaphors, namely ontological, structural, and orientational.

**Results:** The findings indicated that ontological metaphors occurred most frequently, followed by orientational metaphors, with structural metaphors being the least frequent. This research demonstrated the cognitive process of conceptual metaphor in classroom gestures with concrete examples.

**Conclusion:** In contemporary middle school English classrooms, relying solely on textual material is insufficient for fully supporting the teaching process. This study substantiates that employing multimodal metaphors in gestures can enhance teachers' ability to motivate students effectively and facilitate improved interaction and semantic communication. The study provides English teachers with valuable guidance on implementing multimodal teaching strategies utilizing metaphorical gestures.

## 1. Introduction

Gesture, as a part of English teachers' discourse, is an explicit window to show teachers' thinking process along with the spontaneous gesture of teachers' spoken language. Compared with other non-linguistic modes, gestures have always received much attention from scholars. Forceville (2009) expanded the research on metaphor to multiple modes, such as advertisements, political cartoons, movies, gestures, and many other modes. Mittelberg and Waugh

(2009) pointed out that gestures can also present conceptual metaphors that language does not convey. Therefore, many studies have been conducted to examine metaphors through gestures. In the field of second language teaching, Li and Jiang (2018) explored the gesture representation model of affective metaphor in Chinese native speakers. They found that Chinese native speakers largely relied on spatial metaphors in verbal expressions

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and gestures to talk about emotions. According to Guo and Yang (2020), the organic combination of teachers' metadiscourse and gestures supplements and strengthens the meaning expressed by a single mode, which realizes semantic cohesion and builds intersymbol text structure. Furthermore, gestures can facilitate the learning of abstract vocabulary by leveraging metonymies and conceptual metaphors to symbolically represent abstract concepts (Rodríguez-Cuadrado et al., 2023). It is believed that gestures supplement some of the metaphorical thinking patterns that are not present in the language, and reveal the metaphorical thinking patterns that cannot be inferred from the language (Casasanto & Jasmin, 2012; Cohen et al., 2011; Wu & Tong, 2022).

Despite this extensive research, the depth of inquiry into gestures in China remains insufficient. There is a notable gap in understanding the role of gestures in educational contexts, particularly within middle school classrooms. Therefore, this study aims to address this gap by integrating Forceville's (2009) multimodal metaphor theory with Lakoff and Johnson's (2008) classification of metaphor. It will analyze two prominent national courses using the ELAN multimodal annotation tool, thereby contributing to a deeper understanding of the role of gestures in English teaching contexts.

### **1.1. Multimodal metaphors**

The traditional language theory referred to metaphor as only a poetic expression that floats on the linguistic level. However, Lakoff and Johnson (2008) introduced the conceptual metaphor theory from a cognitive standpoint, proposing that metaphor permeates all facets of life and is an innate and habitual cognitive process for humans. Forceville (2002) advanced the conceptualization of image metaphors to a higher conceptual level, employing interaction theory to elucidate their composition and classification. Since then, Forceville (2002), as the leading scholar, with a group of others devoted to the expanded metaphor research, transitioned from a focus solely on linguistics to an interdisciplinary multimodal research framework. Forceville (2002) defined modality as a symbol system utilizing various senses to construct meaning, asserting that, beyond written symbols, images, oral symbols, gestures, sounds, music, smells, tastes, and tactile sensations all contribute to meaning construction. Monomodal metaphors typically encompass text and image metaphors. Multimodal metaphors, on the other hand, can be broadly or narrowly classified. In the narrow sense, they refer to metaphors represented separately by different modes in the source and target domains. In the broader sense, multimodal metaphors involve the participation of more than two modes (Eggertsson & Forceville, 2009; Zhao Xiufeng, 2011).

Therefore, multimodal metaphor refers to the metaphors represented by different modes in the source domain and target domain, for instance, the speech-image metaphor (Forceville, 2002) and the speech-gesture metaphor (Muller 2004, 2009). Forceville (2009) confirmed the idea of image metaphors and multimodal metaphors by

studying metaphors in categories, such as advertising, comics, and movies, and extending metaphor research to the scope of multimodal discourse research. Forceville and Urios-Aparisi (2009) collected the latest results of multimodal metaphor research in different fields, such as advertising, caricature, movies, and music, marking the forming of multimodal metaphor theory.

Studies on multimodal metaphors are developed at a fast speed. According to Zhao (2011), in the late 20th century, the trend of interdisciplinary research promoted the study of multimodal metaphors in various humanities disciplines, such as cognitive science and linguistics, cognitive linguistics, and sociology. The studies began to shift focus from language text to multimodal discourse in which language is only part of the modes of communication. After entering the 21st century, information technology has pushed the multimodal of human communication to the extreme. Many symbols were interwoven together aiming to fully mobilize the coordination of the senses in transmitting messages and conveying feelings. In this era, visual perception was endowed with perceptual privilege over words, and under the impact of heterogeneous sensory symbols, the symbol monopoly of words in the expression of meaning was gradually weakened (Zhao Xiufeng, 2011). Research mostly focuses on fields of art (Poppi et al., 2020), cartoon (Tsakona, 2009), and environment (Meijers, Remmelswaal & Wonneberger, 2019). Later, the research emphasis shifted relatively more to the study of the metaphorical abilities of second language learners (Ibáñez & Bort-Mir, 2020; Xu et al., 2022; Umino, 2023). Nowadays, one of the tasks of multimodal metaphor scholars is to theorize how the construction of conceptual metaphor and the mutual relations between the source domain, target domain, and mapping term are transformed into the non-verbal environment (Tay, 2017: 99).

In China, multimodal metaphor research has entered a stage of vigorous development, and the research field has also shifted from static multimodal metaphor to dynamic multimodal metaphor. Drawing from the findings of Forceville and Urios-Aparisi (2009), scholars have predominantly focused their studies on multimodal metaphors within the realms of movies, advertisements, and political cartoons (Wang & Gan, 2015; Wang & Xiang, 2016). However, the domestic research on multimodal metaphor is mainly applied research. The rich theoretical resources and multiple research methods of cognitive linguistics need to be further explored to deepen the theoretical research on multimodal metaphor and optimize the research methods (Liu & Wang, 2021).

### **1.2. Gesture studies**

Cienki (2008) offered a broad definition of gesture as encompassing any intentional bodily movement. Furthermore, Cienki (1998) identified five distinct methods for metaphorically illustrating the relationship between speech and gesture. These include scenarios where verbal and gesture metaphors share both source and target domains, cases where verbal metaphors are accompanied

by gesture metaphors with different origins for the source domain but a shared target domain, instances where verbal metaphors are paired with non-metaphorical or minimally metaphorical gestures, situations where verbal metaphors lack accompanying gestures altogether, and finally, occurrences where non-verbal metaphors are expressed through metaphorical gestures.

Gestures have received little attention from linguists, often deemed as simplicity and spontaneity. However, the emergence of cognitive linguistics significantly propelled research on gestures. In the 1980s, the study of metaphors initially shifted its focus towards gestures. McNeill (1992) investigated the relationship between gestures, language, and cognition, categorizing gestures into four main types, namely iconics, deictics, beats, and metaphors. Metaphors refer to those gestures that express abstract concepts with gestures and can explain the source domain. From the viewpoint of Muller (2004), both metaphoric and iconic gestures belong to iconic signs, and the difference is whether they are describing the referent itself or the referent of another entity, related action (the abstract reference).

With the rise of conceptual metaphor and multimodal metaphor theory, the metaphorical mechanism of gesture has attracted more and more attention. Cienki and Müller (2008) analyzed the relationship between gesture and metaphor. At present, many scholars in China have begun to realize the great significance of gestures in conceptual metaphor research. Domestically, research has been conducted on English speech (Jiang & Wang, 2013) and teacher discourse (Guo & Yang, 2020). Shu Dingfang (2012) pointed out that gesture research can provide some data in the field of vision, which can inspire the cognitive structure and conceptualization of language. Sun and Zhang (2018) counted the rate and the type of gestures used by Chinese learners of English. They found that the more high-proficiency learners used significantly more gestures than their low-proficiency counterparts, especially in iconics and metaphors.

### **1.3. Metaphorical gestures in English teaching**

Gestures occur synchronously with language, offering additional layers of meaning for language users. Within educational contexts, gestures play a crucial role in guiding and elucidating concepts. As outlined by Gullberg (2008), gestures encompass both communicative and psychological dimensions, which are integral aspects of second language acquisition theory. These two aspects enable learners to gain a better understanding and mastery of English learning, complementary to utterances. Native speakers can receive the information that second language learners try to convey successfully regardless of mistakes made in pronunciation or grammar. Gestures are important in instruction and explanation in English classrooms. As Mehrabian (1971) claimed, teachers who resort to gestures tend to act more amicable and motivate more interaction in class. Those gestures used by teachers during class time usually have links with particular contexts and reinforce the process of

input and understanding, facilitating language acquisition. In contrast to conventional language teaching methods, gestures concretize and externalize abstract thinking, promote the connection between language and concrete things, and the transmission of metaphorical concepts (Macedonia & Kriegstein, 2012; Roth & Lawless, 2002). Meanwhile, it can supplement and strengthen the input of language information, enrich semantic information as well as improve the efficiency of English teaching to a certain extent (Le & Gonzales, 2012; McCafferty, 2002). Lim (2019) introduced parameters for coding gestures based on both their form and function in a study examining teachers' utilization of gestures in the classroom. He categorized gestures into two main types, namely performative and communicative. The research underscored the significant impact of teachers' diverse gestural repertoire on students' classroom experiences, thereby fostering effective teaching and learning environments.

Scholars in China have shown relatively less interest in gesture studies within English teaching, often focusing primarily on categorizing types of gestures rather than exploring their broader impact and influence. Furthermore, research aiming at relationships between metaphorical gestures and English teaching remains uncommon. Guo and Yang (2020) analyzed the relationship between metadiscourse and gestures of English teachers in class. According to their visual analysis results, metaphorical gestures appeared most frequently in the instruction of words and questions, corroborating findings by Sun and Zhang (2018). They also found high-level speakers and learners used more metaphorical gestures. In particular, when they expressed abstract concepts, they used metaphorical gestures to complete them, concretize the abstract concepts, and simplify the teaching content. In addition, teachers tended to combine language and metaphorical gestures to supplement and strengthen the meaning expressed by a single mode, to realize semantic cohesion, and to construct a multimodal discourse structure. However, a study focused on English listening teaching proved that gestures played a greater role in promoting listening comprehension of low-level students (Zhong & Gao, 2018). As low-level students had limited ability to decode verbal information, they were more active in capturing the information presented by gestures to promote the decoding of metaphorical speech information.

By combining gestures with metaphor, the current study aimed to uncover the metaphorical meanings conveyed through gestures and investigated the metaphorical impact transmitted from teachers to students. Ultimately, the goal was to encourage teachers to utilize gestures effectively to enhance students' comprehension and interaction in middle school English classes. Accordingly, this study intended to analyze the metaphorical gestures performed by an English language teacher in middle school to answer the following questions:

(1) What are the types and distributions of multimodal metaphorical gestures?

(2) How do gestures manifest different kinds of multimodal metaphors and construct meaning?

## 2. Methodology

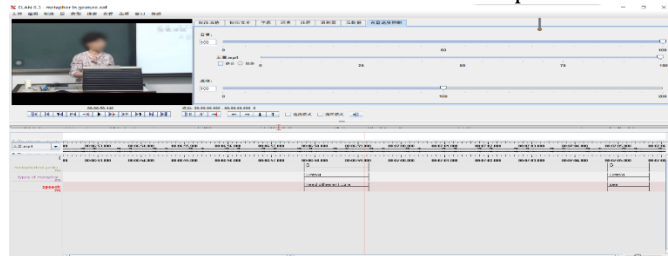
### 2.1. Corpus

The research objects were selected from the Massive Open Online Courses (MOOC), which provides quality course resources for the whole society for public use. All pictures involved in the study were mosaicked for use, ensuring that ethical considerations and consent for the publication of pictures were upheld. In addition, the videos selected also belonged to the National Exquisite Curriculum. The National Exquisite Curriculum represents a benchmark curriculum distinguished by first-class staff, first-class teaching content, first-class teaching methods, and teaching materials. Tailored for educators, students in higher education institutions, and lifelong learners, its primary goal is to enhance teaching and learning outcomes, foster educational innovation, and elevate the overall quality of education. The instructor for this course boasted over two decades of experience in English teaching and teacher education research. Having actively contributed to the development of the new English curriculum standards set by the Ministry of Education, she prioritized the cultivation of students' practical and innovative abilities through dynamic teaching methods. Her instructional videos served as exemplars, offering inspiration and practical guidance, and were highly recommended for repeated viewing, analysis, and learning.

### 2.2. Research instrumentation

Analyzing multimodal discourse corpora presents a greater level of complexity and difficulty compared to single-language corpora due to the intricacies involved in interpreting meaning generation across multiple modalities. Therefore, the utilization of specialized multimodal analysis software specifically designed for processing multimedia data became imperative for this research endeavor. Such software is essential to facilitate statistical analysis and enhance the scientific accuracy of the research findings. In this study, the ELAN 6.3 multimodal annotation tool was used to transcribe and annotate the corpus to carry out empirical research. ELAN is a visual linguistic annotation tool developed by Max Planck Institute of Linguistics and Psychology Netherlands, performing simultaneous annotation processing, analysis, statistics, and retrieval of video and audio data. It is designed to provide sound technology for identifiers and the development and utilization of multimedia clips. ELAN specializes in language, sign language, and gesture analysis. With ELAN, the researchers could add an unlimited number of text annotations to audio and/or video recordings, which can be a sentence or word of any feature observed in the media. ELAN software is used in foreign language teaching to mark the culture and stylistic style of specialized fields in film and television works. The procedures in this study were as follows. Firstly, the two videos of MOOC were

collected, and the total lengths were 17m15s and 11m05s. Videos were then imported into



**Figure 1.**  
*The Working Page of ELAN 6.3*

ELAN. The speech layer, gesture layer, and types of metaphor layer were created to make annotations. Finally, the total times and durations of each type were summarized. Its working interface is shown in Figure 1.

### 2.3. Framework for gesture identification

Metaphorical gestures in teachers' classroom discourse were categorized as ontological, orientational, and structural metaphors, aligning with the classification framework proposed by Lakoff and Johnson (2008). Ontological metaphors ground abstract concepts in concrete terms, such as "argument is war." Orientational metaphors use spatial relationships to convey abstract ideas, like "happy is up." Structural metaphors highlight underlying similarities between different concepts, as seen in "time is money." These classifications illustrate how metaphorical thinking shapes language and our understanding of the world. Lakoff and Johnson (2008) pointed out that metaphor belongs not only to language but also to thought and activity, and that their conceptual system is metaphorical to a large extent.

Annotations were created by the speech layer, gesture layer, and types of metaphor layer. A metaphorical gesture and the speech that occurred at the same moment were annotated synchronously. The segmentation of the videos was carried out according to the completion of a complete gesture, and each gesture was planned as an action from preparation, gesture to withdrawal. Firstly, ontological metaphors employed concrete objects as the source domain to describe abstract concepts, the target domain. When abstract concepts were mentioned in the teacher's language alongside gestures representing concrete objects, they were identified as ontological metaphors. Secondly, orientational metaphors utilized spatial experiences from daily life, such as in-out and up-down, to depict abstract states, time, or mood. When the teacher's language included words indicating locality that did not describe real directions or actions, while their gestures demonstrated physical movement in space, it constituted an orientational metaphor. Thirdly, in structural metaphors, gestures depicted concrete actions or behaviors from another domain to describe abstract events expressed by the teacher. Although the source domain was not explicitly mentioned in speech, the gesture constructed it by describing a specific object. Based on this framework, identification was conducted,

and the respective times and frequencies of each metaphor were determined.

### 3. Results and Discussion

#### 3.1. Types and distributions of multimodal metaphorical gesture

This study focused on analyzing multimodal metaphor of gestures, based on conceptual metaphor in cognitive linguistics. According to Lakoff and Johnson (2009), metaphorical gestures in teachers' multimodal classroom discourse are divided into three types, namely ontological metaphor, structural metaphor, and orientational metaphor. Accordingly, annotations were appended following the three types. According to Elan's annotating results, the teacher used a total of 113 metaphorical gestures in the two teaching videos. Ontological metaphor was the most frequently used, 69 times, accounting for 61.1%. The second was an orientational metaphor, a total of 28 times, accounting for 24.8%. The structural metaphor was the least used, 16 times, accounting for 14.1%. In addition, the statistical results of the types of metaphorical gestures used in the two videos are consistent with the total results. Specific data are shown in Table 1.

**Table 1.**  
*Multimodal Metaphorical Types Distribution of Gestures in English Teaching Classroom*

Metaphorical gesture type	Ontological metaphor	Structural metaphor	Orientation metaphor	Total
Video A				
Times	41	9	19	69
Frequency	59.42%	13.04%	27.54%	100%
Duration(s)	62.48	17.4	21.84	101.72
Video B				
Time	28	7	9	44
Frequency	63.64%	15.91%	20.45%	100%
Duration(s)	47.9	8.35	13.25	69.5

#### 3.2. Manifestation of metaphorical gestures

##### 3.2.1. Ontological metaphor

Human experiences with physical objects provide the basis for viewing events, activities, and ideas as entities and substances (Lakoff & Johnson, 2008; Yang, 2005). In middle school English teaching, when there was an abstract concept in the language, the teacher made a gesture to represent a specific thing for explanation at the same time. With the help of gestures, students could make metaphorical associations according to their daily experience analogy and understand abstract concepts better. For example, in Figure 2 the teacher said "If you think about the role of parents", at that time she made a gesture of holding something in her hands. This gesture occurred together with the word "role". To describe the word, the teacher acted like holding something physical so that students could imagine a concrete object representing the detailed role. The phenomenon was similar in both Figures 3 and 4. In Figure 3, when the

teacher said "the time for sunshine", she gesticulated



**Figure 2.**  
*Role is an Entity*

a circle accompanied by the word "time". It seemed that an intangible thing was transformed into a physical object with a certain size and boundary. Similarly, the word "command" was expressed by a gesture of two palms facing each other inward in Figure 4. The metaphor behind them is ROLE/TIME/COMMAND IS AN ENTITY.



**Figure 3.**  
*Time is an Entity*

There is a very common type of ontological metaphor called a container (Lakoff & Johnson, 2008), where people's experience of non-physical phenomena is described in terms of simple physical objects like substances and containers, such as the example in Figure 5. When the teacher said "See all the flowers", her hands stretched outward to depict the visual field behind the verb "see". The visual field, an abstract concept, is often conceived as a container to be easy to understand and describe.

Similar to the study conducted by Zhang (2020), the ontological metaphor was the most frequently used in teachers' teaching. Gesture, as the source domain, activates learner perception and highlights key contents

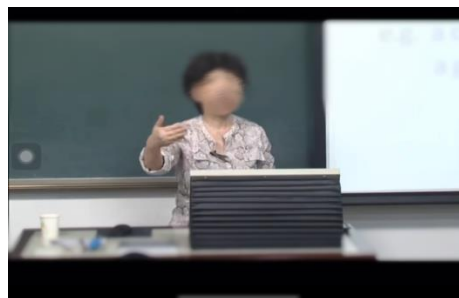


**Figure 4.**  
*Command is an Entity*





**Figure 5.**  
*Visual field is a Container*



**Figure 7.**  
*Difficulty is Barrier*

in the discourse through metaphor mapping, which plays a "support" role for students to understand the teaching content (Alibali & Nathan, 2014). The abstract concepts being represented are target domains.

### 3.2.2. Structural metaphor

Structural metaphor plays the most important role as it enables the exploration beyond orientation and referring and gives us the possibility to structure one concept according to another (Lakoff & Johnson, 2008; Yang, 2005). Structural metaphor can be deemed as the further expansion of ontological metaphor and orientational metaphor, and its origin domain is clearer, more clearly defined, and richer in content. The following examples illustrate the use of this type of gesture metaphor. In Figure 6, when the teacher said "bridging the gap", she used her hands to construct a horizontal bridge. By performing this gesture, what she tried to convey was the function of teachers that connect themselves and students just the same as the function of a bridge. This metaphor is CONNECTING IS BRIDGING with the action of connecting as the target domain and the bridge as the source domain. Therefore, with the help of this metaphorical gesture, it will be easier and more understandable for students to comprehend what the teacher intended to express. Another example is shown in Figure 7. As the teacher said "Go across difficulties", her hand moved over an intangible obstacle to the front which represented the metaphor DIFFICULTY IS BARRIER. The gesture of crossing is a metaphor for a barrier based on interactions with the world. Such gestures are associated with people's daily experience with another familiar physical concept so they are frequently used in English teaching, making expressions vivid and concrete to be realized in terms of the

projection of other specific concepts (Jiang & Wang, 2013; Zhang, 2020). In this way, many descriptions and expressions can be applied and transformed between two scopes of context.

### 3.2.3. Orientational metaphor

Orientational metaphor enables speakers to make a set of target concepts coherent using some basic human spatial orientation, such as up-down, in-out, center-periphery, and so on (Lakoff & Johnson, 2008; Yang, 2005). The projections are made on some specific orientation on the foundation of spatial concept. Taking the up-down domain as the origin domain and the target domain as emotion forms the conceptual metaphor "HAPPY IS UP & SAD IS DOWN". Social status and rights can also be explained by the concept of location. High social status and great power are up, and vice versa (Yang, 2005). Gestures can be used together with different spaces to get a better understanding. In this study, gestures of orientational metaphor mainly involve up and down, front and back, with the reference to emotion, and time as target domain. For instance, the teacher said "Teachers would support you" with the gesture of raising her hand. This metaphor is SUPPORT IS UP, which may be produced according to people's spatial experience that once a person is supported by others, he or she reaches a higher status, an expression of state. There is also a front-back metaphor shown in Figure 9. It is admitted that something unseen is far away behind while those obvious things are being closed (Chen, 2018). Based on this kind of fact, the teacher put her hands backward to describe the character of a director who was not going to show up on the stage but stayed behind the screen and would not be noticed by the audience. This metaphor is named UNSEEN IS BACK. The orientational



**Figure 6.**  
*Connecting is Bridging*



**Figure 8.**  
*Support is up*



**Figure 9.**  
*Unseen is Back*

metaphor makes full use of daily spatial experience, manifesting intangible concepts such as emotional, mental, or behavioral states and changing them into tangible ones. It provides a thorough understanding of language the experience and the world around us (Yang, 2005; Zhang, 2020).

### **3.3. Meaning construction of metaphorical gestures**

In the teacher's multimodal classroom, the metaphorical meaning of gesture was constructed in collaboration with speech modes. The gesture and speech were viewed as a whole construction to be analyzed without taking the separate and independent meaning of gesture into consideration. Gestures can construct meaning beyond the language. Likewise, Calbris (2011) indicated that gesture and speech are seen as twin products of an embodied mind and gestures are determined by the speech that accompanies them. On the other hand, the discourse may influence the choice of source domain and the application of metaphorical gestures (Peng & He, 2018). The same gesture may be used to represent amounts of target domains. According to the context, the teacher used gesture and speech to represent the same metaphor, to construct metaphorical meaning more vividly and effectively. Gestures have provided a kind of visual stimulation, making abstract concepts vivid, concrete and intuitive. It can activate the metaphorical cognitive association of students in an instant. Furthermore, metaphorical gestures can strengthen, supplement and highlight the key points of speech modes.

In addition, this study demonstrated the significant role of gestures in a teacher's performance. Gesture is an important element of teaching. The metaphorical meaning behind gestures can become important interactional resources for instruction in English classrooms. Likewise, Matsumoto and Dobs (2017) have also found metaphorical gestures were repeatedly used by both teachers and students in teaching and learning grammar. Furthermore, gestures can convey emotion, promote communication and produce a good classroom teaching effect (Wu, 2022). The teacher's gestures conveyed positive attitudes such as praise, identification, and permission, which reflected the subjective tendency of the teacher to expand interaction and encourage students to participate in interaction. The current study

did not indicate the use of gestures for negative emotions like rejection, prevention, and criticism. More importantly, students can effectively use gestures to demonstrate their understanding of temporal concepts and to construct interactional alignments with their teachers. Repetto et al. (2017) found that using gestures activated motor trajectories in the brain and improved second language learning of abstract words. While some research has found that metaphorical gestures had no significant effect on second language learning (Wu & Niu, 2023). However, it needs to be further verified. In the future, it is necessary to expand the sample size to study the different functions and effects of metaphorical gestures. Moreover, other multimodal modes like the facial expressions of teachers can be studied jointly.

## **4. Conclusion**

This study classified and analyzed the multimodal metaphor of gestures in middle school English teaching from three types: ontological metaphor, orientational metaphor, and structural metaphor. It demonstrated the cognitive process of conceptual metaphor in classroom gestures with concrete examples and generalized the meaning construction of metaphorical gestures. At the same time, it provides a reference for English teachers to carry out multimodal teaching with metaphorical gestures. It can have practical implications for further multimodal metaphor research and gesture research. This field would be a fruitful area for further work, as well as an intriguing one that could be thoroughly explored in empirical studies to promote English teaching to some extent.

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### **Competing interest**

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### **Authors' contributions**

Both authors have contributed equally while conducting the research and preparing the manuscript. All authors have read and approved the final manuscript.

### **Availability of data and materials**

The manuscript contains all datasets generated and/or analyzed in the current study.

### **Ethical considerations**

Ethical issues (including plagiarism, consent to publish,

misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancy) have been checked and compiled by the authors.

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