

CHAPTER III

RESEARCH METHODOLOGY

This chapter discusses the research methodology, which consists of the explanation of the research design, research site and participants, data collection, procedures, and data analysis. The research design elaborates on the approach of the study. The research site describes the setting and context where the research takes place. The participants refer to the participants involved in this study. The data collection provides information about types of data and the procedure of collecting data. The research procedures present the stages of the study. The data analysis presents the procedure for investigating the data. To remind the objective of this study starts with the research problem.

3.1 Research Design

The purpose of this study is related to the investigation of the following research questions: (1) How did the visual images and the verbal text work together to construct the ideational, interpersonal, and textual meaning of learning resources utilized by an English teacher in a junior high school?; (2) How did the teacher utilize the visual and verbal metalanguage in teaching English with multimodal resources?; (3) How did the teacher verbal instruction in teaching with multimodal resources differ following the instructional coaching?

To address the research questions, this study employed a qualitative design with the application of the Systemic Functional Approach to Multimodal Discourse Analysis (SF-MDA). The SF-MDA rooted in social semiotics, focuses on the "Grammatics" of semiotic resources and aims to understand the meanings of individual resources as well as the meanings that emerge through their multimodal combination (O'Halloran & Fei, 2014). The SF-MDA draws inspiration from Halliday's social theory, which posits that the organization of semiotic resources reflects their social function(O'Halloran, 2008; O'Halloran & Fei, 2014).

A key concept within the SF-MDA is the "systemic" view, derived from Halliday's work, which recognizes that social systems and modes of cultural behavior are interconnected systems of meaning. In the context of multimodal semiotic resources, this implies that the relationship between these resources and society is

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constructed through contextual factors. Furthermore, the systemic view emphasizes that the selection of multimodal texts involves making choices from a pool of "paradigmatic choices" (O'Halloran & Fei, 2014).

The SF-MDA adopts Halliday's metafunctional principles as theoretical tools to comprehend how semiotic resources create meaning (O'Halloran, 2008). Scholars have applied this approach to integrate various semiotic resources such as multimodal texts, printed pages, and film texts (Baldry & Thibault, 2006), visual images (Kress & Leeuwen, 2006, 2020), speech, music, and sound (Leeuwen, 1999).

Several justifications support the use of SF-MDA in this study. Firstly, it is well-suited for analyzing phenomena in multimodal texts, including 2D text (printed or electronic) and 3D texts such as museum exhibits (O'Halloran & Fei, 2014). Another rationale is that the metafunctional principle in SF-MDA provides a foundation for analyzing how verbal and visual semiotic choices interact to fulfill the social function of a text (Jewitt et al., 2016). Furthermore, researchers have recommended SF-MDA due to its applicability in analyzing multimodal texts (Damayanti, 2014; Hermawan & Rahyono, 2019; Hermawan & Sukyadi, 2017; Jauhara et al., 2021; Liu & Qu, 2014; Nur'graha & Hermawan, 2020; Sugianto, 2021; Sugianto et al., 2021, 2022).

In this study, the aim was to investigate the meaning-making process of visual images and verbal texts in an English teacher's learning resources. Selected visual and verbal elements of these resources were analyzed in terms of ideational meaning. The interaction between verbal text and visual image will be examined using the frameworks of Systemic Functional Grammar (SFL) (Eggins, 2004; Gerot & Wignell, 1995; Halliday & Matthiessen, 2004; Thompson, 2014), the Grammar of Visual Design (Kress & Leeuwen, 2006, 2020), and text language intersection (Unsworth, 2006).

3.2 Research Site and Participants

The participant selected for this study was an experienced English teacher at an Islamic-integrated junior high school in West Java. The teacher participant has been teaching in the Islamic junior high school for over a decade. Notably, the teacher has actively engaged in a comprehensive six-month teacher development program (*PPG*

dalam Jabatan) orchestrated by Indonesia's government ministry, a testament to her dedication to enhancing her pedagogical expertise. However, it is noteworthy to acknowledge that the teacher development program did not facilitate the participant the theory and pedagogy of multimodal texts, an aspect that emerged during the preliminary observations. Notwithstanding this, the initial observations unveiled a consistent practice wherein the teacher adeptly incorporated multimodal texts sourced from the student textbook into her instructional methodologies. These observations further illuminated the teacher's conscientiousness towards the presence of multimodal texts within her teaching framework, as she frequently delved into these diverse texts, encouraging her students to similarly engage with them. Intriguingly, despite her proficiency in leveraging multimodal texts, the teacher appeared to possess limited familiarity with visual and verbal metalanguage, an aspect that serves as an interesting focus within the context of this research endeavor.

In relation to research site, the teacher's teachings were observed in two classes. The classes taught used textbook, "*New Frontiers 3A*". This book was an international textbook designed for pre-intermediate students (A2 CEFR). The textbook was facilitated with multimodal resources, such as images, verbal texts, audios, and videos. The audios and videos were also accessed by the students by the codes or website links attached. Therefore, this research context supported to meet one of the newest curriculum's goals, that students are able to communicate with multimodal texts.

Given the participant's educational background and research site, the researcher was confident that the participant's involvement would provide substantial and relevant information for the study. This aligns with Creswell's (2009) assertion that qualitative research places emphasis on the quality of the participant selection, recognizing the significance of individuals who can offer rich and meaningful insights into the research topic.

3.3 Data Collection

The data collection process encompassed various sources, including recorded teaching sessions, multimodal learning resources, and observations. First, teachings

were purposively recorded by the teacher for her development programs. There were 4 recorded teachings collected in this phase prior to the research interventions. The first recording was a video of teaching that lasted for 51 minutes. In this recording, the teaching's objective was students were able to write a greeting card. This recording indicates the teaching started with the review of the class' previous lesson, asking and giving directions based on the map. This lesson review lasted for eight minutes. This review also indicated that teacher use a multimodal text. The second recorded teaching video lasted for 43 minutes. The second recorded teaching's objective was to help students able to write a procedure text relate a food recipe. In this recording, the teacher spent seven minutes to teach multimodal texts related to types of food made of an egg. The third teaching was recorded in 35 minutes. Like the second recording, the third teaching did share the same objective, which aimed to help the students write multimodal text related to food theme. However, in this part, the use of multimodal texts was not significantly demonstrated by the teacher as she focused on the activities for writing a procedure text.

The second data collection is the multimodal learning resources which refer to the texts employed by the teacher during the observations, comprising visual and verbal elements. Specifically, four multimodal texts were utilized, each of which contained visual and verbal components. The multimodal texts were labeled as multimodal texts 1, 2, 3, and 4. In the teaching, the participant modified them into digital texts using *peardeck application*. This enabled the students to access the texts in their gadget and encourage students' online collaboration in doing some tasks related to the texts, such as labelling, matching, and posting words or phrases. However, the reseracher decided to focus on analysis the static multimodal texts rather than the modification aspects of the texts. The decision to utilize multimodal texts as the document analysis was based on its feasibility, cost-effectiveness, and manageability (Hull & Nelson, 2005). Moreover, the SF MDA approach is well-suited for micro-analyzing selected fragments of texts (Jewitt et al., 2016). Several previous studies have also employed SF MDA to analyze specific sections of texts, such as (1) Jauhara, Emilia, and Lukmana (2021), investigating a selected page focusing on greetings; (2) Sugianto (2021), examining a page discussing deforestation; (3) Liu and

Qu (2014), who studied multiple pages from two textbooks under the same topic; (4) Sugianto, Prasetyo, and Asti (2022), exploring a page from an EFL textbook addressing communication; and (5) Royce (2007), investigating a page from a magazine.

Table 3. 1 Document of data collection

Documents	Stage of data collection
Multimodal text 1	Observation 1
Multimodal text 2	Observation 2
Multimodal text 3	Observation 3
Multimodal text 4	Observation 4

Finally, the data collection is the transcriptions of teacher's instructions during observations. The verbal elements of relevant segments from the recorded videos were analyzed using the transitivity and MOOD system within the framework of SFL using SF MDA.

3.4 Procedures

Regarding the data collection, there were several procedures for data collection. First, the researcher asked for the participant's consent to be the participant in this research. This was done by informing the participant the purpose of the research.

Secondly, the researcher did the preliminary observation. The class observed was an online class that used *Zoom meeting conference*. At this time, the school still applied synchronous online meeting due to pandemic COVID-19 outbreak, where synchronous online class was suggested by the government. This preliminary observation revealed that the teacher actively used visual and verbal sources in her teaching. It was observed through the materials presented. Some learning resources were taken from students' textbook. In addition to the learning resources, the teacher was also observed to reconstruct the learning resources by integrating the resources (visual and verbal) with several technology, such as *Peardeck* application. This allowed her students to engage with the learning resources real-time. Not only did the student access the learning resources that the teacher presented during the online class,

but they were also able to do some tasks collaboratively, such as labeling, writing words, and communicating with the provided features on the app. This preliminary observation was then followed by a nonformal-online interview to check how the teacher reconstructed the learning resources and why she intended to do it. This interview informed the researcher that the participant used to employ various sources, such as textbooks, website pages. In addition, she also usually integrated the texts taken from textbook so that her students could engage with the activities. This way, the teacher also found that she could record the students work effectively.

Following the preliminary observation, the researcher was seeking teacher participant' consent to record her teachings. The participant agreed to record her classes for several meetings. The researcher and participant agreed that the recordings would be for the research interest and thus her confidentiality would not be published. The teacher finally took three weeks to record some of her teachings.

There were three teaching recordings submitted. Two of the recordings were conducted and recorded via *Zoom*. At the time, the school was holding online meeting due to the government suggestion to school to hold online learning. The third recording was an onsite class recording where the teacher planned and recorded by herself. At this time, the school was already allowed to have onsite class with some restrictions.

After gathering the data, three teaching recordings, the researcher watched the three videos three times. The purpose of rewatching the teaching recordings was to ensure the availability of the data planned in this study. The first video was an online class recorded via *Zoom* which lasted for 50 minutes. The purpose of the teaching in the first recording was the students were able to write a greeting card. This video started with the teacher checking students' attendance. Then, there was a part of the video, in the beginning, where the teacher reviewed the class previous lesson, which was the asking and giving directions. This part of the video lasted for about 8 minutes. In this period, the teacher presented a text that had visual and verbal element. Also, the teacher explored the text by several instructions. The second teaching was recorded in 54 minutes. In this teaching, the objective of the teaching was students were able to perform a procedure of cooking orally. In the video, there was a scene where the

teacher presented a text that had visual and verbal element. The text was the type of food made from egg. The third video is the recorded teaching of the teacher's onsite class. In this video, the objective of the lesson was the students were able to comprehend short labels. However, in this video did not use texts which had visuals.

Having considered the use of visuals in part of the teaching, the researcher later decided to analyze recorded teachings 1 and 2. In the analysis, recorded teaching 1 was termed observation 1 and the recorded teaching 2 was the observation 2. In analyzing the teaching videos (observations 1 and 2), the researcher analyzed the visual and verbal texts ideationally, interpersonally, and textually in the light of systemic functional linguistics and grammar visual of design. Following, the relations or interplay between visual and verbal elements of text were analyzed using Royce's intersemiotic complementarity. Teacher's instruction during teaching the text was also analyzed to reveal teacher's pedagogy in teaching with the text.

Having observed teacher's teaching in the videos, had an informal conversation with the teacher, and considered importance of exploring visual and verbal texts, researcher offered the teacher to have instructional coaching to understand visual and verbal metalanguage. The teacher agreed to have instructional coaching. It was expected that this could improve her teacher's instruction and pedagogy teaching with multimodal texts. Employing the instructional coaching, a partnership approach, positioned the researcher to respect the teacher participant's professionalism based on the principle and create genuine partnership of equals, not an expert-novice dynamic (Knight, 2008; Knight & Nieuwerburgh, 2012). The principles of instructional coaching emphasize equality, where partners value each other's thoughts and decisions are made collaboratively; choice, enabling individuals to make their own decisions; dialogue, fostering open conversations to reach mutual agreements; praxis, linking meaningful experiences with the application of ideas; voice, encouraging multiple perspectives and learning from one another; and reciprocity, where everyone benefits from each other's successes and experiences, fostering a learning-oriented approach in partnerships.

In this research, there were several phases of instructional coaching. The first phase was a discussion focusing on the findings in observations 1 and 2. It was

conducted in an online meeting via *Zoom*. In this phase, the researcher and the participant discussed the reasons of using texts 1 and 2 in the teachings. Also, the researcher introduced the concept of ideational meaning of images. Here, the definition of participants, activity, and circumstances were discussed. The teacher and participant also discussed the two structures of ideational visual meanings, narrative and conceptual. Their examples were also displayed and elaborated by teacher. The subtypes of conceptual structures, classification, analytical, and symbolic, were also being discussed and elaborated. Finally, in this phase the teacher and the participant discussed the structures of the texts that the teacher used in her teachings.

The second of phase of the coaching was conducted in onsite meeting. In this phase, the teacher followed up the participant's understanding on the visual's ideational structures and participants. The concept of interpersonal meaning of visual images was also introduced. Here, the function of images was discussed, such as to demand and offer information. The researcher highlighted teacher's exploration of ideational meaning (identification of visuals' participants and activity) by showing several instructions used in the teaching. The concept of verbal text ideational and interpersonal meanings was also discussed. Here, the teacher was told when teaching a text, she had options to employ more declaratives when she intended to offer information based on the text, use more interrogatives to demand information from her students. The researcher also informed the findings in the observations 1 and 2 in terms of teacher's instruction to highlight of participants and processes. In addition, teacher's instructions to highlight the function of text, to offer and demand information, were also displayed to the teacher.

The following phase was the introduction of textual meaning of images. This was conducted in a non-formal discussion in an onsite meeting. Here, the concepts of *information value*, *salience*, and *framing* were introduced. The researcher also revisited the texts that the teacher used in observations 1 and 2 and highlighted the textual/compositional structure of the text. Several images taken from the students' textbooks were also used to discuss the textual composition. In this phase, teacher also practiced creating instruction to highlight ideational meaning of the texts she was going to use in her teaching. In addition, teacher and researcher also discussed to

employed declaratives and interrogatives to achieve the teacher's purpose of teaching visual and verbal text and to explore the function and meaning of the texts.

The following instructional coaching was an online meeting where the teacher had previously decided to discuss her planning of teaching. Here, she elaborated the stages of her teaching and several instructions she was going to use in her teaching. Here the teacher was reminded when she used interrogatives, she needed to prepare some follow up questions, in order to make the questionings more engaging. Also, teacher was reminded that she needed to provide more thinking time to her students when asked questions.

The coaching continued after the class observation done. Here, the teacher reflected her teaching, in terms of types of instruction she used. The teacher reflected that she used more interrogative to demand information from her students. In addition, we evaluated that the teacher introduced the image to highlight the participant and structure of visual text. In this phase, the teacher requested some feedback related to her instructions in the teaching.

The following instructional coaching was conducted in a non-formal and onsite meeting. In this phase, the participant shared her lesson plans, including the instructions and questions she intended to use in the second observation. The researcher provided several feedback and guidance based on the prepared materials. However, during the phase, not many instructions were found related to textual structure of visual text.

Finally, the coaching was done after the latest class observation. Here, several teacher's instructions and questions in the teaching were discussed. The discussion found that the teacher used them to highlight the participants and activity of the visual images of the text.

Following the coaching and observations, teacher's verbal language or instructions during teaching in the observations with texts 3 and 4 were then transcribed and analyzed to investigate the verbal and visual metalanguage under the theories of SFL (Eggins, 2004; Gerot & Wignell, 1995; Halliday & Matthiessen, 2004, 2013), Visual of Grammar Design (Kress & Leeuwen, 2006), and Royce's intersemiotic complementarity (T. D. Royce, 2007, 2015).

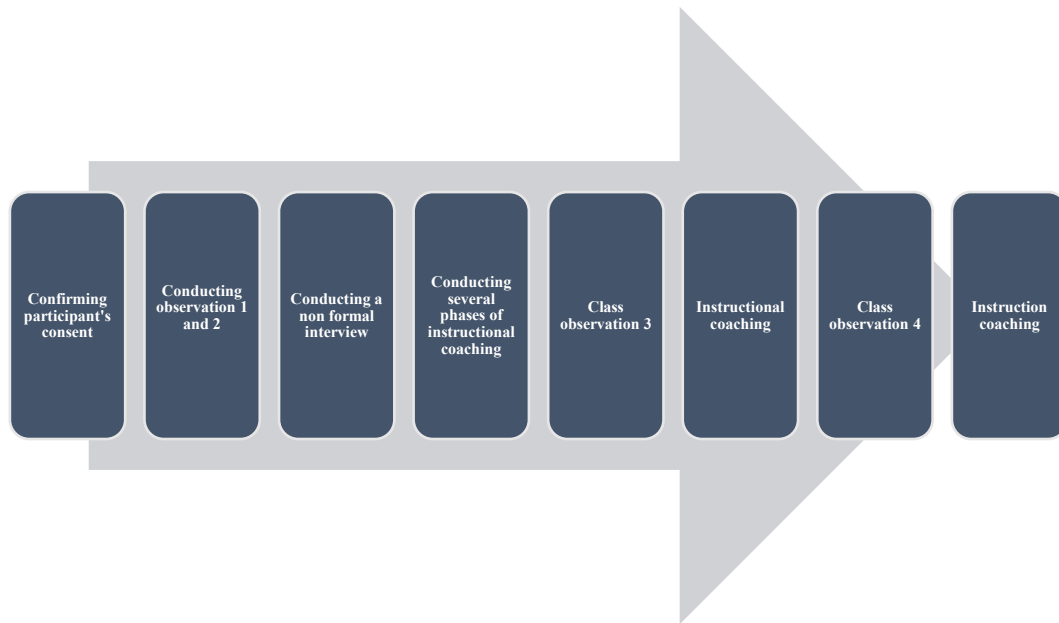


Figure 3. 1 Research procedures

3.5 Data Analysis

There are several data analysis conducted in this research. First, analysis was conducted to analyze visual elements of the texts ideationally, interpersonally, and textually. The second analysis was to analyze verbal elements of the texts ideationally, interpersonally, and textually. Third, the ideational, interpersonal, and textual interplay of the visual and verbal texts was analyzed. Following, teacher's instructions during teaching multimodal texts were also analyzed ideationally, interpersonally, and textually. And finally, the class interactions were analyzed to identify the teacher's pedagogy in teaching multimodal texts.

3.5.1 Visual texts analysis

The visual elements of the texts were analyzed within the framework of the Grammar of Visual Design developed by Kress and Leeuwen (2006, 2020). The analysis of these visual elements was guided by their ideational, interpersonal, and textual metafunction of images. This involved discerning the underlying structure of the images, determining whether they conveyed a narrative or conceptual message and their functions.

Ideationally, the analysis explored the various types of represented participants portrayed in the visuals, the activities they were depicted as engaged in, the qualities and characteristics attributed to them.

Interpersonally, the visual analysis explored the address of images to identify the function of images, to offer or demand. The presence of gaze and gesture of images can be analyzed that the images function to demand the readers to do something while the absence of contact of the images can be analyzed that the images function to offer the information, objects, and contemplation (Kress & Leeuwen, 2006, 2020).

Textually, the visual analysis explored the text's compositional structure base on the principle of information value, salience, and framing. By scrutinizing these aspects, the analysis aimed to shed light on the deliberate semiotic choices made in constructing the visual images and their implications for conveying meaning.

3.5.2 Verbal texts analysis

The verbal texts (multimodal texts 1, 2, 3, and 4) analysis was conducted using the metafunction of Systemic Functional Linguistics (SFL) as outlined by Eggins (2004), Gerot and Wignell (1995), and Halliday and Matthiessen (2004, 2013).

In terms of ideational analysis, the verbal text clauses were examined using the Transitivity system. This facilitated the identification of different types of Processes, such as material, mental, and relational, etc., thereby shedding light on the preferences in their usage. Alongside the identification of Processes, Transitivity analysis also encompassed the identification of Participants and Circumstances, allowing for an investigation into the preferred types of Participants and Circumstances employed in the text.

Interpersonally, the verbal texts were analyzed using the MOOD system, which aimed to identify the types of clauses (declarative, interrogative, imperative, exclamatory) and speech roles (offer, statement, command, question) present in the verbal texts.

Textually, the verbal texts were analyzed to investigate theme and rheme. By employing the Transitivity, MOOD systems within the framework of SFL, and theme analysis, it provided insights into the linguistic features presented in the verbal texts.

3.5.3 Ideational and interpersonal interplay of visual and verbal texts analysis

The analysis of the interplay of ideational, interpersonal, and textual meanings of visual and verbal of the texts employed Royce's intersemiotic complementarity (T. D. Royce, 2007, 2015). Ideationally, the verbal texts' participants, processes, and circumstances were identified using the transitivity system and the visual texts' participants', processes, and circumstances using grammar of visual analysis. Then, the relations of the visual and verbal texts were then revealed. There are several relations. The first relation is *Repetition*, the relation of identical experiential meaning. The *Synonymy* relation is the relation of the same or similar experiential meaning. Thirdly, *Antonymy* is the relation of opposite experiential meaning and can be illustrated by a visual graph displaying 'increased degrees of temperature' and it is intersemiotically antonymous with the word *decrease*. *Meronymy* is the relation between the part and whole of something. Following, *Hyponymy* is the relation between a general class of something and its sub-classes. Finally, *Collocation* is the relation of an expectancy or high probability to co-occur in a field or subject area.

The interpersonal intersemiotic complementarity of verbal and visual texts was analyzed through analysis of the verbal and visual MOOD (T. D. Royce, 2007). By identifying the Subject and Finite of verbal MOOD, the speech functions can be identified (Halliday & Matthiessen, 2013) either offer, command, statement, or question.

The textual intersemiotic complementarity of verbal and visual texts was analyzed through analysis of the verbal and visual principle of information value, salience, and framing (T. D. Royce, 2007). This analysis would reveal how the verbal and visual texts work together to produce the coherent and unified visual-verbal message to the readers

3.5.4 Teacher's instructions analysis

Teacher's instructions during exploring the multimodal texts were analyzed ideationally and interpersonally. Ideationally, the instructions were analyzed using Transitivity analysis to reveal types of Processes, such as material, mental, and relational, etc., Participants and Circumstances.

Interpersonally, teacher's instructions were analyzed using the MOOD system, which aimed to identify the types of clauses (declarative, interrogative, imperative,

exclamatory) and speech roles (offer, statement, command, question) present in the instructions.

To identify the teacher's pedagogy teaching multimodal texts, class interactions were also analyzed both in pre and post interventions. Teacher's instructions were analyzed to identify their pedagogical purposes. There were several pedagogical purposes of the instructions, such as introducing and identifying carrier and attribute participants.