CHAPTER III
RESEARCH METHODOLOGY

This chapter discusses the method in conducting the study comprising research design, research site and participants, data collection, and data analysis. The research design elaborates the approach of this study. Research site, describes the setting and context where the research takes place. The participants refer to the participants involve in this study. Then, the data collection provides information about the types of data and the procedures of collecting the data. The data analysis elucidates the procedures for investigating the collected data.

3.1 Research Design

The purposes of this study are related to the investigation of the following questions, (1) what ideational meanings are realized in the choice of language and image in the students' Digital Storytelling (DST) video, (2) What is the intersemiotic relation between verbal and visual modes, and (3) what are the potentials and challenges for pedagogical implication. In order to answer these questions, this study employed descriptive qualitative design which is considered as the appropriate method to obtain the complex and comprehensive understanding of a particular phenomenon in depth. In this case, a particular phenomenon refers to the analysis on the meanings realized in Digital Storytelling (DST) videos. This study focused on interpreting the meanings embedded in the choice of verbal texts and visual images. The use of interpretive analysis in descriptive design was supported by Lichtman (2006), Merriam (2009), and Silverman (2005). There were two considerations of using qualitative design because, first, it was considered as the powerful tools or text analysis in the educational field (Freebody 2003 in Emilia, 2005) and second, it was expected to make sense the meaning or to interpret the phenomena that happen in a natural setting (Lichtman, 2006). This study was considered as a descriptive study since the data were analyzed descriptively and at end of this study, the results of the analysis were elaborated in words rather than numbers.

Moreover, this study focused on exploring a particular phenomenon in depth, especially regarding the Digital Storytelling (DST) videos as Multimodal Texts. The particular social unit of this study was in the form of the multimodal artifacts created by the students in a particular school. In this study, the researcher did not directly involve in the process of creating DST. Considering the qualitative research design, this study highlights the researcher as the main instrument (Merriam, 2009). She further explains that human beings play the important role as the primary instrument in qualitative data analysis because they have the ability to interact with the subjects or phenomena that are intended to be observed. Thus, the researcher of this study became the one who analyzed and interpreted the data.

Meanwhile, the Systemic Functional Linguistics (SFL) proposed by Halliday and Matthiessen (2004), Visual Grammar introduced by Kress and van Leeuwen (2006), and Image-language Relations designed by Unsworth (2006a, 2006b) and Chan's (2011) were regarded as the major theoretical frameworks utilized in this study. These frameworks were claimed as the ideal tools to analyze the data because those theories were commonly used for multimodal text analysis which did not only focused on language but also the images of multimodal texts (Knox, 2009; Stoian, 2015; Unsworth, 2006a, 2006b).

In general, Knox (2009) states that Systemic Functional Linguistics (SFL) is a descriptive theory dealing with language use that is seen from social perspectives. Additionally, Stoian (2015) claims that through Visual Grammar developed by Kress and van Leeuwen, the meaning of images can be revealed descriptively. Moreover, Unsworth (2006a, 2006b) and Chan (2011) also support to apply Systemic Functional (SF) approach to analyze the integration of language and images using verbal and visual grammar, since these two resources facilitate descriptive and analytical explanation.

Basically, Halliday (2004) has introduced that the language has three metafunctions comprising interpersonal, textual, and ideational metafunctions. Meanwhile, ideational metafunction is divided into two components: experiential and logical. This study gave more attention to investigate experiential metafunctions. The experiential metafunction is realized within the transitivity system which consists of some elements such as, process types, participants and circumstances. Meanwhile,

this study mainly focused on ideational metafunction (Transitivity System) of Halliday's (2004) Systemic Functional theory and Representational Analysis of Kress and van Leeuwen's (2006) Visual Analysis, and Unsworth's (2006a, 2006b) and Chan's (2011) theories of Image-Language Relations. It is also suggested by Lirola (2006) who states that Systematic Functional approach is appropriate to be utilized in order to analyze the connections between language, text and the context, the because it is related to seeing language as a socially constructed system. Not only Lirola (2006), Hermawan (2013) also explains that Systemic Functional approach is considered as the appropriate tool that can be able to observe verbal combined with Reading images to analyze the visual image in the multimodal analysis.

Reading image is related to Visual Grammar theory was inspired by Halliday's work on SFL theory which was extended by Kress and van Leeuwen (2006) was considered to be applied to visual image analysis. The ideational metafunction of the verbal text is associated with Representational meaning of the visual image. Meanwhile, Representational meaning is categorized into two types, Narrative and Conceptual. A narrative process is indicated by the vector. Meanwhile, if there is no vector in that image, it might present a static or timeless viewpoint, then it is categorized as a conceptual structure.

In order to understand how image and language are integrated to create meaning, the image-language relations developed by Unsworth (2006a, 2006b) and Chan (2011) were used in this study as a useful and meaningful framework to understand the linkages between image and text in Multimodal text.

3.2 Research Site and Participants

The Digital Storytelling was taught in one of the Senior High Schools in Malang, East Java. This site was chosen based on some considerations. First, the school was where the teacher had already performed Digital Storytelling (DST) instructional practice. Second, the school gave permission to the researcher to conduct the observation of teacher's teaching practice on Digital Storytelling (DST) and the students voluntarily participated in this study. There were three classes that were observed by the researcher following the teacher's schedule to teach in three classes.

The participants of this study were instructed by the female Senior High School teacher to create Digital Storytelling (DST) videos. Approximately fifty-six students submitted their created DST videos to an online platform called Edmodo. The teacher was purposively selected in this study because she had written and presented papers in some conferences and published an international journal article about DST. Moreover, her book related to DST was published and sold internationally in Amazon.com. In brief, most of her publications were related to DST. Moreover, she had participated in a teacher training program called AMINEF in America for six months and learnt DST. Therefore, she was regarded as the experienced teacher who was familiar with DST. However, due to the ethical consideration, the teacher's name was kept as confidential information.

3.3 Data Collection

The explanation below is related to the instruments and the procedures of collecting the data. The instruments of the study involves students' DST videos.

3.3.1 Instruments

The documents were collected in the form of multimodal products called Digital Storytelling (DST) videos which were created by the students. In collecting the data, the researcher did not give any special treatments to the students. The students' were given a project by their teacher to create DST video as an individual assignment.

There were fifty-six Digital Storytelling (DST) videos submitted by the students, but only three videos were selected to be analyzed further based on several considerations. The reason for choosing three DST videos was based on Creswell (2009) stating that the focus of conducting qualitative research is concerning the quality of the participants, not the quantity of the participants. Moreover, Hull and Nelson (2005) also highlight the importance of choosing a text that is not only powerful but it must be analyzable. They argue that a text should be economical to avoid complexity that might cause difficulties. Moreover, the selection was also considered based on other reasons such as the size of the video, the duration of the video, the analyzability of the video. These considerations were made because it was

necessary to choose some videos that were economical, manageable, and did not contain complex construction (Hull & Nelson, 2005).

Moreover, since this study mainly discussed the image-language relations, the unrelated elements were eliminated such as moving images and video clips, and the duration of the video must be short to avoid excessiveness. It is supported by Hull and Nelson (2005, p. 234) who have recommended the researcher to consider which aspect of modes that would become a focus of the study from broadly existing modes such as "spoken words, images, music, written text, and movement and transition." To clarify, the analysis was focused more on the visual images that were presented in the forms of static pictures, images or photographs rather than the dynamic one. Hull and Nelson (2005) also state the importance of choosing texts that are manageable. In this case, the texts were considered manageable because unrelated elements in those texts such as animation or transition effect were neglected, but the analysis focused more on the images that were integrated properly with the verbal narration.

In this case, the teacher's assessment was also deliberated by the researcher in order to choose three DST videos of the students who got the low, average, and high scores. Three videos were selected using purposive sampling by considering the research questions proposed. Those videos were selected based on teacher's assessment on the DST project. It was employed in order to map out the students' score which represented the general cohorts. Therefore, the selected DST videos involved the videos that were created by one female student who got a low score named Amira (a pseudonym), one male student who achieve an average score named Dika (a pseudonym) and one male student who attain a high score named Hasbi (a pseudonym). These videos were respected as the representatives of the general performances of overall students.

3.3.2 Procedures

There were some procedures for gathering the data. First of all, the researcher observed the teacher's teaching practice in the classroom to make sure that the teachers had already implemented Digital Storytelling (DST) instruction and to know the process of how the teacher's taught the students. It was observed that the students

were given a task by the teachers to create their own Autobiographical Recount in the form of DST. The students created a digital video in three weeks. After three weeks, the researcher collected the data by downloading students' Digital Storytelling (DST) videos from Edmodo. There were fifty-six DST videos were collected by the researcher.

Second, the researcher selected the Digital Storytelling videos to be analyzed further. In this case, from fifty six DST videos created by the students, there were three videos that were considered to be analyzed further. All student-created multimodal products were reviewed to see the general characteristics and trends among digital storytelling features. There were three videos that were selected regarding the teacher's assessment in order to get three representative videos taken from three students with various scores which were expected to represent the cohorts.

Thus, the main focus of this study was analyzing verbal language and visual images such as narration, photograph, and images. Meanwhile, the videos that contained movements such as animation, transition effects, video clips were eliminated. Third, three DST videos were labeled as, Text 1 which was composed by Amira (a pseudonym), Text 2 created by Dika (a pseudonym) and Text 3 designed by Hasbi (a pseudonym).

Next, the verbal data were transcribed. Hull and Nelson (2005) strongly emphasize that there is no single method to transcribe the multimodal texts and they suggest to transcribe the verbal language by matching it to the images. In doing so, the transcriptions are supposed to relate with the other modes which are a part of the study concern. Thus, the transcriptions were divided into several clauses and videos containing inserted images were captured one by one.

3.4 Data Analysis

According to Silverman (2005), data analysis is conducted in order to investigate the pattern, ideas, explanations that are found from the collected data. The collected data were analyzed inductively. McMillan and Schumacker (2014) state that Qualitative data analysis refers to inductive process which begins with organizing the data into categories to find the patterns and the connections of the classifications.They further classify three steps of inductive analysis involving

coding, categorizing, and interpreting the data. In brief, identification refers to identify the data that need to be noted and underlined in the form of verbal and visual data, classification deals with categorizing the data based on the major frameworks. Then, the data were systematically coded using systematic coding, and the interpretation was inferred from the results of calculating the dominant process after of the coded data to answer the research questions.

Regarding the systematic coding, this study employed technical quasi-statistical data analysis strategy. McMillan & Schumacker (2014) describes this kind of style which regards the researcher to determine the categories in advance. Three models were employed in this study to assist the researcher in conducting data coding. First, the model of analysis depicted in Table 3.1 was designed by Halliday and Matthiessen (2014). It was used to analyze the verbal texts.

Table 3.1

Verbal Analysis

Excerpt:

Participant	Process	Participant	Circumstance

(Eggins, 2004: 216)

In terms of visual image, the model of analysis designed by Gill (2015) was applied in this study. It was presented in Table. 3.2

Table 3.2

Visual Analysis

Picture:

Process	**Participant**	**Participant**	**Vector**	**Circumstance**

(Gill, 2015: 43)

Furthermore, the model of data coding in intersemiotics relations purposed by Unsworth (2006a, 2006b) and Chan (2011) were also employed to understand how the verbal texts engage with visual images. It was displayed in Table 3.5

Table 3.3

Intersemiotic Relations Analysis

Verbiage function			**Image Relations**	
(Verbal language)			(Image)	
	Actor/	Information about the	+Variation	=Exposition
Doing: happening	Medium	color and shape of an object		
	Material	Travels		
	Location	Into your eyes		

(Unsworth, 2006a: 1191)

The procedure of analyzing the data included, first, the videos were watched for several times in order to capture the overall components of the video. Second, the data were identified and divided into two parts based on verbal (narration) and non-verbal (images) data. Then, the verbal data were transcribed in words. After that, the transcriptions were broken down into several clauses. Meanwhile, the collection of images in the videos were captured one by one. The verbal data that had been broken down into clauses were then categorized based on Halliday's Systemic Functional Linguistics (SFL) theory on Ideational metafunction concerning Experiential meaning. Meanwhile, the images were analyzed using Kress and van Leeuwen's Visual Grammar focusing Representational meaning. Furthermore, the image and language relations were identified using Unsworth's (2006a, 2006b) theory on Intermodal Relations. Fourth, after classifying all the data, the frequency of each item was calculated and displayed in Table 3.4, 3.5, and 3.6. Fifth, the results of the findings were interpreted. Sixth, the pedagogical implications were conveyed.

Table 3.4

Frequency of Experiential Processes

No	**Experiential Process**	**Students' Text**			**Number of Process**	**Percentage**
		1	**2**	**3**		
1	Material					
2	Behavioral					
3	Mental					
4	Verbal					
5	Existential					

6	Relational Attributive
7	Relational Identifying

$$\frac{\text{Number of each type of processes across the five videos}}{\text{Total number of all processes in the data}} \text{ X } 100 = \%$$

Table 3.5

Frequency of Representational Processes

No	Representational Process	Students' Text 1	2	3	Number of Process	Percentage
1	Action					
2	Reaction					
3	Speech and Mental					
4	Conversion					
5	Classificational					
6	Analytical					
7	Symbolic Attributive					
8	Symbolic Suggestive					

$$\frac{\text{Number of each type of processes across the five videos}}{\text{Total number of all processes in the data}} \text{ X } 100 = \%$$

Table 3.6

Frequency of Intersemiotic Relations

No	Experiential Process	Subtypes	Students' Text 1	2	3	Number of Process	Percentage
1	Homospatiality						
2	Equivalence						
3	Exposition						
4	Exemplification						
5	Augmentation						
6	Distribution						
7	Divergence						
8	Enhancement						
9	Projection						
10	Unrelated						

$$\frac{\text{Number of each type of processes across the five videos}}{\text{Total number of all processes in the data}} \text{ X } 100 = \%$$

In brief, the present chapter provides some information about several aspects. First, the study was attempted to answer the formulated questions. Second, this study was considered as descriptive qualitative study. Third, there were three Digital Storytelling (DST) videos from a particular Senior High School in Malang were taken as the data to be analyzed in depth. Fourth, the procedures of analysis was elaborated. Moreover, the data were analyzed based on Ideational Metafunction involving Experiential Meaning (Halliday and Matthiessen, 2004), Representational Meaning (Kress & Van Leeuwen, 2006), and Image-language Relations (Unsworth, 2006a, 2006b) and Chan (2011).