CHAPTER III

RESEARCH PROCEDURE

A. Research Method

The study was conducted using multimodal analysis. Multimodal analysis is referred to as "multimodality" or multimodal semiotics. According to Kress and Van Leeuwen (2006), multimodality is when a text communicates through combination of modes. In this case, posters consisting of visual images and written texts were analyzed and described with the method. Multimodal Discourse Analysis (MDA) was applied in this study because researcher attempted to find out the representation of critical thinking in the posters. The method is prominent paradigm in discourse studies enlarging from study of language to the study of language in combination of resources, such as images, scientific symbolism, gesture, action, music, and sound (O'Halloran, 2011). Thus, using multimodal analysis is relevant to this research in order to investigate students' critical thinking that they created in educational poster tasks.

B. Research Procedure

Before conducting research, students from Senior High Schools located in Tasikmalaya, West Java, Indonesia, were asked on their involvement to be participants in this research. After they agreed to be participants, they were given a consent form as the subsequently step. Consent form aimed to show agreement to participate in research. The consent form is one of ethical principles to respect individual's autonomy.

Autonomous individual means that the person is willingly to be involved in the research (Shahnazarian, Hagemann, Aburto, & Rose, 2013). The participants were students who created educational posters as they were projected to fulfil a task in English class with topic about caption. It was occurred when they were learning about caption according to lesson plan in curriculum 2013. In the curriculum 2013, there are associating and communicating processes which carried out to build students' critical thinking. This process was designed by group work and students can convey what they discussed in group by creating educational posters as media to communicate. Those posters were documented and collected as data to reveal students' critical thinking using interactive meanings of visual grammar framework and set of questions proposed multimodal assessment framework based on Bloom's taxonomy of questions. These documents provided require description and interpretation of data (Bowen, 2009).

C. Data Collection

Nine educational posters created by students were collected as data. Those posters were documented. According to Atkinson and Coffey (1997), documents are produced 'social facts' in organised ways (as cited in Bowen, 2009, p.27). Researcher uses the documents as Merriam (1988) pointed out that "all types of documents can assist the researcher to reveal meaning, expand understanding, and discover insights related to the research problems" (as cited in Bowen, 2009, p.29). Bowen (2009) points

out that “documents provide context, a means of tracking change and development, and verification of findings” (p. 31).

D. Data Analysis

The collected data were analyzed qualitatively in multimodal analysis. This study employed visual grammar framework in interactive meanings proposed by Kress and Van Leeuwen (1996, 2006) to analyze educational posters visually in multimodal way. Subsequently, researcher elucidated the visual analysis referring to social issues.

MULTIMODAL ANALYSIS OF INTERACTIVE MEANING

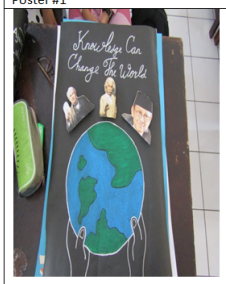
Poster #1	Theme	Visual Artifact	Description			Meaning
			Contact	Social Distance	Attitude	
	Changing the world through knowledge	Popular Figures: Thomas Alva Edison, Albert Einstein, and B.J. Habibie. Thomas Alva Edison was an inventor of electric light or light bulb from America. Due to his invention, America’s economy increased during the	Three images portray 3 male figures; they are Thomas Alva Edison, Albert Einstein, and B.J. Habibie. Each figure address viewer indirectly. No contact is made. Thomas Alva Edison doesn’t look at directly to the viewer. His stare looks blank while holding a light bulb and wearing black suit and tie. His	The represented participants in the poster, namely popular figures, which suggest a far social distance. Images allow us to look at people like ourselves as strangers although the public figures may be well	Vertical angle represents the power between the represented and interactive participants. The poster shows low angle which means the power belongs to the represented participant.	These images primarily offer information about the fact that knowledge can change the world by displaying three public figures having knowledge that can change the world. It indicates that to the viewer to have knowledge so that we can change the world. In addition, from

Figure 3.1 Interactive Meanings of Visual Analysis

In addition, students’ CT representations were supported by CT theories based on Paul and Elder (2005). Additionally, the educational posters as data were interpreted used multimodal assessment framework proposed by Chan, Chia, and Choo (2017) to identify students’ CT aligned with Revised Bloom’s Taxonomy.

Text Analysis Focuses on the structure of the text		
1	Description/ Definition	Theme/Subject
1.1	Remembering level	The students can recognize and identify the scientists, Thomas Alva Edison with his invention of lamp, Albert Einstein with his formula of atom bomb, and B.J. Habibie with his knowledge that can make a plane.
1.2	Remembering level	Obvious Content
		Students' CT is represented by having knowledge about public figures in the poster. The students know those scientists, whose knowledge can change the world.
1.3	Understanding level	Inferred Content
		The image of globe of world held by two hands is interpreted as knowledgeable people can change the world. Students understand the meaning of particular words or phrases in the text.
1.4	Understanding level	Connected Content
		Students want to highlight other elements, in particular public figures in the middle part and the globe of world held by two hands. The caption *"Knowledge can change the world"* is highlighted by white color. The color gives a hope for the viewers in particular students for changing the world by having knowledge.
1.5	Applying level	Connected-inferred Content
		Students can carry out justification of information by relating verbal and linguistic signs as information. The verbal itself is connected each other with visual artifacts they created by illustrating three scientists and globe of world held by hands.

Figure 3.2 Text Analysis of Multimodal Assessment

Author Analysis Focuses on the author's intention and purpose		
1.6	Analyzing level	Identification of explicit claim
		Students' claim from the poster is about changing the world through knowledge
1.7	Analyzing level	Identification of implicit claim
		It is manifested through visual analysis. Based on contact, each figure addressees viewers indirectly indicating to give inspiration to have knowledge like scientists, e.g. B.J Habibie, Thomas Alva Edison, and Albert Einstein to change the world

Figure 3.3 Author Analysis of Multimodal Assessment

1.8	Evaluating level	Analysis of Arguments
		Students made a claim that for changing the world should be carried out by having knowledge. They generalized only scientists are the agents of world changing. Eventually, they made point sustainable for knowledge is needed for better future.
Context Analysis Focuses on representation		
1.9	Evaluating level	Analysis of audience
		Poster that students created is directed to Students of Mathematics and Science major.
1.10	Evaluating	Analysis of thematic representation
		Students value science e.g. mathematics and physics as their part of life and want to accomplish skills as scientist or someone who's involved in science

Figure 3.4 Context Analysis of Multimodal Assessment

At last, this study utilized critical thinking and non-critical elements to determine students' CT. To enlighten insight about data analysis, this study conducted following steps below:

1. Educational posters as multimodal texts were identified by viewing images as visual artifacts.
2. The data were identified using interactive meaning divided into three parts contact, social distance, and attitude proposed by Kress and Van Leeuwen (1996, 2006).
3. The data were discussed by the researcher as viewer of posters.
4. The interpretation related to visual is referred in social issues to the implementation of critical thinking skills supported in varied theories based on Paul and Elder's guidance (2005) in CT competency standards.

5. Multimodal texts were interpreted using Chan, Chia, and Choo's framework (2017) consisting of Revised Bloom's taxonomy in this case, the posters to reveal students' CT.
    a. After the data were analyzed visually, the data were interpreted through framework for assessing multimodal texts.
    b. The framework consists of three components, namely, text analysis, author analysis, and context analysis.
    c. In those components, there are some levels revealed based on Bloom's taxonomy revised version, they are remembering, understanding, applying, analyzing, and evaluating.
6. Determine students' critical thinking skills based on critical and non-critical elements.

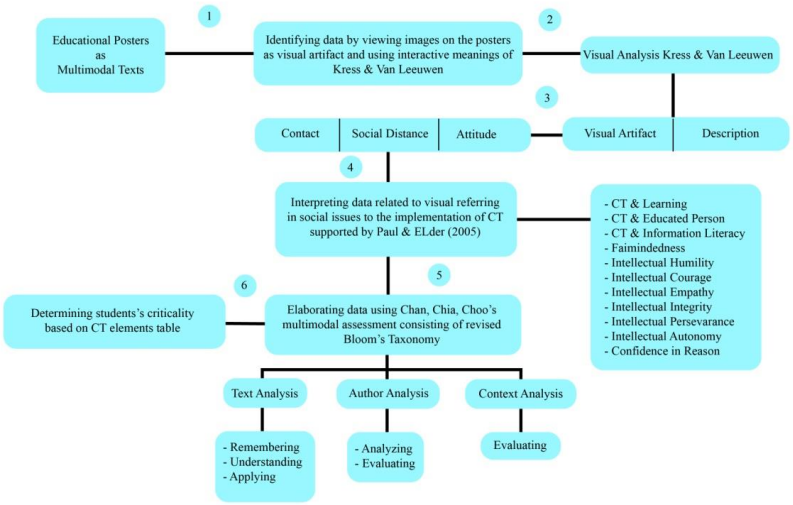


Figure 3.5 Map/Scheme of CT Analysis from Multimodal Perspective

E. Research Schedule

No	Activities	Aug. - Sept. 2018	Oct. – Dec. 2018	Jan. 2019	Feb. 2019– Jan. 2020	Jul. 2020
1.	Submission and Approval of Research Topic					
2.	Writing and Proposal Approval					
3.	Seminar Proposal Examination					
4.	Conducting the Research and Writing the Report					
5.	Final Thesis Examination					

Table 3.1. Research Schedule