CHAPTER III

RESEARCH METHOD

This chapter describes the research method that is employed in this study. It includes the explanation of the research design, the data collection and the data analysis.

3.1 Research Design

This study employed a descriptive qualitative method. This method was chosen since the data were the collection of journal articles. Creswell (2009, p.4) explains that "a qualitative method is a means for exploring and understanding the meaning of individuals or groups ascribed to a social or human problem". In this study, a qualitative method attempts to explore and understand the quality of journal articles that depends on how the authors write their journal articles. In addition, Hancock, Ockleford, and Windridge (2009) state that a qualitative method emphasizes on description and interpretation that leads to an evaluation for a process. Specifically, this study focuses on the description and the interpretation of some elements of journal articles such as sentence structures (including sentence types and sentence logic), citations and references (including types of reference sources and appropriateness of citations and references).

The design of qualitative research in this study was a case study. Case study aims to investigate a certain phenomenon in its own context (Yin, 2009). In this study, case study was employed to investigate the use of sentence structure, citations and references in the journal articles written by lecturers of Mathematics and Science Faculty and Engineering Faculty.

This present study was also supported by descriptive statistics in order to simplify the process of interpreting the data. Schreiber (2008, p.1) believes that descriptive statistics can be combined with qualitative design because "it constitutes a mathematical summarization of the data where a large number of observed values are mathematically converted to a few numbers". In this case, the large number of sentences, citations, and references were converted into percentages.

3.2 Data Collection

The data collection of this present study includes two important parts namely data source and procedure of data collection as presented below.

3.2.1 Data Source

The data of this study were twelve journal articles from one university in Bandung, West Java. Six of journal articles were from journals on Science including Science Education, Chemistry, and Computer Science. Meanwhile, the rest of them were journals on Engineering including Engineering Education and Agroindustry. The journal articles were written by lecturers. All journal articles were written in *Bahasa Indonesia.* Moreover, the data were collected from two sources, a university database and a university library. Some of journal articles were taken from the university database, which is an electronic publication forum for journal articles, in the form soft files (.pdf) while the rest were taken from the university in printed version.

3.2.2 Procedure of Data Collection

In qualitative data, purposive sampling is often suggested as a technique of sampling since it represents a small subset of a larger population based on a particular characteristic (Latham, 2007). Therefore, in this research, this technique was used to collect several journal articles based on particular characteristics. The particular characteristics of the journal articles, which were considered in this study, were faculty and year of publication. As mentioned earlier, there were twelve journal articles that were chosen. The twelve journal articles consist of six journal articles taken from Faculty of Mathematics and Science and six others were taken from Faculty of Engineering. Moreover, the journal articles were published in the period of 2012 - 2014.

3.3 Data Analysis

In order to analyze the data, four steps were accomplished in this study. The four steps were identification, categorization, mapping and synthetizing. The four steps were applied into three issues of this study.

3.3.1 Identification

Identification is the first step to see the sentence types, the quality of sentence logic and the quality of citations and references. Firstly, regarding analyzing

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sentence types, each sentence of all journal articles was identified and given a number. This aims to sum the number of sentences that appear in all journal articles. Secondly, identification regarding citations and references was done by highlighting the occurrences of citations in the body of the journal articles and the occurrences of references at the end of the journal articles and giving a number for each citation and reference. The identification of citations and references aims to find unlisted citations or references in the data.

3.3.2 Categorization

After identifying sentences, each sentence was categorized into one of the four sentence types. The four sentence types are simple sentence, compound sentence, complex sentence and compound-complex sentence (Alwi, Dardjowidjojo, Lapoliwa, & Moeliono, 2003; Oshima & Hogue, 2007). This categorization of sentences was based on its clauses; the clauses could be independent or dependent clauses. Furthermore, the use of conjunctions (coordinators or subordinators) between or among the clauses may indicate a particular type of sentence.

In determining sentence logic, each sentence was categorized into a logical sentence or an illogical sentence. A sentence could be categorized as logical sentence when a sentence had the basic elements of sentence, which are subject and verb. Illogical sentence was identified when one or more categories of sentence problems appeared in a sentence. The four categories of sentence are as follows: 1) syntactical problems, 2) parallelism, 3) conjunctions, and 4) punctuations.

Categorization of citations and references was divided into two parts. The two parts were categorization of reference sources based on several characteristics and categorization of citations and references based on the appropriateness of citations and references. Regarding several characteristics, the reference sources were categorized based on types, languages, and years of publication. The types of the sources were book, book chapter, journal, research paper/thesis/dissertation, dictionary, web page / blog, newspaper/magazine and others. Indonesian and English were languages that appeared in the sources. Categorization of the year of publication was based on some time ranges: published in the last 5 years, 6 - 10

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years, 11 – 15 years, 16 – 20 years and more than 21 years to identify the currency of the sources.

After categorizing the reference sources, the next categorization was the categorization of the appropriateness of citations and references. The categorization of the appropriateness of citations and references includes three categories namely correct, incorrect, and blank. Correct and incorrect category were based on *Publication Manual of the American Psychological Association (6th edition)* in 2010. This citation and reference style was chosen since APA style was recommended by some journals. In addition, if other journals do not state clearly the citation and reference style that should be used by authors, APA style is also used to assess the appropriateness of citations and references style because the University recommends APA style for any academic research published in the University based on the University's Writing Guidelines for Scientific Papers. Meanwhile, blank is a category when citations were not listed in the reference lists (blank reference) or when references were not listed in the body of document (blank citation) (Weber-Wulff, 2014). Since some incorrect citations and references were found in the journal articles, the mistake categories of citations and references were made. The incorrect citations and references are because of violation of APA. The mistake categories of citations are as follows: 1) author's name, 2) year of publication, 3) secondary sources, 4) mechanics (e.g. punctuation), and 5) 'others'. The mistake categories of references are as follows: 1) author's name, 2) year of publication, 3) title, 4) place of publication, and 5) 'others'.

3.3.3 Mapping

The mapping step aims to find particular patterns in all journal articles that are related to the sentence structure, citations, and references. In this step, the categories that are shown in the previous step such as the sentence type, the sentence logic, the characteristics of references sources (including reference source types, language used in reference source, and year of publication of reference source), and the appropriateness of citations and references (including mistake categories of citations and references) were drawn into the tables. The tables were made in the Microsoft Excel since the data in the tables can be

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calculated automatically by using several formulas in the Microsoft Excel (SUM, COUNTIF etc.), so that the process of the data calculation becomes easier. In addition, the results of the calculation are more accurate than the results which are calculated manually.

In order to determine the sentence types and the sentence logic in all journal articles, the mapping process was begun by making a table that consists of columns of the numbers of sentences, the sentence types, the sentence logic, and the categories of mistakes in each journal article. After making the table, firstly each sentence was classified into one of the sentence types whether simple sentence, compound sentence, complex sentence, and compound-complex sentence by giving a checklist to one of the four sentence types. This aims to find the most frequent sentence type in all journal articles. Secondly, each sentence was classified into a logical sentence or an illogical sentence by also giving a checklist to one of the two categories of sentence logic. This aims to compare the number of logical sentences and the number of illogical sentences in all journal articles. Thirdly, if a sentence was classified into illogical sentence, the sentence had a mistake or mistakes (syntactical problems, parallelism, conjunctions, and punctuations). This aims to find the most frequent sentence mistake. After doing the three steps, each checklist was calculated and the total number of the checklists was converted into percentages. The table is presented below.

Table 3.1 The Analysis of Sentence Types and Sentence Logic

ID	Sentence Type				Sentence Logic		Category of Mistakes
	S	CD	CX	CC	L	IL	
1							
2							
3							
TOTAL							
PERCENTAGE							

After doing the mapping process for the sentence type and the sentence logic, the next mapping process was done to reference sources and the appropriateness of citations and references. Regarding reference sources, the mapping process was started by making two tables, the first table consists of columns that presents the types of reference sources and years of publication of

the reference sources and the second table consists of columns that presents the types of reference sources and the used languages of reference sources (Indonesian Language 'IDN' and Foreign Language 'FL'). The two tables aim to find the most frequent reference source, the currency of reference source, and the most used language of reference source. Regarding the appropriateness of citations and references, two tables were made. The first table consists of columns that presents citation and reference as pair and citation and reference in the category of correct or incorrect. This aims to find the total number of correct citation, incorrect citation, correct reference and incorrect reference. In addition, that process can help to find unlisted citations (blank citation) and unlisted references (blank reference). Meanwhile, the second table consists of columns that presents citation mistake category and reference mistake category. This aims to find the most frequent citation mistake and the most frequent reference mistake. After doing those steps, total number of each category is converted into percentages. Those tables (Table 3.2, Table 3.3, Table 3.4, and Table 3.5) are shown below.

Table 3.2 The Analysis of Types of Reference Sources (Year)

Types of Reference Sources	Published in the last					
	≤ 5 years	6 - 10 years	11 - 15 years	16 - 20 years	≥ 21 years	Unknown
Book						
Book Chapter						
Article/Journal						
TOTAL						
PERCENTAGE						

Table 3.3 The Analysis of Types of Reference Source (Language)

Types of Reference Sources	IDN	FL
Book		
Book Chapter		
Article/Journal		
TOTAL		
PERCENTAGE		

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Table 3.4 The Analysis of Pair of Citation and Reference

Pair	Citation		Reference	
	Correct	Incorrect	Correct	Incorrect
1				
2				
3				
TOTAL				
BLANK				

Table 3.5 The Analysis of Category of Citation and Reference Mistake

Pair	Category of Citation Mistake	Category of Reference Mistake
1		
2		
3		

3.3.4 Synthetizing

The last step of data analysis in this present study was synthetizing that aims to interpret the results of the analysis found in the mapping step. The process of synthetizing was started by elaborating and explaining the patterns found the previous analysis such as the pattern of sentence type, the pattern of sentence logic, and the pattern of the appropriateness of citations and references. The proses of elaborating and explaining were also related to some related theories and the some previous studies, so that those processes can help to answer all the research questions. Furthermore, the answers of the research questions can show the similarities or differences of the previous studies.

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