

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

In this research, this chapter described the methodology or procedures that were followed in conducting this study. The writer discussed several concepts such as concept of research design, research setting, subject and object, source of data, data collection, and data analysis procedure.

#### **A. Research Design**

This research used interaction analysis. Interaction analysis is analyzed that only focus in interaction between teacher and students in the classroom during teaching – learning process. The approach used in this research was the qualitative research. According to Creswell (2014, p. 4), qualitative research is an approach for exploring and understanding the meaning individuals or group ascribe to a social or human problem. This research used analyzed classroom interaction by using Flander’s Interaction Analysis Categories System (FIACS) technique at the 11<sup>th</sup> MIPA 1 graders of MAN 3 Banjar academic year 2017/2018 and also observation the class. As stated in Chapter 1, this study is aimed to describe the characteristics of teacher and student talk and the talking time spent teacher and students during in teaching – learning process that are found in classroom based on Flanders Interaction Analysis Categories System (FIACS) Technique. Besides, this research used one supported by simple statistic calculation (percentage) in order to support the findings, whereas the analysis model used was the inductive

type which started from the data or facts obtained in the field for abstraction and drawing the conclusion.

Data collecting in qualitative research are observation, interview, document, and audio-visual material. In this reasearch, the writer only using observation and audio-visual material to collect the data. This research will be designed by entering the class to observe the students, then record the teaching and learning of the class, makes some notes for important things, analyze the taking time during lesson, and the characteristics of classroom interaction and finally classify them by using FIACS (Flanders Interaction Analysis Categories System) Technique.

Through FIACS Technique, the writer using the steps to get the result and described the result of this research by showing the percentage of teacher and student's talk process during classroom interaction. The writer used descriptive method to transcribe the data and as a non-participant observer in classroom interaction when teaching learning process. In addition, the writer used observation, recording, transcribing, coding, and analyzing to collect the data.

## **B. Research Setting**

The research conducted in MAN 3 Banjar. It is located in, Jalan A. Yani Km 15.200 Gambut, Banjarmasin City, South Kalimantan.

The research started on July 2017 and finished on September 2017. The writer observed the 11<sup>th</sup> MIPA 1 graders in academic year 2017/2018 when they

studied English subject. The English subject was taught every once a week. The writer observed three meetings during a month observation.

### **C. Subject and Object**

The subjects of this research consist of 60 students and 1 teacher of MAN 3 Banjar. The object of this research is classroom interaction in the XI MIPA 1 graders of MAN 3 Banjar consist of 30 students with 19 females and 11 males student.

### **D. Source of Data**

The main instrument of the present study is the writer who investigate this study. There are three sources of data that used by the researcher. The first, is observation. In this section, the writer sit in the best position and observed the situation some times. The second, is recording or videotaping. When observed, the writer no time using observation tally sheet, so the writer using videotaping and recorded the learning process from beginning until the end learning while 2 hours to help the research. The third is using Flanders Interaction Analysis Categories System (FIACS) Technique.

### **E. Data Collection**

In this study, data were collected by doing observation and analyzing video recording. First, the writer involved in the class for observation and the second, the writer recorded the interaction between teacher and students by using

video recording.

Creswell (2009 and 2007, p. 166 and p. 118) notes that “data collection procedures in qualitative research include collecting information through unstructured or semi-structured observation and interviews, documents and visual materials, as well as establishing the protocol for recording information”. Data Collection is a series of interrelated activities aimed of gathering good information to answer the question.

The steps of data collection involve in several steps:

a. Observation

The witer will observe the 11<sup>th</sup> MIPA 1 graders of MAN 3 Banjar and sit behind the students. The writer will notice and observe the interaction between teacher- students during teaching and learning process .

b. Record or videotaping

To make easier analyze the data, the writer will record teaching and learning process. The writer will record the lesson in classroom three times on three meetings. So after the writer recorded in three meetings, the reasearcher will make the conclusion that the interaction between teacher and students in that is include how much the percentage of talking time in that classroom and include in characteristic what.

## **F. Data Analysis Procedure**

The data organized and transcribed analyzed using a qualitative method and the characteristics is descriptive in nature. According to Creswell (1998) and

Lodico et al, (2006), as cited by Nasrulloh (2013, p. 36 ), data analysis in qualitative research is inductive processes.

The steps of data analysis involve in several steps:

The instrument in this research is FIACS (Flander's Interaction Analysis Categories System) Technique that was developed by Flander (1970) and has been used extensively in various studies regarding classroom interaction. FIACS is a standardized check list type instrument which has the following steps as the procedures:

### **Step 1: Transcribing**

The data gathered will be transcribed first, and then interpreted and analyzed descriptively further. The first step of the analysis is transcribing the data of video-taping. Burns (1996 as cited in Primadani 2014, p. 34) believes that transcription provides opportunity to review a "live" interaction and the luxury of being able to analyze: (1) the style of interaction, (2) the result of interaction, (3) the relationship of the interactants, (3) the purpose of the interaction and whether it was achieved, (4) the development of the interaction, (5) the strategies adopted by the interactants, (6) the turn taking and turn type patterns, and (7) the sociocultural values which informed the interaction.

Based on the advantages of data transcription, the writer considered to do transcribing as the first thing to do before analyzing the data. In this part teacher talk and learner talk based on the video is written down word by word. The teacher talk is labeled as "T", and the learners' is "Ss", and individual learner's is

“S”. The transcribing process is done to analyze the classroom interaction by looking at the language used in classroom by both, the teacher and the students.

### Step 2 : Coding and Analyzing the Data

After the data of video-taping is completely transcribed, it was encoded into the categories of teacher talk and learner talk based on FIACS that has been elaborated in chapter II. Every statement of teacher and students, then, should be classified based on the number of the teacher talk and learner talk characteristics as follows:

#### CATEGORIES OF FIACS

**Table 3.1** Flander’s Interaction Analysis Categories System (FIACS)

Teacher Talk		Student Talk
Indirect Influence	Direct Influence	
<p><b>1. Accepts Feeling:</b> Accepts and clarifies the feeling tone of the students in a non-threatening manner. Feeling may be positive or negative. Predicting or recalling feeling is included.</p> <p><b>2. Praises Or Encourages:</b> Praises or encourage student actions or</p>	<p><b>5. Lecturing:</b> Giving facts or opinion about content or procedure with his own ideas, asking rhetorical question.</p> <p><b>6. Giving Directions:</b> Directions, commands, or orders to which a student is expected to comply.</p> <p><b>7. Criticizing Or Justifying Authority:</b> Statements intended</p>	<p><b>8. Students Talk-Response:</b> A student makes a predictable response to teacher. Teacher initiates the contact or solicits student statements and sets limits to what the student says.</p> <p><b>9. Students Talk Initiation:</b> Talk by students which they initiate. Unpredictable statements in response to teacher.</p> <p><b>10. Silence Or Confusion:</b> Pauses, short periods of silence, and periods of confusion in which communication cannot be</p>

<p>behavior.</p> <p>Jokes that release tension, not at expense of another individual, nodding head or saying “um hum?” or “go on” are included.</p> <p><b>3. Accepts Or Uses Ideas Of Students:</b></p> <p>Clarifying, building, or developing ideas suggested by a student.</p> <p><b>4. Ask Questions:</b></p> <p>Asking a question about content or procedure with the intent that a student answers.</p>	<p>to change student behavior from non-acceptable to acceptable pattern; bawling someone out; stating why the teacher is doing what he is doing; extremely self-reference.</p>	<p>understood by the observer.</p>
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Source: Flander (1970 adapted fom Hopskin 2008:100)

The table above is the Categories of FIACS Technique. There are divided in two columns, that are teacher talk and student talk. Teacher talk divided into two categories named indirect and direct influence. In the indirect influence, there are 4 categories likes accepts feeling, praises or encourages, accepts or uses ideas of students, and ask questions, and in the direct influence, there are 3 categories likes lecturing, giving directions, and criticizing or justifying authority. The second column is student talk and it divided into 3 categories likes student talk response, student talk initiation and silence or confusion.

In doing so, the writer must follow suggested some rules (Flanders, 1967 cited in Nasrulloh (2013, p. 43), namely:

**Table 3.2** Some Rules for Deciding Category of FIACS Technique

<b>Rule 1</b>	When it is not certain in which of two or more categories a statement belongs, choose the category that is numerically farthest from the category 5. For e.g., if an observer is not sure whether it is 2 or 3 then choose 2. If in doubt between 5 and 7, he chooses 5.
<b>Rule 2</b>	The observer should not involve his personal viewpoint. If a teacher attempts to be clever, students see his statements as critics of students; the observer uses category 7
<b>Rule 3</b>	If more than one category is active in a span of 3 seconds, and then all the categories should be recorded. If after 3 seconds, no category changes, then the same serial number should be repeated in the next 3 seconds.
<b>Rule 4</b>	If the time period of silence exceeds 3 seconds, it should be recorded under the category No.10
<b>Rule 5</b>	When teacher calls a child by name, the observer is supposed to record a 4th category.
<b>Rule 6</b>	When the teacher repeats the student's answer and the answer is a correct, that is recorded as a category No. 2. This tells the student that he has the right answer and therefore functions as praise or encouragement.
<b>Rule 7</b>	When a teacher listens to a student and accepts his ideas for a discussion, then this behavior belongs to category No. 3.
<b>Rule 8</b>	The words "All is ok", "yes", "yah", "hum", "alright", etc belong to the category No. 2. (Encouragement)
<b>Rule 9</b>	If a teacher jokes without aiming at any students, this behavior belongs to the category No. 2. But if he makes any joke aiming at some particular students, then it belongs to the category No. 7
<b>Rule 10</b>	When all the students respond to a very small question collectively, then the serial number of category 8 is recorded.

Source: Flander (1970 adapted from Nasrulloh 2013)

Below is the data transcription's example that the first step to do the research. The transcription is from the video recording, and all of interaction between teacher and student will describe in the *Table 3.3* below:



**Table 3.3** Classroom Verbal Interaction Transcription

Actual Classroom Verbal Interaction	Recorded as
Teacher : What's the shape of a pyramith?	4
Students: triangle	8
Teacher : Yes, right!	2
Students : (silent)	10
The shape is triangle.	9

In the table above is example of transcription the interaction between teacher and students in the classroom. The column 1 is the interaction and the column 2 is the coding of category. For example, in column 1 there is teacher said "What's the shape of a pyramith?", it included in the category number 4 in column 2 because that is Teacher Talk and the category is Ask Question (*see in Table 3.1*) and next is the student said "triangle", it included in the category number 8 in column 2 because that is Student Talk and the category is Student Talk Response. It could be seen that the student gave the response to the teacher with said "triangle".

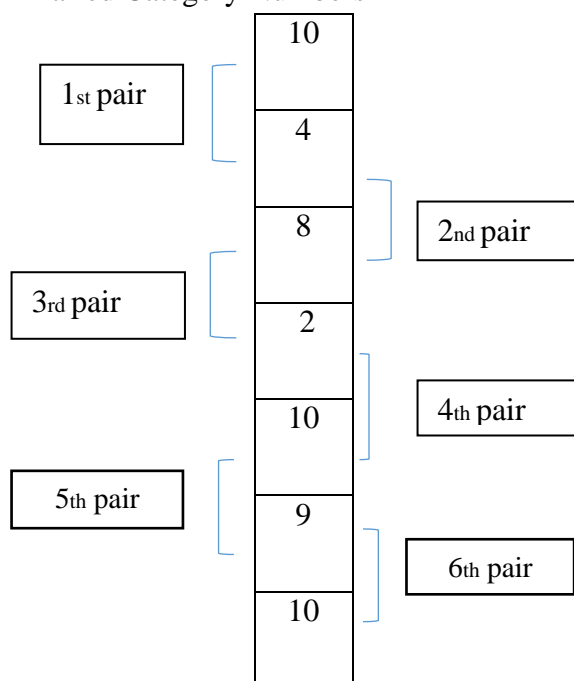
Each number describes the type of verbal interaction and who is speaking. Every time the verbal interaction change, a new number is recorded. If the same verbal interaction continues for more than three seconds, the same number will be recorded.

### Step 3: Pairing the Coded of Interaction

The next step is pairing the coded of interaction between teacher and students. In this step, the writer will pairing and focus in column 2 which includes the number of coding likes in *table 3.3* especially in column 2 showed that as recorded.

For example an observation recorded is 4, 8, 2, 10, 9. Hence, the beginning and the end of the coding should have the same number of categories. It is the tradition of adding number 10 in the beginning and at the end. Therefore, the above numbers were written in this way 10, 4, 8, 2, 10, 9, 10.

**Figure 1** Paired Category Numbers



After did the transcription and put the coded, the next step is paired category numbers. So in the figure above, there is some pairs. From the *table 3.3*, the writer will pair the category numbers in column 2. Then, when the writer done until end



	6											0
	7											0
<b>Student Talk</b>	8				I							1
	9										I	1
	10		I							I		2
	Total	0	1	0	1	0	0	0	1	1	2	6 (N)

In the *table 3.4* is plotted the data into the matrix with form tally sheet. There are 10 columns and 10 rows above. The numbers from 1 until 10 is categories of FIACS. For example: number 1 is categorie named Accepts feeling in category Teacher Talk. Number 2 is category named Praises or Encourages in Category Teacher Talk. In explaining before, the category of Teacher Talk consist of Category number 1 until 7 and the category 8 until 10 is Student Talk Category. Next, the columns and rows in category 3 is Accepts or Uses Ideas of Students, number 4 is Ask Questions, number 5 is Lecturing, number 6 is Giving Direction, number 7 is Criticizing or Justifying Authority, number 8 is Students Talk Response, number 9 is Students Talk Initiation and number 10 is Silence or Confusion. After the writer get the data and put the tally in the sheet, the writer will make total in every columns and rows using symbol “N”.

### Step 5: Interpreting the interaction matrix

In a complete matrix, some areas have tallies than others. A heavier concentration of tallies in a certain area gives information about who is talking and what kind of talking is taking place.

Below is the figure that concentration area on interaction matrix. In this figure, the writer will show the dominant that happen about the characteristics of interaction between teacher and student in classroom while teaching – learning process.

**Figure 2** Concentration Area of Interaction Matrix

	1	2	3	4	5	6	7	8	9	10	Total
1	TEACHER SUPPORTS			CONTENT CROSS				STUDENT PARTICIPATIONS			
2											
3											
4	CONTENT CROSS										
5											
6				CONTENT CROSS		TEACHER CONTROL		STUDENT PARTICIPATIONS			
7											
8											
9											
10											
Total											

The explanation about *figure 2* above as follow:

1. Content Cross:

Content cross above is showed by red colour and it is showed that the red one or the content cross is a heavy concentration in a column 4 and 5 and row 4 and 5 indicates teacher dependence on questions and lectures.

## 2. Teacher Control

Teacher control above is showed by blue colour and it is showed that the blue one or the teacher control is a concentration on column and row 6 and 7 indicates extensive commands and reprimands by the teacher.

## 3. Teacher Support

Teacher support above is showed by pink colour and it is showed that the pink one or the teacher support is a heavy concentration of talies in column and row 1,2, and 3 indicates that the teacher is reinforcing and encouraging students.

## 4. Student Participation

Student participation above is showed by green colour and it is showed that the green one or the student participation is a concentration of tallies in 8 and 9 reflects student responses to the teacher's behaviour (Flanders, 1967 cited in Nasrulloh, 2013, p. 46).

5. Column and row 10 is not included in four characteristics above because the number of 10 is when student silent, confuse, and pauses. In that column and row, the teacher and student has not have interaction.

## **STEP 6 : Calculating the Data**

After the data was transcribed and coded into several categories, the next step is calculating the amount and the percentage of each category. Although this

research uses qualitative research design, a quantitative analysis is also needed in order to help revealing the answer of the first research question. As Chaudron (1988) as cited in Primadani (2014, p. 35) believes that interaction analysis has not pursued quantitative analysis, although measurement of the frequency of specific behaviors implied a quantitative focus. It means that in qualitative research, quantitative analysis is also needed, in this research, to calculate the percentage of teacher talk and learner talk categories based on Flanders Interaction Analysis Categories System (FIACS) Technique. This step of analysis attempts to answer the first research question which is related to the amount of teacher talk categories that are used in class. The result of quantitative analysis will also lead to the information about the amount of learner talk, which category appears as the response to particular category of teacher talk, and also which one dominates another. The writer used it to find out the percentage of teachers and students talk during classroom interaction. Below are the formulas:

### **1. Teacher Talk Ratio / Percentage of Teacher Talk (TT)**

The tallies of first seven categories are added and divided by the total tallies of the matrices (N) and hence the percentage can be calculated.

C = Total the Column of Interaction Matrix

N = Total tallies of the matrices

$$TT = \frac{C1+C2+C3+C4+C5+C6+C7}{N} \times 100\%$$

N

## 2. Indirect Teacher Talk Ratio (ITT)

It indicates teacher actions in encouraging and supporting students' participation. Its percentage can be calculated by adding the tallies of the first four categories and dividing by the total tallies of the matrix (N)

$$\text{ITT} = \frac{\text{C1}+\text{C2}+\text{C3}+\text{C4}}{\text{N}} \times 100\%$$

## 3. Direct Teacher Talk Ratio (DTT)

It indicates the teacher actions restricting student participation. In this ratio, the tallies of 5th, 6th and 7th categories are added and divided by "N" to calculate the percentage.

$$\text{DTT} = \frac{\text{C5}+\text{C6}+\text{C7}}{\text{N}} \times 100\%$$

## 4. Students' Talk Ratio/Percentage of Students Talk (PT)

It indicates verbal activities of students in response to the teacher. In this ratio, the tallies of 8th and 9th categories are added and divided by "N" to calculate the percentage.

$$\text{PT} = \frac{\text{C8}+\text{C9}}{\text{N}} \times 100\%$$



## 5. Silence or Confusion Ratio (SC)

It represent silence during teaching which may be due to confusion or any other reason. In this ratio, the tally of 10th category and divided by “N” to calculate the percentage.

$$SC = \frac{C_{10}}{N} \times 100\%$$