III. RESEARCH METHOD

This chapter contains some crucial elements of research method related to the topic under discussion. In this part the researcher gives explanation of the research method used in this research.

3.1 Research Design

This research was classroom interaction analysis research. Interaction is essential for language learning which occurs in and through participation in speech events, which is, talking to others, or making conversation (Van Lier, 1988:77 –78). In this research, the researcher observed and recorded the interaction between the teacher –students and students –students that occurred in teaching learning process of English subject through video recorder in different study program at senior high school students.

The researcher recorded by using video recorder and observed the English classroom interaction in natural science class and social science class of the second grade student of SMA N 1 Gadingrejo by giving number categories based on FIAC. Inter rater was involved in analyzing the data in order to make the findings more consistent. The English teachers of natural science class and social science class were asked to teach the students as usual. The material that was learnt by the students was about hortatory exposition text. The teaching learning

process that was recorded used one lesson plan. It was aimed to see whether the patterns of classroom interaction are incidental or continual. Flanders Interaction Analysis was used to analyze the patterns of teacher talk and student talk that occurred in the teaching learning process of those two classes.

Flanders Interaction Analysis Categories was used to analyze the classroom interaction of English subject including the verbal and non –verbal interaction of teacher –students and among students. It was used to see the patterns of classroom interaction in XI IPA 4 and XI IPS 2 that became the sample of this research. It was also used to see the difference of interaction in these two classes. By tabulating the data from classroom interaction transcription, the difference of the interaction could be seen. From data tabulation in the matrix, the difference of interaction was interpreted in four criteria. They were the percentage of TT, ST and silence, direct and indirect influence, positive or negative reinforcement and students' participation.

3.2 Data

The data of this research was the verbal and non–verbal interaction between the teacher and students of the class XI IPA 4 and class XI IPS in English classroom interaction that was collected through video recorder. The verbal interaction consisted of the utterance of the teacher and students. Non-verbal interaction consisted of gestures or facial expression while they interacted.

3.3 Sample

Based on the pre –observation by interviewing the teachers of natural science and social science classes of the second grade students in SMA N 1 Gadingrejo, there were four natural science classes and four social science classes. The participation of the students in classroom interaction in natural science classes are in the same level such as in fluency, grammar, vocabulary, pronunciation and comprehension they had same ability. Sometimes they mispronounced the words or incorrect grammar but they were able to communicate in English and conveyed what they meant.

Likewise, in social science classes, the interaction in these classes is in the same level such as in fluency, grammar, vocabulary, pronunciation and comprehension they had same ability. They often could not understand what teacher or their friends talk. Hence, the teacher should translate it into bahasa Indonesia to make they understand. They also mispronounced the words and incorrect grammar. They rather got difficulties to communicate in English.

Therefore, the researcher used theoretical sample of non –probability sampling in determining the sample of the research. Theoretical sample or purposive sample has purpose that person or case that is chosen can represent the answer of research questions (Setiyadi, 2006: 44). In accordance with the definition, the sample of this research was class XI IPA 4 and class XI IPS 2.

 These two classes were chosen because based on the pre –observation by interviewing the teachers of natural science and social science classes of the

second grade students in SMA N 1 Gadingrejo, these two classes had high potency to answer the research question of this research. The objectives of this research were to find out the patterns of TT and ST in different study program and the difference of their interaction. Thus the sample of the research should be active in the interaction. From four natural science classes at second grade student of SMAN 1 Gadingrejo, the most active class was class XI IPA 4 and from four social science classes, the most active was class XI IPS 2.

Each class consists of 31 students who are taught by different teachers. The students of class XI IPA 4 were very active in the interaction in English class. They competed each other to ask as much as question in discussion section. They were active verbally by asking question and physically by using gesture in interaction. It was influenced by the teacher that always supported the students to be active in the class. The teacher gave addition points for the students who were active in discussion. As the result almost of the students in class XI IPA 4 followed the class actively.

In their teaching learning process of English class the teacher almost used English while in pre activity until post activity. The teacher always reminded the students who spoke in bahasa Indonesia to change into English when they gave comments or asked question. It made the students accustomed to use English in the teaching learning process while they asked question or gave suggestion.

 In the other hand, the students of class XI IPS 2 were not as active as the students of class XI IPA 4. There were only two to five students who followed the class actively and spoke English fluently. As same as the English teacher of natural

science, the English teacher of social science class also motivated the students to be active in interaction. The teacher required each group to ask question for the representative group that presented the material. It seemed rather effective to involve the students' participation, but based on the fact only some students who seemed enjoy the discussion.

Some students could not understand what the representative group presented. In addition when the teacher asked some question in English they confused about the meaning. It made the teacher should translate it into bahasa Indonesia. Moreover they also faced some difficulties when they wanted to answer the question by using English. It made them have to communicate in bahasa Indonesia to convey the meaning they produced.

3.4 Instrument

The instrument of this research was Flanders Interaction Analysis Categories (FIAC) that was gathered through recording and observation. The researcher asked someone to record the classroom interaction through video recorder to see the interaction that occurred in the classroom. Video recorder was placed in front of the class to record the verbal and non –verbal interaction of teacher and students that occurred in classroom interaction of English subject in XI IPA 4 and XI IPS 2. The verbal and non –verbal interactions that were recorded focused on the group presentation and question –answer section in teaching learning process. The verbal and non –verbal interactions were analyzed by using Flanders Interaction Analysis Categories (FIAC).

FIAC was used to categorize the patterns of teacher talk and student talk based on its ten categories. They are accepting feeling, praising or encouraging, accepting or using student's idea, asking question, lecturing, giving direction, criticizing or justifying authority, student's response, student's initiation and silence. It was also used to see the difference of teacher talk in these two classes related to the patterns occurred in class XI IPA 4 and class XI IPS 2 based on the four description from the tabulated data in matrix.

Moreover, the researcher observed classroom interaction based on ten categories proposed by Flanders. The researcher wrote the number categories to code teacher talk and student talk in class XI IPA 4 and class XI IPS 2 in of English subject. The researcher observed the teaching learning process in pre activity, while activity and post activity. The data that was gathered through observation sheet was aimed to support the data from recording.

3.5 Validity and Reliability of the Data

In qualitative research, the way was combined to make the data more reliable. Qualitative researcher tries to combine the data collecting technique such as interview, observation, document and etc. in collecting the same data (Setiyadi, 2006: 30). In this research the data collection was used was recording and observation. In addition, inter rater was also involved in order to make the findings more consistent. The inter rater was other researcher that also did research in SMA N 1 Gadingrejo.

Concerning to the validity of the data, in qualitative research it relates to the data that is collected, so the researcher always tries to make the collected data authentic (Setiyadi, 2006: 31). In this research the use of recording technique of the classroom interaction gave authentic data. The recording of classroom interaction was done in two times for each class.

3.6 Research Procedures

In conducting the research, the researcher did the following steps:

1. Formulating the research questions and the focus of the research.

2. Determining the case, the way of collecting and analyzing the data as well as reaching the conclusion.

3. Finding the subject of the research.

4. Discussing with the teacher about the material that would be taught and asking the lesson plan that was used by the teacher.

5. Recording the activities and conversation of the teacher and students in the classroom and observing the teaching learning process.

6. Making transcription of the data and coding the data.

7. Analyzing the data.

8. Making report of the research.

3.7 Data Collection

The data of the research was collected by two methods. They were as follows:

1. Video Recording

    The classroom interaction in class XI IPA 4 and class XI IPS 2 was recorded through video recorder. The interaction that was investigated included the verbal and non–verbal interaction of teacher and students that occurs in classroom interaction of English subject in XI IPA 4 and XI IPS 2. The researcher recorded the classroom interaction between the teacher and the students in those two classes in different time. Each class was recorded in two times. It had purpose to see the patterns of teachers talk and students talk in those two classes. The video recorder was in front of the class to record the interaction in classroom of English subject. The classroom interaction that was recorded was used one lesson plan about hortatory exposition text.

2. Observation

    The researcher was in the classroom to observe the interaction while the English class was proceeding. The researcher observed the classroom interaction by writing the categories number of teacher talk and student talk proposed by Flanders. The purpose of observation is to explain the situation being investigated, activities, person who are involved in an activity and relationships among them (Setiyadi, 2006:239).

The researcher observed the teaching learning process in pre activity, while activity and post activity. The data that was gathered through observation sheet was used to support the data from recording.

3.8 Data Analysis

The data that was obtained from recording and observation was analyzed by using Flanders Interaction Analysis Categories (FIAC). Flanders (1970) originally developed a research tool, namely Flanders Interaction Analysis (FIA), which became a widely used coding system to analyze and improve teaching skills. Classroom interaction analysis refers to a technique consisting of objective and systematic observation of the classroom events for the study of the teacher's classroom behavior and the process of interaction going inside the classroom. Flanders's system attempts to all categories of the verbal behavior to be found in the classroom interaction. It has two main categories: teacher talk and student's talk. A third category covers other verbal behavior, i.e., silence or confusion. Categories of Flanders Interaction Analysis (FIA) was used in this research are described in the following table.

Table 3.8. a. Table of Specification of Flanders's Interaction Analysis Categories (FIAC)

		Category Number	Activity
Teacher talk *indirect influence	Response	1.	**Accepts feeling**: Accepts and clarifies an attitude or the feeling tone of a student in a non –threatening manner. Feeling may be positive or negative. Predicting and recalling feelings are included.
		2.	**Praises or encourages**: Praises or encourages student action or behavior. Jokes that release tension, but not at the expense of another individual; nodding head, or saying "Um hm?" or "go on" and included.

		3.	**Accepts or uses ideas of students**: Clarifying or building or developing ideas suggested by a student. Teacher extensions of student ideas are included but as the teacher brings more of his own ideas into play, shift to category five.
		4.	**Asks questions**: Asking question about content to procedure, based on teacher ideas, with the intent that a student will answer.
*direct influence	Initiation	5.	**Lecturing**: Giving facts or opinions about content or procedures; expressing his own ideas, giving his own explanation, or citing an authority other than a student.
		6.	**Giving directions**: Directions, commands or orders to which a student is expected to comply.
		7.	**Criticizing or justifying authority**: Statements intended to change student behavior from non –acceptable to acceptable pattern; bawling someone out; stating why the teacher is doing what he is during; extreme self –reliance.
Student Talk	Response	8.	**Student –talk response**: Talk by students in response to teacher. Teacher initiates the contact or solicits student statement or structures the situation. Freedom to express own ideas is limited.
	Initiation	9.	**Student –talk Initiation**: Talk by students, which they initiate. Expressing own ideas; initiating a new topic; freedom to develop opinions and a line of thought, like asking thoughtful questions; going beyond the existing structure.
Silence		10.	**Silence or confusion**: Pauses, short periods of confusion in which communication cannot be understood by the observer.

After recording the interaction, the data was transcribed, coded and analyzed. In analyzing the data, the researcher categorized the transcription of teacher's and students' speech in terms of quantity utterance into ten categories proposed by Flanders in the table 3.8.a. From the transcription that was categorized by FIAC the patterns of teacher talk and student talk in XI IPA 4 and XI IPS 2 can be seen. The example can be illustrated as follows:

T: Open your books to page 160 and answer the first question, Bill? **[6]**
Bi: Spain and Portugal from the Iberian Peninsula. **[8]**
T: Very good, Bill. **[2]**
T: Who has the answer into next question? **[4]**
S: I don't know where we are. **[9]**
T: We are on page 160, the second question under exercise 1. **[5]**
T: And if you had been paying attention, you would have known where we are. **[7]**
T: Martha, can you continue by reading your answer to the second question? **[6]**

(The example is taken from Allwright and Bailey, 1991:202 in

Astuti, 2007: 30)

From the transcription above the researcher determined the patterns of teacher talk and student talk, for the example; based on the data above the researcher determined that the patterns of teacher talk occurred in the interaction. There was teacher-student (giving direction –student's response), teacher-student (asking question –student initiation) while student talk was student-teacher (student response –praises or encourages), and student-teacher (student initiation – lecturing).

Furthermore, based on the transcription above the researcher should categorize the data and write them down, 6, 8, 2, 4, 9, 5, 7, and 6. The entire series should begin and end with the same number. The convention used is to add 10 to the beginning and the end of the series. The data now become 10, 6, 8, 2, 4, 9, 5, 7, 6, and 10.

After the sequence of the number was collected, the number of category was tabulated in a 10 into 10 matrixes. The data entered in a 10x10 matrix so that the sum of column one equals the sum of row one, the sum of column 2 equals the sum of row 2, etc. The numbers are tallied in the matrix one pair at a time. For example the observer has written down the code numbers beginning with 6 as follows: 6,10,5,1,4,8,8,2,3,6,4,8,9,7. The first step is to make sure that the entire series begins and ends with the same number. By following the convention is to add 10 to the beginning and end of the series, unless 10 are already present.

So our earlier series now become10,6,10,5,1,4,8,8,2,3,6,4,8,9,7,10. The first pair in this case is 10 –6; the tally is placed in row 10, column 6 cell. The second pair is 6 –10, tally this in row 6, column 10 and so on. 'N' was always tabulated by N

−1 tallies in the matrix. In this case, we started a series of sixteen numbers and the series produce 15 tallies in the matrix.

Table 3.8.b. The Matrix of Data Tabulation

	1	2	3	4	5	6	7	8	9	10	Total
1				1							1
2		1									1
3						1					1
4							11				2
5	1										1
6				1						1	2
7										1	1
8		1						1		1	3
9							1				1
10					1	1					2
Total	1	1	1	2	1	2	1	3	1	2	15

Based on the matrix, the researcher described the matrix as follows:

1. The proportion of teacher talk, student talk, and silence or confusion:

The proportion of tallies in columns 1, 2, 3, 4, 5, 6 and 7, columns 8, 9 and column 10 to the total tallies indicates how much the teacher talks, the student talks and the time spent in silence or confusion. After several years of observing, it has been anticipated an average of 68 percent teacher talk, 20 percent of student talk and 11 or 12 percent silence or confusion.

2. The ratio between indirect influence and direct influence:

The sum of column 1,2,3,4, divided by the sum of columns 5, 6, 7 gave this ratio. If the ratio is 1 or more than 1, the teacher is said to be indirect in his behavior.

This ratio, therefore, showed whether a teacher is more direct or indirect in his teaching.

3. The ratio between positive reinforcement and negative reinforcement:

The sum of column 1, 2, 3 is to be divided by the sum of the columns 6, 7. If the ratio is more than 1 then the teacher is said to be good.

4. Student's participation ratio:

The sum of columns 8 and 9 is to be divided by total sum. The answer revealed how much the students have participated in the teaching –learning process.

From the convention above it can be seen the difference of teacher talk in classroom interaction of English subject in XI IPA 4 and XI IPS 2 based on those four criteria.