

CHAPTER III

METHODOLOGY

This chapter consists of four sections, the first section explains research method and the second section explores the population and sample. The third section explains data collection and the fourth section discusses data analysis and hypothesis.

3.1 Research Method

In order to investigate the science and social program students' perception toward teacher interpersonal behavior in teacher-students interaction and the difference perception between science and social students in this study the writer use descriptive comparative method. More over Gay cited in Stallone (2003:7) states descriptive method is collecting data in order to test hypotheses or to answer question concerning the status of the subject of the study.

The writer uses survey studies, where the writer takes the form of questionnaire of teacher interaction (QTI) that is sent out to students, in this study focus on students' perception of teacher interpersonal behavior therefore the English teacher as the personal object of this study. According to Cohen & Manion (1985) as stated in Nunan (1993: 140), surveys are the most commonly used descriptive method in educational research. Stallone (2003:3) states survey designs, in which the researcher seeks to describe trends, and administers a survey

or questionnaire to a sample or people in order to describe the attitudes, opinion, behaviors, or characteristics of the population.

There are two types of Survey Designs, Longitudinal (including trend, cohort, and panel studies) and Cross-sectional (including group comparisons and national assessment).

3.2 Population and Sample

3.2.1 Population

Brown (1990: 14) states that population is the entire group that is the interest in a study. In line with Brown, according to Arikunto (1996: 150) population is the entire study or research object. Furthermore as cited in S.Widianingsih paper (2005: 27) Supranto (2001:87) notes that population is the collection of all elements or object that will be researched. As mention before, the population of this study is class XI science and social program students at SMUN 14 Bandung. Class XI SMUN 14 Bandung consists of four science classes and four social classes. There are more or less forty students in one class.

3.2.2 Sample

Sample is representative of population characteristics. The writer takes students from science and social students, same teacher teaches them. Then, the writer uses Slovin (1960) formula.

The sample for this study is 114 science students and 114 social students class XI SMU Negeri 14 Bandung, then to measure differences between two groups the writer use t-test.

However if the assumption for t-test is not appropriate the writer considers some aspect such as research method, time, cost and condition to determine how much sample use in this research. As consequently, the sample is not as much as the sample mentioned above.

More over because this research uses descriptive methods, so that based on Ruseffendi (1994: 95) stated samples for descriptive method only 10-20 % from the whole population. So that, the writer use Mann-Whitney U test to find out the different perception of teacher-students interactions between students from different program. Sample for Mann-Whitney U test relative small compare to t-test, maximum total sample for Mann-Whitney U test must less than 30 subject sample (Nugroho, 2005;115).

Therefore, it is possible to determine sample from science and social program students by taking 10-20 % from population. Population for science students are 160 students then sample is 17 % from 160 science students and the sample is 27 science students. Population for social students is 160 students then sample is 18 % from 160 social students and the sample is 29 social students. Total sample from each group is different because Mann-Whitney U test need different total sample from each groups. In this study, the writer takes random sample from population by making lottery and the English teacher choose the class that will be the sample in this study.

3.3 Data Collection

3.3.1 Instrument

Instrument is a mean to collect data in a research. In this study, the writer uses two instruments in collecting the data:

3.3.1.1 Questionnaire

Questionnaire is a relatively popular means of collecting data. As stated in Nunan (1993: 143) questionnaire enables the researcher to collect data in field setting, and the data themselves are more amenable to quantification than discursive data. The questionnaire item in this research is a closed item that used scale question type.

The English version of Questionnaire on Teacher Interaction (QTI) translated and adapted in to Indonesian version. Indonesian version of questionnaire used in this study. The questionnaire items in QTI is designed to asses the interpersonal behavior of teachers and interaction with students in the classroom (Lourdusamy & Khine, 2001).

The QTI consists of four sectors showing positive interpersonal behavior of teacher and four sectors showing negative interpersonal behavior. The behavior aspects measured by QTI are Leadership (DC), Helping/friendly (CD), Understanding (CS), Students Responsibility/Freedom (SC), these behavior aspect are positive interpersonal behavior of teacher. The other behavior aspects measured by QTI are Uncertain (SO), Dissatisfied (OS), Admonishing (OD) and Strict (DO) and these behavior aspects appear to be negative interpersonal behavior of teacher.

Table 3.1. table of description of aspects interpersonal teacher behavior

Aspects of Interpersonal teacher behavior in QTI	Description of Scale	Sample item
Leadership (DC)	The extent, to which the teacher leads, organizes, gives orders, determined procedure and structures the classroom situation.	This teacher talks enthusiastically.
Helping/Friendly (CD)	The extent, to which the teacher shows interest, behaves in friendly or considerate manner and inspires confidence and trust.	This teacher helps us with our work.
Understanding (CS)	The extent, to which the teacher listens with interest, empathizes, shows confidence and understanding and is open with students.	This teacher trust us
Student responsibility/freedom (SC)	The extent to which the teacher gives opportunity for independent work, gives freedom and responsibility to the students	We can decide something in this teacher's class
Uncertain (SO)	The extent to which the teacher behaves in uncertain manner and keeps a low profile.	This teacher seems uncertain
Dissatisfied (OS)	The extent, to which the teacher expresses dissatisfaction, looks unhappy, criticizes and waits for silences.	This teacher thinks that we cheat
Admonishing (OD)	The extent, to which the teacher gets angry, express irritation and anger, forbids and punishes.	This teacher gets angry.
Strict (DO)	The extent to which the teacher checks maintain silence and strictly enforce the rules.	This teacher is strict

According to Koul (2004), the QTI was developed to evaluate students' perception toward eight aspects of interpersonal teacher behavior in teacher-

students behavior. Teacher interpersonal behavior are several behaviors that make a teacher become an effective person in communicating the lesson clearly to students, in facilitating his or her students' learning, and in helping his or her students overcome problems that block their learning.

The QTI used in this study was adapted and translated from the 48-item version of QTI. Measurement scales used in this study is interval scale using a five Likert-type scale, each item ranging from Almost Never (1) to Almost Always (5). The respondents should choose one of the following options-Almost never (1), Seldom (2), Sometimes (3), Often (4), and Almost Always (5). The framework of the QTI can be shown in the following table.

Table 3. 2 The Framework of QTI

No	Aspects	Item Number
1	Leadership	1, 5, 9, 13, 17, 21
2	Helpful/ Friendly	25, 29, 33, 37, 41, 45
3	Uncertain	2, 6, 10, 14, 22, 30
4	Students' responsibility/Freedom	15, 26, 34, 38, 42, 46
5	Uncertain	3, 7, 11, 19, 20, 23
6	Dissatisfied	27, 31, 35, 39, 43, 47
7	Admonishing	4, 8, 12, 16, 18, 24
8	Strict	28, 32, 36, 40, 44, 48

3.3.1.2 Interview

In order to carry out the information and actual data about the students' perception toward their teacher interpersonal behavior, the writer have to interview ten students of science program and ten students of social program of class XI in SMA Negeri 14 Bandung. Data result from interview describe factual and reality perception of some students from science and social students.

As cited in S. Widianingsih paper (2005: 30) Punch (1999: 174) stated 'interview is a very good way of assessing people's perceptions, meaning, definition of situation and constructions of reality'.

3.3.2 Steps in Collecting the Data

There are some steps in collecting the data, following explanation describe each steps in collecting the data:

3.3.2.1. Administer Questionnaire of Teacher Interaction to Science Students

The questionnaire administered two times for science students. The questionnaire was sent out to the first group of science students (class XI IPA 2) on April 23, 2007. The second and the third group of science students (class XI IPA 1 and class XI IPA 3) completed the Questionnaire of Teacher Interaction on April 26, 2007. The Completion of Questionnaire of Teacher Interaction (QTI) is involved about 45 minutes of class time. The Questionnaire informs how science students perceive the English teacher interpersonal behavior. The questionnaire results in scores.

3.3.2.2 Administer Questionnaire of Teacher Interaction to Social Students

The questionnaire administered for social students on April 25, 2007. The questionnaire was sent out to the first and second group of social students (class XI IPS 1 and class XI IPS 2). The third groups of social students (class XI IPS 3) completed the Questionnaire of Teacher Interaction (QTI) on April 27, 2007. The Completion of Questionnaire of Teacher Interaction (QTI) is also involved about 45 minutes of class time. The Questionnaire informs how social students perceive the English teacher interpersonal behavior. The questionnaire results in scores.

3.3.2.3. Administer Interview to Science Students

The list of question for the interview derived from Questionnaire of Teacher Interaction. The writer has to interview 10 students of science students in order to carry out the actual data about the science student perception of teacher interpersonal behavior. The interview administered on May 16, 2007. The writer interviewed 10 science students of class XI IPA1 (the sample are chosen by the English teacher to be the interviewee in this interview). The interview process took time 90 minutes of class time, it held in Library of SMA Negeri 14 Bandung.

3.3.2.4. Administer Interview to Social Students

The writer has to interview 10 social students of class XI IPS 1 (the sample are chosen by the English teacher to be the interviewee in this interview) in order to get actual students perception toward interpersonal teacher behavior. The interview administered on May 19, 2007. The interview process involve about 90 minutes of class time held in library of SMA Negeri 14 Bandung. The list of question for the interview derived from Questionnaire of Teacher Interaction. The list of questions for interview process for social students is similar to the question list interview for the science students.

3.4 Data Analysis

3.4.1 Questionnaire Result Analysis

Analysis data from the questionnaire explains the following steps:

3.4.1.1. Testing the Validity of the QTI

Brown states (1988: 101) test validity is the degree to which a test measure that is claims to be measuring. As stated by Sax (1979) cited in S. Widianingsih paper (2005:31) validity refers to the extent to which measurements achieve the purpose for which they were assigned. The instrument was tried out to the 37 class XI students of SMUN 14 Bandung in order to find the item validity.

To calculate the validity of instrument, the writer use SPSS 12.0 version. An item is valid if Corrected Item-Total Correlation is higher than r_{table} . In this study, r_{table} in α 0.05 with $df = n-2$ (35) was 0.2746. From 48 items of statements in the questionnaire, there are 12 items left to because stated invalid. Below is the new framework of QTI:

Table 3. 3 the New Framework of QTI

No	Aspect	Item Number	Total
1	Leadership	1,5,9,13,21	5
2	Helpful/Friendly	25,29,37,41,45	5
3	Understanding	2,6,10,22,24	5
4	Students Responsibility/ Freedom	30,34,38,46	4
5	Uncertain	11,15,19,23	4
6	Dissatisfied	31,35,39,43	4
7	Admonishing	4,8,18,20	4
8	Strict	28,32,36,40,44	5
		TOTAL	36

3.4.1.2. Testing Reliability of QTI

Reliability shows degree of consistency of an instrument. In order to find the reliability of the QTI instrument, the writer use SPSS version 12.0 and the value of coefficient alpha reliability is 0.539364. Though the result shows that the value of coefficient alpha reliability is 0.539364,

which means it has moderate index of correlation, but it shows that the instrument is reliable.

3.4.1.3. The writer takes the form of questionnaire and sends it to groups of sample as the respondents so that the writer collects the data.

3.4.1.4. Scoring Students' response

Table 3.4 Scoring Students' Response

Category of Response	Almost Never	Seldom	Sometimes	Often	Almost Always
Score	1	2	3	4	5

The respondents choose the higher scale score of four positive aspect behaviors in QTI it means the more teacher shows positive behavior to their students. For the other four negative aspects, it shows the higher the scale score, the more teacher shows negative behavior.

3.4.1.5. Finding out the frequency of each response per item of science and social student

3.4.1.6. Calculating the percentage of each response of science and social students

by using this formula:

$$P = \frac{f_o}{n} \times 100\%$$

Note:

P = percentage

f_o = frequency of answer

n = total respondent

3.4.1.7. Making a table that consists of some columns of statements, frequency, and the percentage of science and social students

3.4.1.8. Calculating the total frequency and average of science and social students

3.4.1.9. Classifying the average percentage into the form of interval as follows:

00.00 %	= none
00.01 % - 24.99 %	= a few of
25 % - 49.99 %	= nearly half of
50 %	= half of
50.01 % - 74.99 %	= best part of
75 % - 99.99 %	= nearly all of
100 %	= all of

Cited in S. Widianingsih paper (2005: 34) stated by Suryadi 1987 in Suryana: 2005.

3.4.2. Interview Result Analysis

The interview is developed from the item questionnaire to carry out the real perception from the students both science and social program students. The result of interview will be presented in straightforwardly as in the result of interview and systematically. Tables, which divided in to two columns, use to present the information and actual data from the result of interview that contains the difference perception between science and social students toward interpersonal behavior.

3.4.3. Finding out the Difference at Student's Perception on English teacher interpersonal behavior in teacher-students interaction

Research method use in this study is descriptive, for measuring differences perception in this study the writer use t-test then sample that used in this study is

large number. Before investigating difference perception using t-test, the writer checks normality distribution of data and equal variances of data by using SPSS version 12. If the assumption of normal distribution in each of the two samples and equal variances is not fulfilled for the requirement of t-test so the difference perception between science and social program students toward their English teacher interpersonal skill analyzes by Mann-Whitney U test. The writer calculates t-test and Mann-Whitney U test using SPSS version 12.

Mann-Whitney U test is a kind of t-test however; there are no several conditions in using t-test such as normal distribution in each of the two samples and equal variances. Furthermore, Mann-Whitney u test is a non-parametric test for assessing whether two samples and it is distribution free. The sample used in this research is smaller than the other studies using QTI as the instrument. Sample for Mann-Whitney U test relative small compare to t-test, maximum total sample for Mann-Whitney U test is 30.

Minium, King & Bear (1993: 479) cited in S.Widianingsih paper (2005: 34), states that the Mann-Whitney U test is a popular alternative to the t-test of difference between means of the independents sample, but when sample are small and it have serious doubts about the distributional assumption necessary for the t-test. However, the non-parametric statistics is less accurate and efficient compare to parametric statistics. Because Brown states (1990: 175) Mann-Whitney U test is a much weaker statistic than the t-test and should be applied only when the t-test is not appropriate. More over, Siegel (1988: 36) states:

Another objection to non-parametric statistical tests is that they are not systematic, where as parametric statistical tests have been systematized, so

that if all the assumption of a parametric statistic met in the data and the research hypothesis could be tested with a parametric test, then non-parametric statistical test are wasteful.

Hypotheses for this study, H_0 (null hypothesis): There is no significant difference between science and social students or H_1 : There is significant difference between science and social students.

If the value of t observed $< t$ critical/table, accept H_0 and If the value of sig (2-tailed) $>$ level of significant ($\alpha = 0.05$), accept H_0 . Furthermore, if the value of t observed $> t$ critical/table, reject H_0 or if the value of sig (2-tailed) $<$ level of significant ($\alpha = 0.05$), reject H_0 .

For Mann-Whitney u test results the critical value of normally distributed z corresponding to $\alpha = 0.05$ for a two-tailed test is -1.96 . If the value of z more than -1.96 or less than 1.96 we can accept the null hypothesis and if the value of z is less than -1.96 or more than 1.96 we can reject the null hypothesis.

