

CHAPTER 4

DISCUSSION

In this chapter the writer would like to divide the discussion into two subchapters : the findings, and the analysis. In the first subchapter, that is the findings, the writer tries to present the data scores into tables. Meanwhile, in second subchapter, the analysis one, the writer wants to analyze the data by using quantitative approach, and, furthermore interpret and conclude the result from the data analysis. In short, in the subchapter of the analysis, it would be divided again into : the Quantitative analysis of the data, Interpretation of the data analysis, and Conclusion of data analysis.

4.1 Findings

The data which are going to be analyzed were taken from the respondents' tests scores in the class of Structure V. The tests itself were distributed to students into two parts, before and after learning opportunity process. In other words, they sometimes call as pre- and post-test. Pre test is given before the learning process, meanwhile post-test is given after learning process. So, the scores they have got can be seen in this following table :

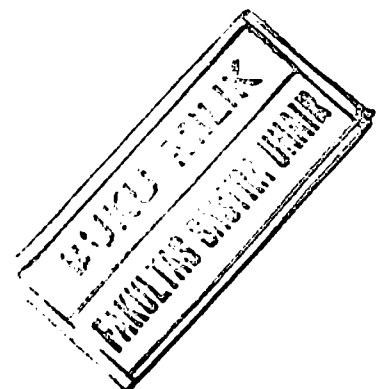


Table 1**The results of Structure V test**

No.	Respodents	PRE TEST	POST TEST
1.	B1	88	-
2.	B2	84	94
3.	B3	80	90
4.	B4	62	56
5.	B5	60	66
6.	B6	82	92
7.	B7	84	92
8.	B8	64	84
9.	B9	70	68
10.	D1	84	86
11.	D2	40	70
12.	D3	68	80
13.	D4	80	92
14.	D5	42	90
15.	D6	78	96
16.	D7	72	82
17.	D8	50	80
18.	D9	88	92
19.	D10	68	76
20.	D11	64	72
21.	D12	60	74
22.	D13	62	90
23.	D14	68	-
24.	D15	62	82
25.	D16	80	76
26.	D17	78	60
27.	D18	70	84
28.	D19	52	64
29.	D20	86	84

If we take a look at the above table, we can see that there are two students who did not attend and follow the post test. So, for them, who did not attend and follow, will be omitted from the sample. Furthermore, the terms pre- and post-tests will be substituted with the symbol letter X and Y; X represents the term for pre-test, while Y represents the term for post-test. The names of respondents will be replaced also by number in sequence. Thus, the table 1 will be changed like this :

Table 2

The Data of Tests Scores

No.	X	Y
1.	84	94
2.	80	90
3.	62	56
4.	60	66
5.	82	92
6.	84	92
7.	64	84
8.	70	68
9.	84	86
10.	40	70
11.	68	80
12.	80	92
13.	42	90
14.	78	96
15.	72	82
16.	50	80
17.	88	92
18.	68	76
19.	64	72
20.	60	74
21.	62	90

22.	62	82
23.	80	76
24.	78	80
25.	70	84
26.	52	64
27.	86	84

In the next sub chapter, the above table will be used as a primary data for the statistic analysis.

4.2 Analysis of the Data

4.2.1 Quantitative Analysis of the Data

4.2.1.1 Pearson Correlation Coefficient

Pearson Product Movement is used to test hypothesis of relationship, or in another words, it is correlation technique. Correlation is different from any of the inferential statistics, because this technique compares groups as groups, not the individual who compose them. Furthermore, in correlation, we are examining the strength of the connection between two characteristics which both arising from the same source or same individual, or at least, two variables with a common basis to them.

This such correlation is employed when both variables are expressed as interval data or ratio. This procedure was proposed by the English Statistician, Karl Pearson. Conceptually, the Pearson correlation coefficient is computed by:

$$r = \frac{\text{the degree to which X and Y vary together}}{\text{the degree to which X and Y vary separately}} = \frac{\text{co-variability of X and Y}}{\text{variability of X and Y separately}}$$

Other formulas have been derived from the basic definitional formula. One of the most convenient allows us to directly work with the original raw scores without the necessity of finding the means and standard deviations. Here is the formula :

$$r = \frac{N \Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{[N \Sigma X - (\Sigma X)^2][N \Sigma Y - (\Sigma Y)^2]}}$$

where : r = general symbol for correlation, correlation coefficient

ΣX = sum of the raw X scores

ΣY = sum of the raw Y scores

ΣXY = sum of the products of each X multiplied by each Y

ΣX^2 = sum of the squares of each X scores

ΣY^2 = sum of the squares of each Y scores

$(\Sigma X)^2$ = the square of the total sum of X scores

$(\Sigma Y)^2$ = the square of the total sum of Y scores

N = the number of paired scores

A correlation coefficient indicates both the direction and the strength of the relationship between two variables. The direction of relationship is indicated by the sign (+ / -), and the strength of the relationship is represented by the absolute size of the coefficient, i.e. how close it is to +1.00 or -1.00. The following is rough but useful guide to the degree of the relationship indicated by the size of the coefficients (whether positive or negative).

0.90 – 1.00	very high correlation	very strong relationship
0.70 – 0.90	high correlation	marked relationship
0.40 – 0.70	moderate correlation	substantial relationship
0.20 – 0.40	low correlation	weak relationship
less than 0.20	slight correlation	relationship so small as to be negligible

4.2.1.2 Test Of Significance For r

The test significance for r is similar to the one for Spearman's rho and uses the t distribution to decide whether or if there is enough evidence to reject the null hypothesis.

$$H_0 : r = 0$$

$$H_1 : r \neq 0$$

$$t = r \sqrt{\frac{n-2}{1-r^2}}$$

where,

r = the correlation coefficient calculated for the data

n = the sample size

df = degree of freedom

reject H_0 if $|t| > t_{\alpha/2, df = n-2}$

This test also useful when the researcher has only a small number of cases, whether randomly selected or not.

4.2.1.3 Coefficient of Determination

The proportional reduction in error interpretation in Pearson's correlation involves simply calculating r^2 . This quantity is called 'coefficient of determination', because it indicates how much of the variance in Y is explained by X.

Having known all the function of formula in the Pearson's correlation, we can start calculating the data. The hypothetical scores for twenty-seven respondents on two variables; as well as the totals needed for the calculation of r by the raw formula is represented on the following table :

Table 3
The Hypothetical Scores on Two Variables

No.	X	Y	X ²	Y ²	XY
1.	84	94	7056	8836	7896
2.	80	90	6400	8100	7200
3.	62	56	3844	3136	3472
4.	60	66	3600	4356	3960
5.	82	92	6724	8464	7544
6.	84	92	7056	8464	7728
7.	64	84	4096	7056	5376
8.	70	68	4900	4624	4760
9.	84	86	7056	7396	7224
10.	40	70	1600	4900	2800
11.	68	80	4624	6400	5440
12.	80	92	6400	8464	7360
13.	42	90	1764	8100	3780

14.	78	96	6084	9216	7488
15.	72	82	5184	6724	5904
16.	50	80	2500	6400	4000
17.	88	92	7744	8464	8096
18.	68	76	4624	5776	5168
19.	64	72	4096	5184	4608
20.	60	74	3600	5476	4440
21.	62	90	3844	8100	5580
22.	62	82	3844	6724	5084
23.	80	76	6400	5776	6080
24.	78	80	6084	6400	6240
25.	70	84	4900	7056	5880
26.	52	64	2704	4096	3328
27.	86	84	7396	7056	7224
	1870	2192	134124	180744	153660

The appropriate values are substituted and the raw correlation of Pearson's formula is used as it is shown in these following paragraphs :

$$\begin{aligned}
 r &= \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{[N \sum X - (\sum X)^2][N \sum Y - (\sum Y)^2]}} \\
 &= \frac{27 \cdot 153660 - (1870)(2192)}{\sqrt{[27 \cdot 134124 - (1870)^2][27 \cdot 180744 - (2192)^2]}} \\
 &= \frac{418820 - 4099040}{\sqrt{[3621348 - 3496900][4880088 - 4804864]}} \\
 &= \frac{49780}{\sqrt{[124448][75224]}} \\
 &= \frac{49780}{\sqrt{9361476352}}
 \end{aligned}$$

$$= \frac{49780}{96744.72}$$

$$= 0.51$$

It shows that the correlation coefficient values 0.51. It indicates that the correlation is positive and moderate; positive correlation occurs when an increase in one variable coincides with an increase in another, or in another words, it can be said that the students' knowledge increase as a result of the increasing in their learning process, but the strength of relationship between these two variables are substantial relationship only.

To be more sure for defending this result, we need more evidence about the result of r . Since the sample size in this data is consisting small number of cases. So, in order to testify the significance of r , the writer uses the second test.

$$t = r \sqrt{\frac{n-2}{1-r^2}}$$

$$= 0.51 \sqrt{\frac{27-2}{1-(0.51)^2}}$$

$$= 0.51 \sqrt{\frac{25}{1-0.2601}}$$

$$= 0.51 \sqrt{\frac{25}{0.7399}}$$

$$= 0.51 \sqrt{33.79}$$

$$= 0.51 \cdot 5.81$$

$$= 2.9631$$

From the table of percentage points of the t distribution in Appendix, it gives a critical t of 2.060 for $\alpha/2 = 0.05$ and $df = 25$. It is substituted into the rule that if :

$$|t| > t_{\alpha/2}$$

$$2.9631 > 2.060$$

From this, we can state that the null hypothesis is rejected with 0.05 probability that there is no relationship actually exists between the students' test scores and their learning process in Structure V class. Even, the research hypothesis is accepted that there is relationship between the students' test scores and their learning process in Structure V class. So, the test of significance supports the first result, in Pearson's correlation, even though the writer only has a small number of cases and whether the data randomly selected or not.

Since it has been stated in the previous paragraph, that Pearson's correlation also allows us to assess directly how well the variance in Y is explained by X . From the coefficient of determination r , it gets :

$$\begin{aligned} r &= (0.51)^2 \\ &= 0.26 \end{aligned}$$

This suggest that 26 percent of the variance in learning process in Structure V class is explained by the students' test scores. This result then allows a statement concerning unexplained variance, which is one way to look at error of prediction.

Besides, this is also based on the same assumption that the relationship between these two variables is linear since we get it from the direction of coefficient is positive. It is to check the assumption of linearity.

4.2.2 Interpretation of the Result

From the result of data analysis, the writer gets that these two variables, students' test scores and their learning process in structure class, are correlated each other. Although the result shows that there is a moderate correlation between students' learning process and their scores, there is a case that the writer still need to take into account. Since this study is not a kind of experimental study, so the writer can not neglected this problem. The problem rose when there were three students where the scores decreased. This might happen because of some factors. The writer interpreted the factors may arrive from the characteristics of the students themselves. Having observed those three students, the writer draws a conclusion that the character of those three students were not suitable with the general characteristics of structure class. Respondent B4, for example, has characteristic as a concrete learner. This type of learner likes to work things out, enjoy doing group work in class, and interested in language as communication rather than as a system. While, respondents B9 and D16 share characteristic as communicative learners. They are more comfortable if they interact with people, are happy to work on their own interests without being guided. Further, they are kinesthetic learners, too, because they like to move around, and can not stand to sit for a long time. Another most important thing is, those three respondents share similarities between them. They are belonging to spatial learners. For spatial learners, lectures, conversations, and oral directions without any visual backup can be confusing and anxiety producing. In fact, the correlation happened in this sample or may also happen in somewhere out of there, because of some factors.

Having done an observation and interviewed both the teacher and the students, the writer interprets some factors that may give their influences to the result analysis.

They are :

4.2.2.1 Course book

Course book defines as a text book which provides the core materials for a course. It aims to provide as much as possible in one book and is designed so that it could serve as the only book which the learner necessarily use during the course. The influencing factors that affect teacher' response when they are asked what their needs from a course book, based on Tomlinson (1998 :8), are :

1. Teachers' perception of administrative needs

For example, the school is under-resourced and a very strict syllabus is set which teachers are expected to obey.

2. Measured learners' needs

For example, the teacher has administered a diagnostic test at the beginning of the course and is aware of the learners' communicative needs.

3. Teachers' perception of learners' needs

For example, the teacher believes that Japanese students are quiet and shy and thus require special training in speaking.

4. Teachers' wants

For example, even though English Language Teaching experts recommended a learner-centered approach these days and the other colleagues of the

language center follow the trend, the teacher prefer and also secretly believes in the value of a teacher-centered approach for certain learners.

From the result of interview with their teacher, the teacher's response is influenced by the first factor, that is because of administrative needs. It means that the Department, here English Department of Airlangga University, has chosen this course book, *Focus on Grammar- A High Intermediate Course For Reference and Practice* by Fuchs and Bonner, and the teacher is expected to follow by using this course book. Besides, the second factor also gives its influence since the university, especially the English Department has administered a TOEFL test to diagnose their English level, and it is predicted that the students who pass the passing grade are those who the language level in the pre-intermediate level. And since nowadays, the students are in the fifth semester, or in the third year, so their language level is predicted in the high-intermediate level that is why, this course book is suitable for their language level.

4.2.2.2 Lesson Plan

Lesson plan (cited in Harmer, 2001 :308) is the art of combining a number of different elements into a coherent whole so that a lesson has an identity which the students can recognize, work, and react to. In making this, there are some factors that teachers need to consider. For example the language level of the students, the level of motivation, and their difference in learning style. Further, the knowledge of syllabus is also needed to take into account, but there is also something need to be remembered by the teacher who does not determine the syllabus or course

book, the teacher still needs to plan the content of the lessons and activities which the teacher will get part in. since the best lesson offers a variety of activities during class period. This thing has been successfully done by this teacher. Through the observation, it can be seen that the teacher had used various activities, either by pairs or students on their own. Further, all these activities have suit with the students' learning styles. Since the characters of learning style in this sample mostly are convergers and conformists. Convergers are those who have confidence in their own abilities, so they tend to avoid groups. While, conformists are those who happy to work in non-communicative classroom, doing what they are told. Modifying the lesson and making the lesson suits to all kinds of different learners can only be done by the experienced teacher, and further, the practices had been done in organized way, since based on the result of the students' interview, they prefer to see a well-organised teacher, and this has been supported by the fact that their teacher is an organized person. In fact, the teacher actually had made a lesson plan from the beginning of the semester, or it can be said the teacher had made SAP. So, there might be other reasons that influence her to modify their lesson plan. Based on Harmer (2001 :319), there are some factors that allow the teacher to modify her or his lesson plan, they are :

1. **Magic moment**, happens when topic in language lesson has offered students' interest. In this sample, it happened when the topic is about asking students' experiences of flood. In this situation, students' interest become increased and the teacher made the activities more comfortable as she could by making the

situation rather informal and the conversation flow as students' want, but still in controlled and guided by focusing the pattern of structure.

2. **Sensible diversion, happen when something might occur to us in terms of topic that the teacher is going to develop on the spot make he or she diverse the original plan**
3. **Unforeseen problem, happens when students had come across material or topic they take into class, and based to their teacher it would be unwise to carry on the class. In fact, their teacher modify her plan by using the board as her explanation aids.**

So, it can be seen that lesson plan is only suggestion about what we might do in class. Everything depends upon how our students respond and relate (cited in Harmer, 2001 : 319). Although the teacher had made the lesson plan from the beginning, the teacher could improvise the lesson or modifying it by making actual decision in that time. As a result, the teacher could run effective lesson.

4.2.2.3 Teaching Method

To decide what the teaching method that had been used by the teacher in her class might confuse the writer, since the teacher did not use any popular methodology which actually these methods has influenced the current state of English Language Teaching. Although it is difficult to judge the method, but having observed the class and interviewed the teacher, the writer finally come into a conclusion no matter the method she has used, basically she tend to focus on teaching the language by directly practicing it. Even there is a short explanation

about the pattern at first, but most of their time is done by practicing the language, so it is rather focus on the language practice. Furthermore, the type of the teaching method suits to the content of the book, which also focuses on practicing the language. The content of the book is Grammar Presentation, Focused Practice, and Communicative Practice. But there is something to be reminded, that the teacher should not fully follow the techniques that have been proposed in the book, since it shares different educational culture, because as we know the book actually implies about the culture of the book's writer. This has been becoming attention of the teacher, too, by using various techniques to do the tasks in book. For example, their teacher had tried to make the tasks into more like challenging, by using technique spontaneously answering the question, not by writing the answer down in the book, and pointing them randomly to answer the question. Besides, the teacher also tried to make the topic as interesting as possible by using communicative approach, but there is still a teacher-guided little bit. The technique had been done in a more relaxing situation. Since based on the writer's observation, the gap between the teacher and the students melted down. Further, this kind of technique suits with the students' learning styles who tend to be pragmatic, which share by the convergers, and still dependent in authority, which share by the conformists. Furthermore, in the process of teaching, specially in treating their mistakes or errors they have done, their teacher had used several techniques. They are : treating it immediately; transfer to another individual, subgroups, or the whole class; or giving it to original error maker after treatment. In doing these, their teacher brought it carefully and cautiously, since in judging

someone's performance may raise someone's stress level and stop their acquisition process in which later on will de-motivate the students. So, the teacher, based on students' interview, have corrected their performance in the right ways and in the right moment, too. It means judging their errors or mistakes in the right treating techniques.

So, it can be concluded that their teacher had used the techniques which had been suited or related to the character of each of the students or the class as a whole. Since we know that nothing in language teaching is quite that simple, but their teacher could overcome this and make the learning process in successive stage through her methods in teaching.

4.2.2.4 Individual Differences

The teachers' task is overwhelmingly complex. Since their teaching designed should addressed to the group as a whole, so it may become the best result for each of their students. Researching the students' difference was not directly done by the teacher. It is because the teacher had already known the character of each of their students. Even, having interviewed with the teacher, if the teacher had not known it, need analysis about the suitable method and activities can be done through the interaction with the students in class. This action can only be achieved by the experienced teacher, and this teacher is included to this one. Although, the students in this sample actually have various characters, based on the result of having interviewed with the students, most of the students are belonging as convergers and conformist learners, their teacher has

made various activities that are suitable with them. Their teacher tried to make the class situation as enjoyable as she can, for example by having jokes with them, so that the students may feel comfortable with the activities that have offered to them.

4.2.2.5 Practice Effect

Generally speaking, the more frequent we perform an operation, the more proficient we become at it. This is as true that subjects who are repeating a test to score somewhat higher than they did the first time (Harris: 1969 :129).

4.2.3 Conclusion of Data Analysis

The result shows that there is correlation between students' test scores and their learning process in Structure V class. This has been shown from the result that we get from analyzing the data statistically by testifying the significance of r in which the t -value 2.9631 is higher than 2.060 as the t -table. This is following the requirement of the element of the formula that if t -value is higher than t -table or in statistically it is substituted into : $t\text{-value} > t\text{-table}$. So, H_0 is rejected and H_1 is accepted.

Since the condition in learning a second language is a complex thing, by means that it is not only influenced by a single factor, but also more tend to the interplay between many factors. It could be from the candidates' characteristics or may come from the environment itself, the surrounding environment when the candidates learn the language. So, the writer interprets that it may be other factors

that may give influence to students' scores. The writer concludes by adding another factors that may cause students' knowledge to be affected. They are coming from the course book, lesson plan, teaching method, individual difference and practice effect.

CHAPTER 5

CONCLUSION