CHAPTER IV

RESEARCH FINDING AND DISCUSSION

In this chapter discusses Finding, Hypothesis test, Discussion, Limitation of the Research.

A. Research Finding

The result from data collection technique is be a measurement in students' Speaking English motivation. The main data collection technique that used is questionnaire that were shared to 58 participants, 29 participants from natural science program and 29 from social science program. This questionnaire aimed to 8 indicators[1] of motivation. they have been explained at chapter III. These indicators were presented by questions that amount 16, so one indicator contains 2 questions.

The questions are detemined in multiple choice with 5 alternative answers, they are a, b, c, d, and e. For analysis requirement, each alternative answer had certain score. They are:

- Score 5 for the respondents who choose item 'a'
- Score 4 for the respondents who choose item 'b'
- Score 3 for the respondents who choose item 'c'
- Score 2 for the respondents who choose item 'd'
- Score 1 for the respondents who choose item 'e'[2]

Counting for this score, the highest score is 5 X 16 = 80 , and the lowest score is 0 X 16 = 0. It is used to know where class has good motivation. In this case used Likert Scale.

The data is a description in statistical data calculation. We can see the student's motivation in learning speaking English as follow:

[1] See chapter III of this thesis

[2] The score 0 means that no motivation studying process that is experienced.

Table 1

The Table of Natural Science Program Students' Motivation Score in Learning Speaking English

No	**Students' Code**	**Score**
1	A 1	68
2	A 2	54
3	A 3	53
4	A 4	53
5	A 5	53
6	A 6	63
7	A 7	56
8	A 8	40
9	A 9	36
10	A 10	51
11	A 11	42
12	A 12	55
13	A 13	53
14	A 14	55
15	A 15	46
16	A 16	49
17	A 17	56
18	A 18	61
19	A 19	35
20	A 20	63
21	A 21	56
22	A22	55
23	A 23	60
24	A 24	60

25	A 25	60
26	A 26	60
27	A 27	67
28	A 28	42
29	A 29	61
Total Score		1563

Table 2

The Table of Social Science Program Students' Motivation Score in Learning Speaking English

No	**Students' Code**	**Score**
1	B 1	48
2	B 2	45
3	B 3	62
4	B 4	46
5	B 5	55
6	B 6	42
7	B 7	46
8	B 8	60
9	B 9	54
10	B 10	57
11	B 11	46
12	B 12	37
13	B 13	48
14	B 14	43
15	B 15	40
16	B 16	36
17	B 17	52
18	B 18	46
19	B 19	44

20	B 20	49
21	B 21	35
22	B 22	45
23	B 23	45
24	B 24	42
25	B 25	49
26	B 26	51
27	B 27	53
28	B 28	51
29	B 29	30
Total Score		1357

B. Hypothesis Test

Natural science and social science program students' motivation score which is counted base on the table I and II to find out the differences.

Table III

The Table of Natural Science Program and Social Science Program Motivation Score of XI Grade Students at MAN Bawu Jepara

No	**X**	**X^2**	**Y**	**Y^2**
1	35	1225	30	900
2	36	1296	35	1225
3	40	1600	36	1296
4	42	1764	37	1369
5	42	1764	40	1600
6	46	2116	42	1764

7	49	2401	42	1764
8	51	2601	43	1849
9	53	2809	44	1936
10	53	2809	45	2025
11	53	2809	45	2025
12	53	2809	45	2025
13	54	2916	46	2116
14	55	3025	46	2116
15	55	3025	46	2116
16	55	3025	46	2116
17	56	3136	48	2304
18	56	3136	48	2304
19	56	3136	49	2401
20	60	3600	49	2401
21	60	3600	51	2601
22	60	3600	51	2601
23	60	3600	52	2704
24	61	3721	53	2809
25	61	3721	54	2916
26	63	3969	55	3025

27	63	3969	57	3249
28	67	4489	60	3600
29	68	4624	62	3844
$\sum$	$\sum X$ = 1563	$\sum x^2$ = 86295	$\sum Y$ = 1357	$\sum y^2$ = 65001

a) Determining Mean of Each Variable

Based on scores above, then are able to determine mean of each variable.

$M = \frac{\sum X}{n}$ $= \frac{1563}{29}$ $= 53{,}89655$	$M = \frac{\sum Y}{n}$ $= \frac{1357}{29}$ $= 46{,}7931$

b) Determining Variance and Standard Deviation

How far value of perception that spread around value of mean is named variation. Variation measure is many types, but which is often used is variance and standard deviation.

If a set of reseaarch X1, X2,..., Xn has a mean $\overline{X}$, then the variance is

$$V_x = \frac{\sum(X_i - \bar{X})}{n-1}$$ [3]

where,

X_i = observation score of variable i

$\bar{X}$ = mean

V_x = variance

In working daily, variance is looked for with the formula below, which is the other way in writing the formula for variance.

$$V_x = \frac{n\sum X_i^2 - (\sum X_i)^2}{n(n-n1)}$$ [4]

Based on Table III above, the table of natural science program and social science program motivation score of XI grade students at MAN Bawu Jepara and mean, then looks for . . . .

1) Varians of natural science program.

$\sum X_i = 1563$

$\sum X_i^2 = 86295$

$(\sum X_i)^2 = 1563^2 = 2442969$

$\bar{X} = \frac{1563}{29} = 53, 89655$

[3] Moh. Nazir, *Metode Penelitian,* (Bogor: Ghalia Indonesia, 2005), p.386.

[4] Moh. Nazir, *Metode Penelitian,* p.386.

$$V_x = \frac{n\sum X_i^2 - (\sum X_i)^2}{n(n-n1)}$$

$$V_x = \frac{29\ (86295) - 2442969}{29\ (29-1)}$$

$$= \frac{59586}{812} = 73{,}38177$$

So, mean of natural science program XI Grade motivation is 53, 89655 and variance from motivation is 73,38177.

Standard deviation is square root of variance, so

$$S = \sqrt{Vx}$$

$$= \sqrt{73{,}38177}$$

$$= \sqrt{8{,}5663}$$

Where,

n = sum of observation

s = standard deviation

2) Varians of social science program.

$$\sum X_i = 1357$$

$$\sum X_i^2 = 65001$$

$$(\sum X_i)^2 = (1357)^2 = 1841449$$

$$\bar{X} = \frac{1357}{29} = 46{,}79310344$$

$$V_x = \frac{n\sum X_i^2 - (\sum X_i)^2}{n(n\text{-}n1)}$$

$$= \frac{29\,(65001) - 1841449}{29\,(29\text{-}1)}$$

$$53{,}66995073$$

So, mean of social science program XI Grade motivation is 46,79310344 and variance from motivation is 53,66995073.

Standard deviation is square root of variance, so

$$S = \sqrt{Vx}$$

$$= \sqrt{53{,}66995073}$$

$$= \sqrt{7{,}32598}$$

Where,

n = sum of observation

s = standard deviation

c) To Determine Standard Deviation of Each Variable

$$SD2 = \frac{\sum x^2}{N} - Mx^2$$

$$= \frac{86295}{29} - 53{,}89655^2$$

$$= 2975{,}6897 - 2904{,}8381$$

$$= 70{,}8516$$

$$SD2 = \frac{\sum y^2}{N} - My^2$$

$$= \frac{65001}{29} - 46{,}\mathbf{7931}^2$$

$$= 2241{,}4138 - 2189{,}5942$$

$$= 51{,}8196$$

d) To Determine Standard Error of Mean[5]

$$SD2Mx = \frac{SD2}{N-1} \qquad SD2Mx = \frac{SD2}{N-1}$$

$$= \frac{70{,}8516}{28} \qquad = \frac{51{,}8196}{28}$$

$$= 2{,}5304 \qquad = 1{,}8507$$

e) To Determine Standard Error Difference of Mean

$$SDbm = \sqrt{SD2Mx + SD2My}$$

$$= 2{,}5304 + 1.8507$$

[5] M. Burhan Bungin, *Metode Penelitian Kuantitatif: Komunikasi, Ekonomi, dan Kebijakan Publik serta Ilmu-Ilmu Sosial lainnya* (Jakarta:Fajar Interpratama Offset),p.189.

$= \sqrt{4,3811}$

$= 2,0931$

f) Determining t Test with Formula Below

$$t = \frac{Mx - My}{SDbm}$$

$$= \frac{\mathbf{53,8966 - 46,7931}}{2,0931}$$

$$= \frac{7, 1035}{2,0931}$$

$= = 3,394$

g) Measuring Degree of Freedom by $df = n_1 + n_2 - 2$

In determining both n_1 and n_2 are 29. It is taken from sample

by $df = n_1 + n_2 - 2$

$= 29 + 29 - 2$

$= 56$

h) Checking the t_{table} Criteria with Significant Degree 5 %

The t_{table} with degree of freedom= 56 in α 5 % is 2, 048. used number 2.048 because it is the closer number with 56. There is no exact number in table.

i) To get Conclusion

Alternative hypothesis (Ha) is proposed in this research. This hypothesis states there is relationship, it means there is significance relationship between X and Y. So it is "There is significant motivation difference that natural science program is better than social science program in learning speaking English".

Opponent of Ha is Ho. It is called with statistic hypothesis[6], it is because this hypothesis is examined by statistic. For research, this hypothesis will be tested through zero hypothesis (Ho) test, it is "Nothing significant motivation difference that natural science program is better than social science program in learning speaking English".

Based on the calculation above, it can be concluded that t_{test} is bigger than t_{table}, so the criteria is $3{,}394 > 2{,}048$, therefore Ha accepted.

1) Catagorizing students' motivation for all programs.

Table IV

Whole Scores of Natural Science and Social Science Program Students Motivation.[7]

No	Name	Score
1	Ratih Dwi Antari	68
2	Miftahul Mujib	48
3	Rizana K.I.D	54
4	Ayuk Pratiwi	45
5	Ayu Rizkiyatul A	53
6	Zahriyatus Shifa Ulya	62

[6] M. Burhan Bungin, *Metode Penelitian Kuantitatif* , p.79.
[7] For more detail table, see appendixes.

7	Sholikatun Ni'mah	53
8	Siti Rofi'ah	46
9	Nur Pujiyanti	53
10	Puji Wariyanti	55
11	Rita Setianingsih	63
12	Mudrikah	42
13	Rizka Oktaviani	56
14	Najmuddin Sahih	46
15	Fiki Safitri	40
16	Danni Kurniawan	60
17	Nur A. Jazuli	36
18	Kholilur Rohman	54
19	Dewi mashfufah	51
20	M. Agus Salim	57
21	Nanik Rosidah	42
22	Lola Berliana Devi	46
23	Uswatun Khasanah	55
24	Siti Lutfiana	37
25	Syarifatul Faili	53
26	Jauhari al Khanafi	48
27	Sisca Okik Nur Cahyani	55
28	Siti Nur Hidayanti	43
29	M. Affanul Halim	46
30	Iin Kusuma Dewi	40
31	M. Misbahudin	49
32	Suryati	36
33	Hanif fatkhur aziz	56
34	M. Choirul Umam	52
35	Ahlis Ni'am	61
36	Nanik Sulistiyowati	46

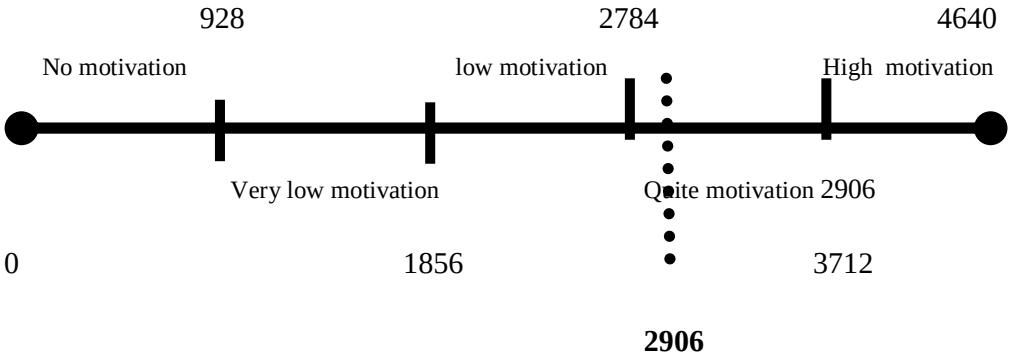
37	M. Kurniansyah	35
38	Fitri Anisa	44
39	Yeni Fitria	63
40	Qoidah	49
41	Ahmad Mukhib	56
42	Lia Andriana Melia	35
43	Aufa Salsabila	55
44	Siti Puriyati	45
45	Hilyatul Baidlok	60
46	Eisa Ni'matul M.	45
47	David Juliyanto	60
48	Bagus Setiawan	42
49	Ahmad Bahrul Ulum	60
50	M. Nanang Andrika	49
51	Siti Juariyah	60
52	Roufur Rohim	51
53	M. Ricki Maulana	67
54	Lukman Arif	53
55	Luuluk Nailil. F	42
56	Yenny andriany	51
57	Siti Muthoharoh	61
58	Ayu Isma Suryani	30
Total Score		2906

counted all items to get the ideal score for all. They are (5 x 16 x 58 = 4640)[8].Meanwhile, the score which is gotten between natural science program and social science program students are 2906 (1549 +1357).[9] Thereby, 2906: 4640 x 100

[8] 5 is highest score of each item, 16 is totall items, 58 is all samples.

[9] See table III

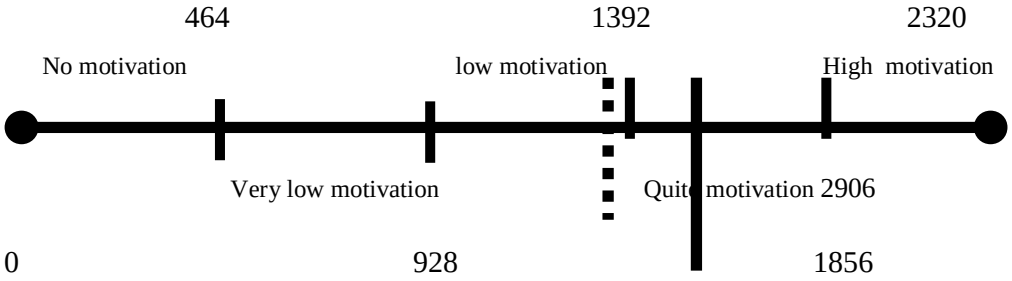
= 62, 63%. 4640 is highest score. In order be easier to understand, the highest score is divided to be 5 categories. It can be described as follow.



Really It can be concluded that the score 2906 is in quite motivation internal category. Truly based on calculation, the students can reach 62, 63% of 100%. So the natural science and social science program students' motivation are quite.

2) Categorizing Students' Motivation for Each Program.

Finding the ideal score for each program is 5 x 16 x 29 = 2320. [10] Meanwhile the score of natural science program is 1549 and social science program is 1357. Thereby, 1549: 2320 x 100 = 66, 77% for natural science program and 1357: 2320 x 100 = 58, 49 % for social science program. It can be described as follow.



* Explanation

[10] 29 is sample of each variable.

The diagram shows that natural science program is in quite motivation, it is better than social science program. Actually social science program is in low motivation, it is not better than natural science program.

C. Discussion

1. Motivation According to Students.

Students' motivation is good for them; they have the answer when they are asked how strong their motivations if it is transferred in daily life, but the students have their own opinion towards its usage. Here the brief analysis of interview results:

a) Natural Science Program Students

Composing base on the interview result; it showed that the student who is interviewed is very happy in practicing Speaking English directly because she is often study at night. She has some strategies, like memorizing vocabulary, do conversation with friends and often asking to senior.

Another student also feels afraid because of not able. He also feels nervous because he is not familiar with speaking in English daily. His strategy is reading and comprehends the lesson. He also comes to the front with partner.

Another student also feels nervous if doing speaking but she tries to be confident to get good mark. His strategy is doing exercise with natural science program friend.

b) Social science program students based on the interview result, it showed that the student feels difficult to understand speaking English. But sometimes she understands the lesson. The student writes down

material which wants to understand. She also looks for book in the library.

Other students felt shy in studying because producing the voice in front of his friends. He also cannot understand when the teacher taught speaking. The student didn't have the appropriate strategy in teaching speaking in English. Sometimes he wrote down the material.

Another student felt enjoyable, and sometimes she felt difficult. It was because of everything in speaking was difficult. The student's strategy was writing down the difficult word and remembering the teacher's explanation.

c) Based interview with the Mr. Zaini as a teacher on both class. There were no differences in teaching them. Actually the material that given in every semester was same. It based on curriculum that really not different for them in speaking aspect of English.

2. Programs in School according to English Teacher

The teacher of two programs, natural science program and social science program are same. In this school there is no special strategy to develop it, and there is no difference between two programs. But in this school there is ECC (English Conversation Club). It is extracurricular that more practices than just explanation.

Natural Science program's motivation is very good for their achievement. It is different than social science student's program. The natural science program's motivation is very high because they participate in ECC.

Social science program's motivation is bad for their achievement. It is different than natural science student's program. The social science program's motivation is low natural science program because they don't participate in ECC.[11]

[11] An interview with the English teacher of science program and social program

D. Limitation of the Research

In doing this research, realized that there were some obstacles mainly the procedures of the school where the research was done. In these activities, it not only spent the money, but also condition of time between research and in finishing study in campus.

Another limitation that has only used sample 58 students in two classes. Not all samples between class of natural science program amounts 2 classes and social science program that amounts 4 classes.