## CHAPTER III

## RESEARCH METHODOLOGY

### 3.1. Research Design

This research was a correlational study. Gay (2000) revealed that correlational research involves collecting data to determine whether and to what degree a relationships exists between two or more quantifiable variables. The degree of relation is expressed as a correlation coefficient." In this research, the researcher investigated the influence of students' self-efficacy and self-esteem on the students' English achievement. This research consisted of three variables, students' self-efficacy and students' self-esteem as the independent variables (X1 and X2) and students' English learning achievement as the dependent variable $(\mathrm{Y})$. The relationship among the variables is illustrated in the following figure.


### 3.2. Population and Sample

The population of the research was the third semester students of Teknik Industri Study program at Sekolah Tinggi Teknologi Dumai, with the total number of 131 students.
$\subseteq$ According to Gay and Airisian (2000), population is the group of interest to the researcher, the group to which she or he would like the result of the study to be generalizable. Sample is representative group of all population to serve as respondents; this research used random sampling technique. It is used to cull a smaller sample size from a larger population and used it to research and make generalizations about the larger group, and also it is a probability sampling procedure that gives every element in the target population. The number of the sample was taken based on the Krejcie \& Morgan table below.

Table III. 1
The Sample of Krejcie \& Morgan

| $N$ | $\delta$ | $N$ | $s$ | $N$ | 8 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 10 | 10 | 220 | 140 | 1200 | 291 |
| 15 | 14 | 230 | 144 | 1300 | 297 |
| 20 | 19 | 240 | 148 | 1400 | 302 |
| 25 | 24 | 250 | 152 | 100 | 306 |
| 30 | 28 | 260 | 155 | 1000 | 310 |
| 35 | 32 | 270 | 159 | 1000 | 313 |
| 40 | 36 | 280 | 162 | 100 | 317 |
| 45 | 40 | 290 | 165 | 1900 | 320 |
| 50 | 44 | 300 | 169 | 2000 | 322 |
| 55 | 48 | 320 | 175 | 2000 | 327 |
| 60 | 52 | 340 | 181 | 2400 | 331 |
| 65 | 56 | 360 | 186 | 2000 | 335 |
| 70 | 59 | 380 | 191 | 2000 | 338 |
| 75 | 63 | 400 | 196 | 3000 | 341 |
| 80 | 66 | 420 | 201 | 300 | 346 |
| 85 | 70 | 440 | 205 | 4000 | 351 |
| 90 | 73 | 460 | 210 | 4000 | 354 |
| 95 | 76 | 480 | 214 | 5000 | 357 |
| 100 | 80 | 500 | 217 | 6000 | 361 |
| 110 | 86 | 550 | 226 | 7000 | 364 |
| 120 | 92 | 600 | 234 | 8000 | 367 |

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| $N$ | $S$ | $N$ | $S$ | $N$ | $S$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
| 130 | 97 | 600 | 242 | 900 | 368 |
| 140 | 103 | 700 | 248 | 1000 | 370 |
| 150 | 108 | 700 | 224 | 1500 | 375 |
| 160 | 113 | 800 | 260 | 2000 | 377 |
| 170 | 118 | 800 | 26 | 3000 | 379 |
| 180 | 123 | 900 | 269 | 4000 | 380 |
| 190 | 127 | 950 | 274 | 5000 | 381 |
| 200 | 132 | 1000 | 278 | 7500 | 322 |
| 210 | 136 | 1100 | 285 | 100000 | 384 |


Soute: Keficie \& Moteatit 1970

The total population in this study was 131 students; the sample of this research was 112 students. The samples were taken randomly from all of Teknik Industri $3^{\text {rd }}$ semesters students, and the number of sample of each class was taken by using the following formula:

$$
\frac{112(\text { samples })}{131 \text { (populations) }} \times \text { total students in a class }
$$

Table III. 2
The Populations of Teknik Industri Study Program at Sekolah Tinggi Teknoogi Dumai

| No | Class | Population | Sample/ <br> class | Total <br> sample |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Class A | 27 | 23 | 112 |


| 2 | Class B | 36 | 31 |  |
| :---: | :---: | :---: | :---: | :---: |
| 3 | Class C | 34 | 29 |  |
| 4 | Class D | 34 | 29 |  |
| Total |  |  |  |  |
| 131 |  | 112 | 112 |  |

Krejcie and Morgan had simplified the process of determining the sample size for a finite population. They came up with a table using sample size formula for finite population. Based on the table, the sample size for 131 was 112 students. So, 112 students were taken as the sample of the research. Gay (2000) stated that "the sample for a correlational study is selected by using an acceptable sampling method, and minimally acceptable sample size is generally 30 participants". The samples were taken using the following steps:

1. Writing down the name of students on the small pieces of paper.
2. Putting all the papers in a big box
3. Shaking the box
4. Taking out the papers one by one. (The name of students taken is the sample)

### 3.3 Instruments

In this research, two questionnaires were used (Self-Efficacy Beliefs by Rahemi and Rosenberg Self-Esteem scale). Questionnaires are a collection of questions or statements related to the indicators of variables. According to Panji


#### Abstract

(2006) in Andreani (2013), questionnaire can gather information from special populations of people who have firsthand knowledge and experience and because it is usually more cost effective than other comparable techniques as personal interview, for gathering expert information. The questionnaires were distributed to the participants of the study.

The first variable of this research wass self-efficacy (X1); to measure the students' self-efficacy level, a set of questionnaires of English self-efficacy beliefs of the Kasetsart University which was developed by Rahemi (2007) was adopted. It was constructed based on Bandura's $(1986 ; 1997)$ self-efficacy theory, the existing instruments BALLI (Horwitz, 1988), and the general self-efficacy scale by Nezami et al., (1996).


The second variable was self-esteem (X2). To measure the student's selfefficacy level, a set of questioner of Rosenberg self-esteem scale by Rosenberg, M. (1965) was adopted. According to Gray-Little, Williams \& Hancock (1997), The Rosenberg Self-Esteem Scale, a widely used self-report instrument for evaluating individual self-esteem was investigated using item response theory.

The third variable was English achievement (Y). To find out the students' English achievement, the data were taken and collected from the institution and lecturer documents in the form of the students English scores.

### 3.4 Data Collection Technique

The technique of collecting the data in this study was distributing questionnaires which consisted of self-efficacy questionnaire and self-esteem
questionnaire to measure the level of self-efficacy and self-esteem and students English achievement to know their grades.

### 3.4.1 Questionnaires

The questioners consisted of items in positive and negative statements. To get the scores the Likert Scale was used. According to Boone (2012), a Likert Scale format is usually used to measure the strength of an attitude or an opinion. In this study, a five-point scale was applied with the alternative options: strongly agree, agree, undecided, disagree and strongly disagree.

Table III. 3
The Likert Scale Ratings

| Optional | Score |
| :---: | :---: |
|  | Favorable |
| Strongly agree | 5 |
| Agree | 4 |
| Undecided | 3 |
| Disagree | 2 |
| Strongly disagree | 1 |

a. The Questionnaire of English self-efficacy beliefs was developed by Rahemi (2007). It was constructed based on Bandura's (1986; 1997) self-
efficacy theory, the existing instruments BALLI (Horwitz, 1988), and the general self-efficacy scale by Nezami et al., (1996). It was also validated and piloted to ensure its validity and reliability. The questionnaire consisted of 10 items of statement with five point-Likert Scale which addressed the students' perceived abilities and their traits such as their aspiration in learning English.

Table III. 4 Self-efficacy Questionnaire

| No | Statements | Strongly agree (Sangat setuju) | Agree <br> (Setuju) <br> (4) | Undecided <br> (Tidak ada pilihan) <br> (3) | Disagree <br> (Tidak setuju) <br> (2) | Strongly disagree <br> (Sangat tidak setuju) <br> (1) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} 1 \\ \frac{1}{2} \\ \end{gathered}$ | I have got a special ability for learning English. <br> (Saya mempunyai kemampuan yang lebih dalam belajar Bahasa Inggris) |  |  |  |  |  |
| R | I believe I have the power to pass the final exam <br> (Saya yakin, saya memiliki kemampuan untuk lulus ujian semester) |  |  |  |  |  |
|  | I think that someday I will read English text very well. <br> (Saya yakin suatu hari nanti saya akan mampu memahami teks dalam Bahasa Inggris dengan baik) |  |  |  |  |  |




Meanwhile, the results of the students' self-efficacy categories are presented in the following table:

Table III. 6
The Category of Self-Efficacy

| The Score Level | Category |
| :---: | :---: |
| $81-100$ | Very strong |
| $61-80$ | Strong |
| $41-60$ | Medium |
| $21-40$ | Weak |
| $0-20$ | Very weak |

Table III. 6 is used to indicate the category of student's self-efficacy in learning English; namely, very strong, strong, medium, weak, and very weak. The
very strong category is in range between $80-100$ score, the strong category is in range between 61-80 score, the medium category is in range between 41-60 score, and the weak category is in range between 21-40 score, and very weak category is $0-20$.
b. The questionnaire of self-esteem used was Rosenberg self-esteem scale by Rosenberg (1965). It consisted of 10 statements, five statements were positive, number $1,3,4,7$ and 10 , and five statements were negative statements, the number 2,5,6,8 and 9 .

Table III. 7
Self-esteem Questionnaire

| No | Statement | Strongly agree (Sangat setuju) <br> (5) | Agree <br> (Setuju) <br> (4) | Undecided <br> (Tidak ada pilihan) <br> (3) | Disagree <br> (Tidak setuju) <br> (2) | Strongly disagree (Sangat tidak setuju) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | On the whole, I am satisfied with myself. <br> (Secara keseluruhan, saya puas dengan keadaan diri saya) |  |  |  |  |  |
| 2 | At times I think I am not good at all. <br> (Terkadang saya merasa tidak mempunyai kemampuan dalam melakukan banyak hal) |  |  |  |  |  |
| 3. | I feel that I have a number of good qualities. <br> (Saya merasa bahwa saya memiliki sejumlah kualitas yang baik dalam diri |  |  |  |  |  |


| $\frac{n}{?}$ | saya). |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 4. <br> 0. <br> 0. <br> 0. <br> 0 <br> 0 <br> 0 <br> 0 <br> 0 <br> . | Iam able to do things as well as most other people. <br> (Saya bisa melakukan banyak hal dengan baik seperti kebanyakan orang lain) |  |  |  |  |  |
| 5. | I feel I do not have much to be proud of. <br> (Saya merasa tidak banyak yang bisa saya banggakan dari diri saya). |  |  |  |  |  |
| 6. | I certainly feel useless at times. <br> (Kadang saya merasa diri saya tidak berguna). |  |  |  |  |  |
| 7. | I feel that I am a person of worth, at least on an equal plane with others. <br> (Saya merasa bahwa saya adalah orang yang berharga, setidaknya setara dengan orang lain). |  |  |  |  |  |
| 8. | I wish I could have more respect for myself. <br> (Saya merasa, saya kurang dihargai oleh orang lain). |  |  |  |  |  |
| 9. | All in all, I am inclined to feel that I am a failure. <br> (Secara keseluruhan, saya cenderung merasa bahwa saya adalah orang yang gagal). |  |  |  |  |  |
| 10. | I take a positive attitude toward myself. <br> (Saya bersikap positif terhadap diri saya |  |  |  |  |  |

achievement can be categorized into some categories as presented in the following table:

Table III. 9
The Category of English Achievement

| The Score Level | Grade | Category |
| :---: | :---: | :---: |
| $80.00-100$ | A | Excellent |
| $65.00-79,99$ | B | Good |
| $55.00-64,99$ | C | Low |
| $41.00-54.99$ | D | Fail |
| $0-40.99$ | E | Withdrawal/fail |

Table III. 9 above is used to indicate the category of student's English achievement. The achievement could be categorized into excellent category with grade A and score ranges are between $80.00-100$, good category with grade B and score ranges are between $65.00-79.99$ and low category with grade C and score ranges are between $55.00-64.99$, fail category with grade D and score ranges are between $41.00-54,99$ and fail/withdrawal category with grade E and score ranges are between 00.00-40.99.

### 3.5. Data Analysis Techniques

The data were analyzed by employing Descriptive and Inferential statistics, which was Regression Analysis and all data were analyzed by using SPSS version 20.

### 3.5.1. Descriptive Statistics

Descriptive statistic was used to analyze percentage (\%), mean scores (M) and standard deviation (SD). Besides, it also analyzed the level of selfefficacy, self-esteem and English achievement.

### 3.5.2. Inferential Statistics

Inferential statistic was used to test the hypothesis of this study. Since the result of normality test self-efficacy is $0.200>0,05$, self-esteem is 0,200 $>0,05$ and the English achievement is $0,200>0,05$, means that the data are normal and simple regression and multiple regression could be used.

## a. Simple Regression

Regression was used to answer the first and the second research questions:

1. To investigate the significant influence of self-efficacy on the English achievement of the $3^{\text {rd }}$ semester students of Teknik Industri study program at Sekolah Tinggi Teknologi Dumai
2. To investigate the significant influence of self-esteem on the English achievement of the $3^{\text {rd }}$ semester students of Teknik Industri study program at Sekolah Tinggi Teknologi Dumai.

If the result shows $\mathrm{p}<0.05$, it means there was a significant influence of self-efficacy on student's English achievement, and also there was a significant influence of self-esteem on students' English achievement. If the result shows $\mathrm{p}>0.05$, it means there was no significant influence of self-efficacy on students' English achievement, and also there was no significant influence of self-esteem on students' English achievement.

## b. Multiple Regressions

Multiple regressions was used to analyze the last research question, namely; to investigate the significant influence of selfefficacy and self-esteem on students' English achievement of the $3{ }^{\text {rd }}$ semester students of Teknik Industri study program at Sekolah Tinggi Teknologi Dumai.

According to Cresswell (2008), multiple regressions are statistical procedures for examining the combined relationship of multiple independent variables on a single dependent variable.

To know the influence of self-efficacy and self-esteem on students' English achievement can be seen from coefficient " F ". To

Interpret " $F$ " test based on the F table (see appendix) can use the formula below:
$\mathrm{F}_{\text {table }}=\mathrm{k} ; \mathrm{n}-\mathrm{k}$
Note: $k=$ the total of independent variables $\mathrm{N}=$ the total of respondents

The coefficient F can be interprets:

1. If the result showed $\mathrm{F}>\mathrm{F}_{\text {table }}$, it means there was an influence of self-efficacy and self-esteem on students’ English achievement.
2. If the result showed $\mathrm{F}<\mathrm{F}_{\text {table }}$, it means there was no influence of self-efficacy and self-esteem on students' English achievement.

In order to know the significant influence of selfefficacy and self-esteem on student's English achievement, it can be seen from coefficient " p ". It can be interpreted:

1. If the result showed $\mathrm{p}<0.05$ it means there wass a significant influence of self-efficacy and self-esteem on students' English achievement.
2. If the result showed $\mathrm{p}>0.05$ it means there was no significant influence of self-efficacy and self-efficacy on students' English achievement.
