

CHAPTER THREE

METHODOLOGY

This Chapter discusses the methodology of the study which covers the research design, sites and participants, and the data processing including the method of analysis on both quantitative and qualitative analysis.

3.1 Research Design

Generally, the purposes of this study were the first was to measure whether or not learning by using Google Translate as a media helps improving students' translation skill in order to make students understand text easily; the second purpose was to know the students experience regarding learning by using Google Translate. This second purpose was to find valuable reason which strengthens whether Google Translate has positive or negative effect to students' learning. Thus, in order to achieve both purposes above where the first purpose decided quantitatively and the second purpose was qualitative; therefore the study needed to triangulate methods. Denzin (in Johnson, 2007) defines triangulation as "the combination of methodologies in the study of the same phenomenon". However, the researcher believes in both quantitative and qualitative paradigm.

Mixed method or mixed research is a research that involves the mixing of quantitative and qualitative methods or other paradigm characteristics as shown in www.uk.sagepub.com. According to Cresswell (2003: 210), mixed method focuses on collecting and analyzing both quantitative and qualitative data in a single study. In line with Cresswell, Johnson et. al. (2007: 120) says that mixed

methods research is the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study or set of related studies. The quantitative method was used to achieve the first goal, whereas the qualitative method was used to achieve the second purpose. The result from qualitative method was strengthened the result from quantitative one. This purpose of strengthening a result to another was in line with the statement of Greenem Caracelli, and Graham (1989, in Cresswell, 2003: 16), saying that the result from one method can help develop or inform the other method. Furthermore, Cresswell (2003: 16) concludes the mixed method into three procedures; they are sequential, concurrent, and transformative. The sequential procedure means the researcher decide whether to choose each of quantitative or qualitative as the first and the second method, for instance, using quantitative first and then followed by qualitative or vice versa. The concurrent procedure means researcher converges quantitative and qualitative data in order to provide a comprehensive analysis, the researcher also uses both methods at the same time. The transformative procedure means researcher uses a theoretical lens in both quantitative and qualitative methods.

As the study tends to use qualitative data as a way to strengthen the quantitative data, thus the sequential explanatory design was used in this study. Sequential explanatory design is characterized by the collection and analysis of quantitative data followed by the collection and analysis of qualitative data (Cresswell, 2003: 215). This study used quantitative as the first method, and then it was followed by qualitative method as the second method. For quantitative

method, this study used quasi-experimental design because it used two groups consists of the experimental group and the control group. Quasi-experimental design is the development of true-experimental design which uses the control group chosen randomly (Sugiyono, 2010: 77). For quantitative method, this study used questionnaire.

The writer started the study by concerning and identifying various studies and discussions regarding Google Translate or any other online machine translations and its relation to language teaching and learning. There were several discussions that the writer found. For instance, Kumar (2012) in his journal entitled "*Machine Translation in Arabic-Speaking ELT Classrooms: Applications and Implications*". Kumar's study investigated the use and the student's dependence toward Machine Translation on EFL Arabic speaking learners. This study produced the conclusion saying that machine translation is very popular among the EFL-Arabic speaking students in its usage in ELT classrooms. The students had various reasons ranging from understanding questions, concepts and topics.

Another discussion is from Zengin (2011) with his journal entitled "*Turkish EFL Academicians' Problems Concerning Translation Activities and Practices, Attitude towards the Use of Online and Printed Translation Tools, and Suggestions for Quality Translation Practice*". This study mainly concerned on the students' attitude toward the online translation tools which had positive alignment. In line with the writer, Zengin sees that online translation tools and search engines were found beneficial in enhancing the quality of existing

translation practices. Whereas, Kadhim, et. al. (2013: 48-49) says that online machine translation systems are continuously undergoing development, and the outputs might be improved in the near future to help students' learning more effectively.

There are some articles discusses the potency of Google Translate to become a learning media, such as one from Davis (2011) with his blog article entitled "*Google Translate, Friend or Foe*" is a clear image which tells that the issue is still not validated by any study. Davis mentions that Google Translate is probably the most widely used online translation tool. The other article is such an article posted in <http://poliglotti4.eu> entitled *Using Google Translate to Enhance Your Language Learning Experience*. It mentions that there are various ways to learn a new language by yourself and using Google Translate is the most useful ones.

Based on several discussions mentioned above, the writer came into hypothesis that the use Google Translate in language learning improves the students' skill which in this cases the students' translation skill. Thus, this study tried to analyze and measure whether or not the use of Google Translate improves students' translation skill.

3.2 Site and Participants

3.2.1 Site

In order to meet the purposes of the study, the researcher had chosen the most appropriate site and participant, or Alwasilah (2000: 103) mentioned it as

purposeful sampling. The purposive site for this study was a vocational school located in Cicalengka in *kabupaten* Bandung. The school could be reached by taking the Bandung-Garut by-pass highway, and when reaching Cicalengka, it was taking the left and straight road to *Desa* Babakan Peuteuy.

The condition near the school was almost conducive for teaching and learning activity. There was less noise, whether it was from traffic or any other noise, because the school was surrounded by the villagers' farms. The air was also fresh, as it was located on the mountain's foot. The situation of the classroom was good. The noise from the outside of the classroom was less heard from the inside. It was also decent in term of size.

The consideration of choosing this site was that the researcher had an access to the school as the writer had to teach also while conducting research. By taking its benefit, the site gave limitless access for the researcher to conduct the research freely without any obstacle.

3.2.2 Participants

The participants were the students of grade eleven (XI) of a vocational high school. This consideration purposively gave the researcher boundless time and place to conduct research without having any troubles, because the researcher has an access to the sites. The grade XI students in this vocational school were two classes. The first class was XI-RPL (*Rekayasa Perangkat Lunak/Software Engineering*) which consists of 21 students. The second class was XI-TSM (*Tehnik Sepeda Motor/Motorcycle Engineering*) which consists of 18 students.

The RPL class consisted of 22 students, where there were 13 male students and 8 female students. The TSM class consisted of 17 male students and there was only just 1 female student. In order to make both two classes fair in term of the participant, the researcher sorted each of the class members into 14 students. Therefore, both classes consisted of 14 students.

As the behavior towards technology of the XI-RPL class was more purposive than the XI-TSM one, XI-RPL class was considered as the experiment group (Group A), and XI-TSM class was the control group. The consideration above was based on several reasons as follows:

- XI-RPL students had enough number of facilities to use internet (i.e. notebook).
- Because of the XI RPL students were familiar with computer and internet, it gave the researcher benefit to save time and energy, instead of teaching them how to operate notebook and how to connect to internet.

3.3 Data Processing

As mentioned earlier, this study used sequential explanatory mix-method (quantitative followed by qualitative); therefore, there were two stages including the quantitative stage and the qualitative stage. Data processing consisted of three stages which include data collection, data analysis, and data interpretation. Those three stages were conducted both on quantitative session and qualitative session.

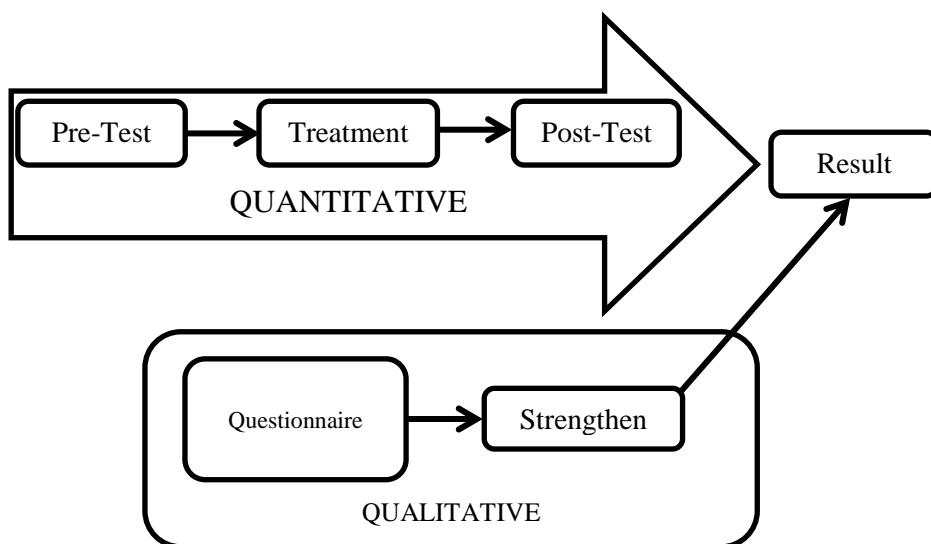


Figure 3.1 Conceptual Framework 2

3.3.1 Quantitative Stage

The quantitative session involved pre-test and post-test to both experimental group and control group. Between pre-test and post-test, only the experiment group had treatments.

3.3.1.1 Data Collection in Quantitative Stage (Pre-Test and Post-Test)

Data collection in quantitative stage involved pre-test and post-test as a measurement. The pre-test and post-test was a test of translating technological text. The students translated the text by a free translation method. Free translation

reproduces the matter without the manner, or the content without the form of the original (Newmark, 1988: 46-47). It means that the translator is free to translate the source language text into their target language text by their language style. The more important thing in this method is that the reader of the translation result understands about what is being discussed on the text.

The text given is shown below.

Text for IX-RPL

The physical computer and its components are known as hardware. Computer hardware includes the memory that stores data and program instructions; the central processing unit (CPU) that carries out program instructions; the input devices, such as a keyboard or mouse, that allow the user to communicate with the computer; the output devices, such as printers and video display monitors, that enable the computer to present information to the user; and *buses* (hardware lines or wires) that connect these and other computer components. The programs that run the computer are called software. Software generally is designed to perform a particular type of task—for example, to control the arm of a robot to weld a car's body, to write a letter, to display and modify a photograph, or to direct the general operation of the computer (Snyder, 2008).

Text for IX-TSM

Riders regulate motorcycle speed with a twist-grip on the right handlebar called the throttle. Twisting the grip backwards opens a throttle valve in the engine, increasing the amount of air and fuel that enters the cylinders. In older motorcycle engines, twisting the throttle increases the amount of fuel and air pulled into the carburetor, a device that mixes the fuel and air before it is delivered to the cylinders for combustion. Many motorcycles built after 1990 have fuel injection systems instead of carburetors. A fuel injection system uses computer-controlled fuel injectors to spray measured amounts of fuel into each of the engine's cylinders (Carley, 2008).

Although it was different to what was being discussed on both texts, nevertheless, both texts above were in the same weight in term of three things, fidelity, liberty, and equivalence (Nord, 1991: 22-23). Nord (1991: 22-23) mentioned that fidelity is being faithful. The writer interprets that the meaning of

being faithful here is that the text relevant to the participant, as the RPL was given a text discussing computer in an elementary discussion. The term of elementary here means that the computer discussion on the text is in a basic term of computer, including the part of computer such as keyboard, mouse, printer, software, the basic process of computer operation, and etc. Similar to the RPL class, the TSM class was also given a text relevant to their major, which is about motorcycle. The discussion was also on its elementary level, where it discusses the part of motorcycle such as cylinder and throttle; the term finds in motorcycle such as combustion process, and etc.

Therefore, there was no problem to give different text to different group/class. This consideration was chosen in order to make them easy to answer the test. Those texts above also met the discussion to their major, where the XI-RPL class was given a text discussing on computer, and the XI-TSM class was given text discussing on motorcycle.

The next criterion that Nord (1991) mentioned is the liberty which means being free. The writer himself sees that the term being free is that the text is not too over-discussed or over-laps in its discussion, and the language to discuss the matter of computer or motorcycle itself is still in an understandable language for the vocational school students, so they understood freely the text because the text was their major of discussion.

Finally, the last criterion is the equivalence. Nord mentioned that the term equivalence here means that two texts share the same function. The writer sees the text above shares the same function which is describing something. Kane (2000:

351) says that description is about sensory experience – how something looks, sounds, tastes. Mostly it is about visual experience, but description also deals with other kinds of perception. Therefore, the text used in this study was categorized as a descriptive text which in RPL class the text was describing computer generally and in TSM class the text was describing motorcycle generally.

Furthermore, after dissecting the texts, the writer found that both texts have 15 fragments. Kane (2000: 187) says that fragment is a single word, a phrase, or a dependent clause standing alone as a sentence. It is considered fragmentary rather than a grammatical sentence because it is not grammatically independent and may not contain a subject and a finite verb. In formal writing fragments are generally a fault, though occasionally valuable for emphasis or variety.

During the test, the students analyzed text individually and then try to interpret the meaning through translating the text. The total amount of time given to translate the text is 45 minutes (1 credit hour for senior/vocational high school). While translating text, students were allowed to consult dictionary whether it was conventional dictionary (dictionary book) or electronic dictionary (phone dictionary). The main output that the students insisted to write their understanding of the text given in Bahasa Indonesia freely on their own language without worrying the source text. The most important thing was to understand what is being discussed on the text. Then the result of the pre-test and post-test was analyzed by using the criteria as shown below.

3.3.1.2 Scoring for Pre-test and Post-test

In order to make easy the scoring stage of the pre-test and post-test, writer had made the text splits into fifteen fragments as mentioned earlier. The fragments were not considered as one sentence full, but instead a rest or split where the reading meets the reading intonation. The fragments for both texts are shown below.

Text for Experiment Group

¹*Bentuk fisik komputer beserta komponen-komponennya itu disebut dengan perangkat keras.*

²*Perangkat keras computer termasuk diantaranya adalah:*

³*memory yang berguna untuk menyimpan data dan program;*

⁴*CPU yang menjalankan program;*

⁵*alat input, seperti keyboard ataupun mouse,*

⁶*yang memungkinkan pengguna computer berkomunikasi dengan komputernya;*

⁷*alat output, seperti printer ataupun layar monitor,*

⁸*yang memungkinkan computer untuk menampilkan informasi kepada pengguna komputer;*

⁹*dan buses (jaringan perangkat keras atau kabel) yang menghubungkan jaringan tersebut dengan komponen komputer yang lainnya.*

¹⁰*Program yang menjalankan komputer disebut perangkat lunak.*

¹¹*Perangkat lunak umumnya dirancang untuk menjalankan tugas tertentu –*

¹²*contohnya, untuk mengendalikan tangan robot pada proses pengelasan badan mobil,*

¹³menulis surat,

¹⁴untuk menampilkan dan mereka-reka foto,

¹⁵ataupun untuk menjalankan pengoperasian umum pada computer.

Text for Control Group

¹Pengendara sepeda motor mengatur kecepatan motornya menggunakan handel gas

²yang berada di sisi kanan setang/kemudi yang dinamakan klep.

³Memutar handel gas ke arah belakang

⁴akan membuka katup klep yang berada di mesin,

⁵sehingga meningkatkan jumlah udara dan bahan bakar yang memasuki silinder.

⁶Pada jenis mesin motor yang lama,

⁷dengan memutar klep

⁸akan meningkatkan jumlah bahan bakar dan udara yang dialirkan dari karburator,

⁹karburator ialah alat yang mencampur bahan bakar dan udara

¹⁰sebelum dialirkan ke silinder untuk proses pembakaran.

¹¹Kebanyakan jenis motor yang dibuat setelah tahun 1990

¹²mempunyai teknologi sistem fuel injeksi bukannya karburator.

¹³Sistem fuel injeksi menggunakan alat penyembur bahan bakar yang dikendalikan computer

¹⁴untuk menyemburkan sejumlah bahan bakar

¹⁵ke tiap-tiap silinder mesin.

Each fragment then followed characteristic of good translation which includes accuracy, clarity, and naturalness (Larson, 1984). The term accuracy means that the translation should give the exact meaning as nearly as possible to the original message, while clarity means it should make the meaning easy to understand – no confusing phrase. And the last is naturalness which means it should not sound like a translation, but the way the local people talk or write.

Besides, the writer used the term endophoric cohesion – anaphoric and cataphoric reference (Eggins, 2004: 34-35). The anaphoric reference means that the referent has appeared at an earlier point in the text (Eggins, 2004: 34). In term of this study, the anaphoric reference means that the next fragment relates to the previous fragment and makes the meaning make sense. The cataphoric reference means when the referent has not yet appeared, but will provided subsequently (Eggins, 2004: 35). The cataphoric reference meant by this study was that the fragment had relation to next fragment and make it sense.

Thus, the writer was formulated scoring based on the criteria of good translation and endophoric cohesion. Each fragment above meets the condition as follow:

Table 3 1 Scoring Condition

Translation			Endophoric		Score	Criteria	Explanation
A	C	N	An	Ca			
✓	✓	✓	✓	✓	1	Good	No mistakes
✓	-	✓	✓	✓	1	Good	There is a mistake whether on A, C, N, An, and Ca.
✓	✓	✓	-	✓	1	Good	
-	✓	-	✓	✓	0.5	Average	There are two mistake whether on A, C, N, An, and Ca.
✓	✓	✓	-	-	0.5	Average	
-	-	✓	✓	-	0	Bad	
-	-	-	-	✓	0	Bad	
-	-	-	-	-	0	Bad	There are three or more mistakes

Description of the table:

- **A** means accuracy
- **C** means clarity
- **N** means naturalness
- **An** means anaphoric reference
- **Ca** means cataphoric reference
- For the good translation, the score is 1 (one). The criterion of good here means that the translation is fine for the most part of the fragment or meet the accuracy, clarity, and naturalness; and there is relation between the fragment to the previous and the next fragment if so, and it is logic/make sense.
- For the average translation, the score is 0.5 (a half). The criterion of average translation here means that there is/are mistake(s) or violation whether on accuracy, clarity, and naturalness and/or there is no endophoric cohesion. However, the meaning of the fragment is still acceptable, and it does not destruct the meaning of the fragment and still keeps the entire meaning of the text.
- For the bad translation, the score is 0 (zero). The criterion of the bad translation here means that the mistake on the fragment cannot be tolerated. There is no relation to the previous or to the next fragment. The meaning of the fragment is not logic/make sense/acceptable.

Each fragment scored range from 0, 0.5, and 1. The sum of all correct fragments were multiplied by one hundred, and then divided by fifteen, the result

of that operation was the score that the student get. The formula for scoring as follows:

$$score = \frac{\sum fs \times 1000}{15}$$

Description of the formula above:

- Score means score that a student gets.
- $\sum fs$ means the sums of fragment score.

Example of the case:

From 15 fragments, a student got 10, therefore: $Score = \frac{10 \times 100}{15} = \frac{1000}{15} = 66$

That student got 66 for his translating score.

3.3.1.3 Treatment

After the pre-test and before the post-test, there was a treatment for experiment group. The treatment here means the teaching and learning conducted in experiment group was involving Google Translate as a media. The material for both experimental and control group were the same material as shown in the table.

The sequence of meetings in both experiment and control group are as follow.

Table 3 2 Treatment Schedule

No	Meeting	Day and Date	Activity
1	Meeting 1	Thursday, October 17 th 2013	Pre-Test
2	Meeting 2	Monday, October 21 st 2013	Translating Words
3	Meeting 3	Thursday, October 24 th 2013	Translating Phrases
4	Meeting 4	Monday, October 28 th 2013	Translating Sentences 1
5	Meeting 5	Thursday, October 31 st 2013	Translating Sentences 2
6	Meeting 6	Monday, November 11 th 2013	Translating a Text
7	Meeting 7	Thursday, November 14 th 2013	Interpreting a Text
8	Meeting 8	Thursday, November 28 th 2013	Post-Test& Questionnaire

The whole treatment from the beginning until the last was adapting the bottom-up process of learning. In bottom-up process of learning, the reader or listener focuses on such things as individual words, phrases or cohesive devices and achieves understanding by stringing these detailed elements together to build up a whole (Harmer, 2007a: 270). The treatment was started by words as a low segment of text construction, and then followed by phrase, sentence, and finally text.

Treatment was conducted by adapting the task-based learning method (TBL). The TBL method consists of three stages – pre task, task cycle, and language focus (Harmer, 2007a: 71-72). In pre-task stage, teacher explored the topic and introduced the task of the students. In task cycle stage, students perform the task in groups and the teacher monitored them, while in language focus stage, students examined their works guided by the teacher, and teacher gave feedback. The term feedback in this stage was a direction on how to translate material.

The use of TBL was in order to achieve several advantages as mentioned in www.teachingenglish.org.uk, including: The students are free of language control. In all three stages they must use all their language resources rather than just practising one pre-selected item. A natural context is developed from the students' experiences with the language that is personalised and relevant to them. The students will have a much more varied exposure to language with TBL. They will be exposed to a whole range of lexical phrases, collocations and patterns as well as language forms. The language explored arises from the students' needs. This need dictates what will be covered in the lesson rather than a decision made

by the teacher or the coursebook. It is a strong communicative approach where students spend a lot of time communicating. It is enjoyable and motivating.

In conclusion, the term TBL method on treatment in this study consisted of three stages. The first is pre-task stage where teacher described the instruction for each single treatment. The second task was the students did their task in group. And the last, students examined their work guided by teacher, and teacher told them how to translate.

- **Meeting 1 (Pre-Test)**

The pre-test was conducted on Thursday, October 17th 2013 in SMK Muthia Harapan Cicalengka. The participants were the grade eleventh of motorcycle engineering class (the control group) and the grade eleventh of software engineering class (the experiment group). The control group got the earlier pre-test which approximately at 10:45 a.m., and the experiment class got the last hour at 12:45 p.m.

The school program had the students recite Quran at the beginning of the learning activities; therefore the researcher led them to recite it first. After that, the researcher announced them pre-test. The pre-test itself made the students translate a text which was different for both classes. The researcher spread the test sheets. The condition for the pre-test was to translate a text, they may use dictionary whether it was dictionary book or dictionary on the phone – but not Google Translate. The test was conducted for approximately forty five minutes. After finishing the test, the researcher collected the test sheets from the students and

informed them to bring any laptop in order to use for the accessing Google Translate. The result for the pre-test itself can be seen in the appendices. However, there was still time left, so the researcher continued to teach the material as shown in the government syllabus.

- **Meeting 2 [Translating Word(s)]**

Meeting 2 was conducted on Monday, October 21st 2013 at 07:30 to 09:00 a.m., and it is only for experiment group (software engineering class). Although the time allocation for the meeting was one hour and a half, but the effective time for the treatment was only forty five minutes, and the rest of the time was used for teaching the government syllabus. In this meeting 2, students were taught how to translate word, especially the words related more to their major (words about computer for software engineering class, and words about motorcycle for motorcycle engineering class). The major indication for this meeting was to identify the technical word and try to find the equivalence in the target language (in this case Bahasa Indonesia).

In this meeting 2 and the following meeting later, each meeting would consist of three stages of activities – pre-activity, whilst-activity, and post-activity, whereas in whilst-activity was divided into three stages also which included pre-task, task-cycle, and language focus. The pre-activity was greeting and checking students' attendance, reciting Quran, and preparing the media for the activities which included laptop and connection. Connection here got from the android device which took the advantage of wifi-tethering.

The whilst-activities itself was divided into three steps which include the task-based learning (TBL) steps which included pre-task, task cycle, and language focus. Meanwhile, in pre-task activity, the researcher started by introducing Google Translate briefly – how to access it, its interface, and how to translate by using it. However, some students had already known about Google Translate. After that, researcher divided the students into four groups and each group consist a laptop to use. Then, the researcher spread the task-sheet (the form of the sheet can be seen in the appendices).

In task-cycle activity, students did the worksheet by consulting Google Translate for approximately fifteen minutes. After students finished their task, in language focus steps, researcher collected the task-sheets, confirmed and checked their task-sheets. The indicator of the goal fulfilled in this meeting was the students had at least seven correct answers out of ten answers. The students task sheet was as shown below.

1.1 Word (RPL)	
1. Computer	: komputer ✓
2. Physic	: penerjemahan X
3. Processing	: pengolahan ✓
4. Program	: program / pencarian ✓
5. Input	: masukan ✓
6. Output	: keluaran / hasil ✓
7. Device	: alat / perangkat ✓
8. Monitor	: pengamatan / pemantauan / mengeluarkan X
9. User	: pemakai ✓
10. Software	: perangkat lunak / keperluan " / mengalankam komputer
11. Hardware	: perangkat keras / komponen yang dapat dipegang
12. Component	: bagian - bagian ✓
13. Mouse	: mouse ✓
14. Keyboard	: keyboard / papan ketik jari ✓
15. Operation	: pembelahan / operasi ✓

In this meeting as shown on the picture above, students had already understand the context of translating words, nevertheless, there were still two or three failed context, i.e. operation was translated into *pembedahan* which means surgery. The role of teacher's feedback here was to redirect them and to let them know the context of the words, whether where the words are used – in the computer context or in the medical context.

Then, researcher gave feed-back to students. Teacher told students regarding naturalness of translating word. To translate word, there is also an adaptation of the word in the local term which means it is contextual. For example, the word "mouse" is literally translated to "*tikus*"; however the word "mouse" in term of computer is translated to "mouse" also. It will become weird to have "*tikus*" which refer to a device for pointing in computer screen. Although there is equivalent word "*tetikus*" in Malay, however, the word rarely used in Indonesia. The pre-task, task-cycle, and language focus was conducted for approximately forty five minutes. The rest of the time was used to give students the material as shown in government syllabus.

- **Meeting 3 [Translating Phrase(s)]**

Meeting 3 was conducted on Thursday, October 24th 2013 at 12:45 p.m. to 13:15 p.m.; in one hour and a half, the effective time was only forty five minutes. The term translating phrase activity here means that the students involved in the activity of how to define the meaning of the combined words. In the previous meeting, students had already learnt to identify word and define the possible

meaning in the target language; and in this meeting 3, students learnt how to define the combined words meaning. As we know that between English language and Bahasa Indonesia has different combined words order. Generally, the first word in English language will take the second place in the word order, and vice versa in Bahasa Indonesia.

As usual, activities were divided into three phases – pre-activity, whilst-activity, and post-activity; meanwhile in whilst-activity consisted of three steps – pre-task, task-cycle, and language focus. In this meeting 3 treatment, the pre-activity consisted of greeting and checking students' attendance, continued by reciting Quran and preparing media which included laptop and internet connection.

After finishing the pre-task activities for approximately fifteen minutes, the activity was continued to whilst-activity which consisted pre-task, task-cycle, and language focus. In pre-task step, researcher gave students the instructions of the task where students needed to translate phrase available in the task-sheet. Students were divided into four groups where in each group there was a laptop to access Google Translate. When students had already the instruction of the task, the researcher spread the task-sheets.

In task-cycle step, students did the worksheets regarding phrase about computer term. This step did for twenty minutes. After students finishing their task, the researcher collected the task, and the sample of the students' task sheet as shown below.

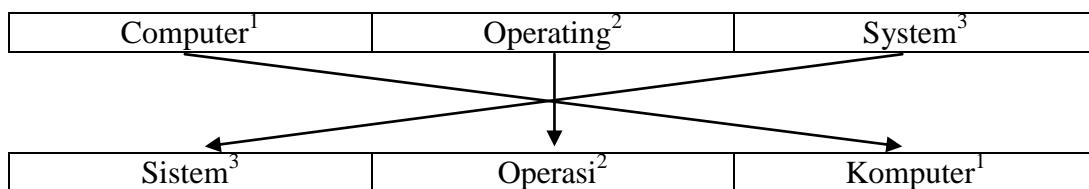
2.1 Combined Word (RPL)	
1. Physical computer	: fisik komputer ✓
2. Computer hardware	: Perangkat keras komputer
3. Program instruction	: Instruksi program
4. Central processing unit	: CPU ✓
5. Input device	: Alat masukan ✓
6. Output device	: Alat keluarkan ✓
7. Video display monitor	: Layar monitor ✓
8. Hardware lines	: Garis Pemantulkan keras ↗
9. Computer components	: Bagian komputer ✓
10. Type of task	: Jenis tugas ✓

Figure 3.4 Worksheet on Translating Phrase 1

In this meeting, as shown on the pictures above, students had already understood how to translate phrases, but there were few results which were unnatural. However, students had already known to transfer meaning into a simple understandable word, i.e. central processing unit was simply translated into CPU. The role of teacher's feedback here was to let them know that if there is no equivalent word in target language – Bahasa Indonesia, so they just simply used the common word in computer term although it is in English.

The next task of the researcher in this language focus step was to give students feedback regarding translating phrase. The researcher tried to confirm the case as follow. Sometime, students think that word order in English is reversing the Indonesian word order. In English language, a noun phrase will put the noun at the end of the phrase, i.e. input device where the device is the noun and input is the adjective; whereas, in Bahasa Indonesia, the noun is put at the beginning of

the order, i.e. *alat keluaran*. In a simple way students had this formula for translating phrase.



The output of this meeting was that students hopefully understand the concept of converting English phrase into Bahasa Indonesia, where not all functions in a sentence – subject, predicate, and object – were reversed.

- **Meeting 4 (Translating Sentence 1)**

Meeting 4 was conducted on Monday, October 28th 2013 at 07:30 a.m.to 09:00 a.m. The entire time allocation was one hour and thirty minutes, and the effective time for treatment was only forty five minutes. In this meeting 4, students involved to learn the sentence construction slightly in English language, and how to translate it freely into target language (Bahasa Indonesia). The words and phrase here then involved in the sentence construction, and here is the lesson plan for meeting 4.

In pre-activity, researcher greeted and checked the students' attendance as usual, then continued by reciting Quran, and preparing learning media (laptop and internet connection). The activity was continued with whilst-activity which included pre-task, task-cycle, and language focus. In pre-task activity, researcher

gave the instruction for doing the task where in this meeting was to translate sentence from English into Bahasa Indonesia by consulting Google Translate. This pre-task was about ten minutes.

Before doing the task, researcher divided the students into four groups where in each group there was a laptop to access Google Translate. In this task-cycle step, students did worksheet for approximately twenty minutes, and in the language focus step, researcher collected students' work and confirmed it. The result of students' work in this meeting was as follow.

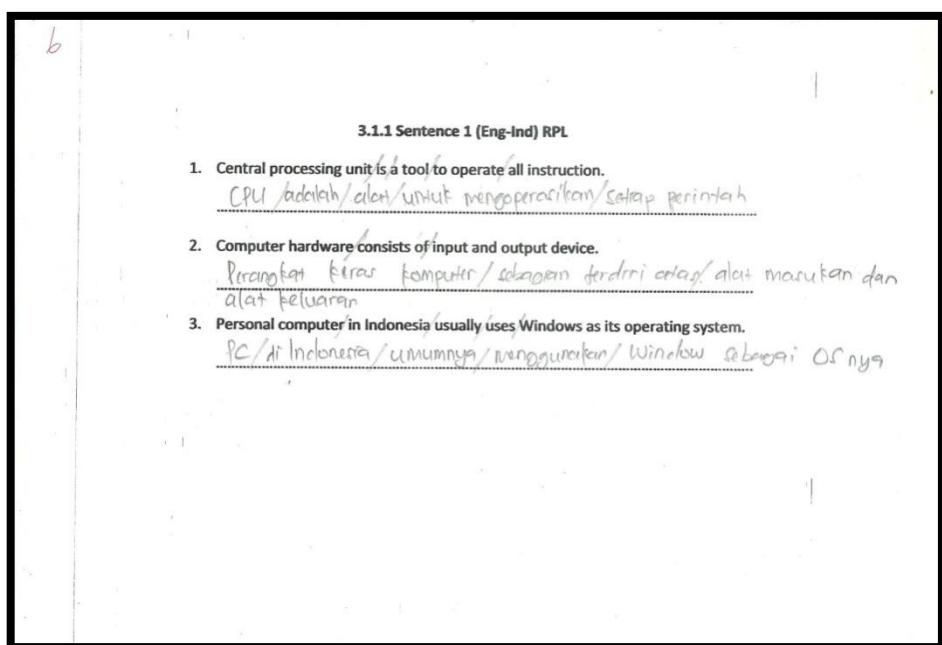
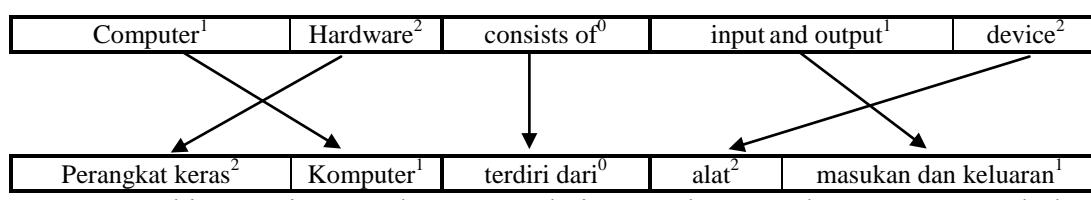


Figure 3.7 Worksheet on Translating Sentence 1

In this meeting, students' translation works met the accuracy and the mistakes became very low. The role of teacher's feedback here was to let them know how to relate or to join each word(s) in a sentence to become a naturally translated in target language.

The feedback for this meeting was regarding translating sentence from English to Bahasa Indonesia. In order to translate sentence from English to Indonesia, first of all students need to know the function (subject, predicator, object, complement, and so on) of each word or phrase in a sentence. Therefore the researcher told them to identify the sentence first and decide the function of each. Take a look at the example below.



In this meeting, students' translation works met the accuracy and the mistakes became very low. The role of teacher's feedback here was to let them know how to relate or to join each word(s) in a sentence to become a naturally translated in target language.

- Meeting 5 (Translating Sentence 2)

Meeting 5 was conducted on Thursday, October 31st 2013 at 12:45 p.m. to 13:15 p.m. the allocation time for this meeting was one and a half hour, nevertheless the effective time for the treatment was forty five minutes. In contrary to the previous meeting which talked about translating sentence, this meeting was also talking about translating sentence, but rather was talking about how to translate Bahasa Indonesia (source language) into English language (target language). The major purpose of taking this activity was to make the students hopefully see the different between those two languages, thus the students could

distinguish it and made it easier in the next contact. Here is the lesson plan for meeting 5.

In the pre-activity, researcher greeted and checked the students' attendance, led the students recite Quran, and prepared the learning media including laptop and internet connection. The time allocated for pre-activity was approximately fifteen minutes. The whilst-activity was allocated for forty five minutes but was divided into three stages – pre-task, task cycle, and language focus. As usual, in the pre-task, researcher gave instruction regarding the task they needed to do in this meeting which in this case translating sentence from Bahasa Indonesia into English language by consulting Google Translate. In this meeting, students were also divided into four groups and in each groups there was a laptop to use. After that, researcher spread the task-sheets, each student got one sheet.

In the task cycle step, students did the task for approximately twenty minutes. After that, researcher collected students' work and began to confirm and check it. The sample of students' work was as follow.

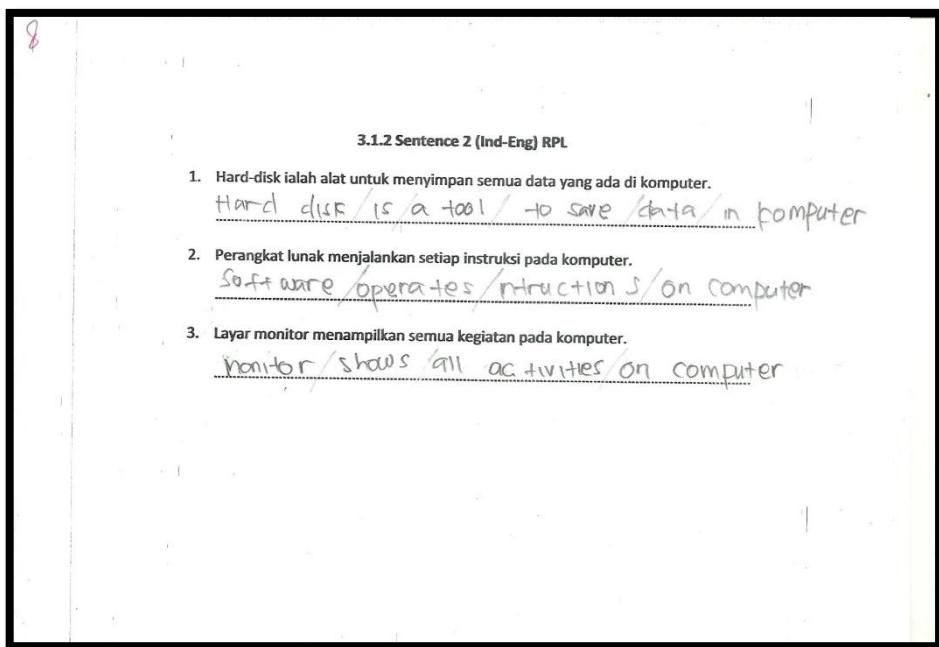


Figure 3.9 Worksheet on Translating Sentence 2

The role of this meeting was to let the students know and to balance the previous process of translating sentence from English into Indonesia, so that the students figured out the difference. The feedback for this meeting was to show students the difference between the structure of English sentence and the structure of Indonesian sentence.

Perangkat lunak	menjalankan	setiap instruksi	pada komputer
Software	runs	every instructions	on computer

- Meeting 6 (Translating Text)

Meeting 6 was conducted on Monday, November 11th 2013 at 07:30 a.m. to 09:00 a.m. in the morning. As usual, the activity consisted of three phases of activities – pre-activity, whilst-activity, and post- activity where in whilst activity

consisted of pre-task, task-cycle, and language focus. In pre-activity researcher in the beginning of activities greeted and checked students' attendance. Activities were followed by reciting Quran and preparing learning media which included laptop and connection.

In the pre-task activity, researcher gave instruction to students regarding the task they needed to do which was translating text by dissecting it first. Researcher divided students into four groups where in each group there was a laptop to access Google Translate. In this activity, students were involved to an activity of translating a short text, each word was translated into target language. Nevertheless, the students were not burdened to define the whole meaning of the text. In task-cycle step, students were doing the task by writing the previous task of translating text by using their own language.

In language focus step, teacher collected the task-sheet and then confirmed the students' works. The students' work was as follow:

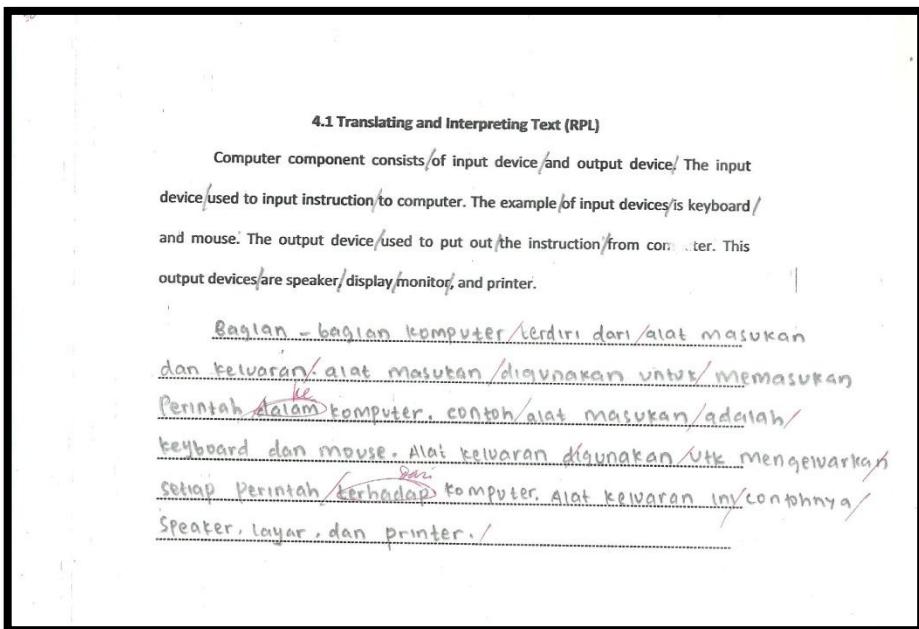


Figure 3.11 Worksheet on Translating Text

In this meeting, students were able to relate a sentence to another sentence, although there were mistakes on choosing the appropriate words, i.e. to computer was translated into *dalam komputer*. The highlighted problem in this case was the preposition understanding – how to use it correctly in term of sentences.

- **Meeting 7 (Interpreting Text Meaning)**

Meeting 7 was conducted on Thursday, November 14th 2013 at 12:45 a.m. to 13:15 a.m. The available time was one and half hours; nevertheless, the effective time for conducting the treatment was forty five minutes. The goal of this meeting was to know the way how they interpret the text's meaning through their own language. However the indicator of the achievement for this meeting was that the students were at least able to interpret a text by rewriting the previous translation result through their very own language naturally. As usual in the pre-

activity, researcher greeted and checked the students' attendance, and then continued by leading them to recite Quran. In this meeting, students involved to an activity to continue the previous meeting activity. Where in the previous activity, students were asked to translate a text from English into Indonesia; the activity was continued in this meeting by trying to figure out the entire meaning of the text.

The meeting consisted of three various activities including pre, whilst, and post activities. In pre activity, researcher greeted and checked the students attendance, continued by reciting Quran and preparing all media for whilst activity. Whilst activity included pre-task, task cycle, and language focus. In pre-task activity, researcher gave students the instruction regarding the recent task which in this case interpreting the previous translation result made by the students. However, before did the activity, researcher divided students into four groups which in each group there would be a notebook to access Google translate in order to help the students interpreted the text. Then, researcher spread the worksheets.

In task cycle activity, students did the worksheet which in these case, students interpreted a text which was translated before by consulting Google Translate. The allocated time for doing this activity was twenty minutes. The activity then was continued by language focus activity. Here in this activity, researcher collected students' works and then confirmed and checked them. The language focus activity was ended by giving feedback which in this case was to make the translated text sounded naturally, which means the students were

introduced to naturalness aspect in translation. The post-activity was used to give students material regarding the government syllabus.

- **Meeting 8 (Post-Test and Questionnaire)**

Meeting eight was conducted to get the post-test score of each group. This meeting was conducted on Thursday, November 28th 2013 at 10:45 to 12:15 for control group (*Tehnik Sepeda Motor/Motorcycle Engineering*) and at 12:45 to 13:15 for experiment group (*Rekayasa Perangkat Lunak/Software Engineering*). Both groups activities included in three phases – pre, whilst, and post activity – in whilst activity consisted of pre-task, task-cycle, and language focus. However this language focus activity was not meant to confirmed students' works but rather than to follow the previous meeting sequence of activity.

As usual, in pre-activity, researcher greeted and checked the students' attendance which then followed by reciting Quran. In pre-task activity, teacher informed students regarding the post-test. The post-test itself was translating a text from English into Bahasa Indonesia. In task-cycle activity, students did the test under the following condition: experiment group was allowed to consult to Google Translate, while control group was allowed to consult to conventional dictionary book. The approximate time allocated for the task cycle activity was forty five minutes. After all students finished their works, researcher collected them, and the rest of the time was used to give the students material as shown in government syllabus.

3.3.1.4 Quantitative Data Analysis and Result

The data taken from the pre-test and the post-test was the score reflecting the students' ability. This data was analyzed by using t-test only on post-test. The consideration of using t-test was that t-test is used to measure or can be conducted on a one sample, paired samples, and independent samples (Park, 2009: 4). The sample used on this study was two samples where there were two groups which were equal but given different treatment on each group to measure whether or not there is difference.

The quantitative session was analyzed through t-test procedure. The result of post-test was analyzed through stages as follow:

- Putting juncture as seen in prototype analysis which consists of fifteen fragments.

Text for RPL (Experiment Group)

Bentuk fisik komputer beserta komponen-komponennya itu disebut dengan perangkat keras.¹/ Perangkat keras komputer termasuk diantaranya adalah:²/ memory yang berguna untuk menyimpan data dan program;³/ CPU yang menjalankan program;⁴/ alat input, seperti keyboard ataupun mouse,⁵/ yang memungkinkan pengguna komputer berkomunikasi dengan komputernya;⁶/ alat output, seperti printer ataupun layar monitor,⁷/ yang memungkinkan computer untuk menampilkan informasi kepada pengguna komputer;⁸/ dan buses (jaringan

perangkat keras atau kabel) yang menghubungkan jaringan tersebut dengan komponen komputer yang lainnya.^{9/} Program yang menjalankan komputer disebut perangkat lunak.^{10/} Perangkat lunak umumnya dirancang untuk menjalankan tugas tertentu^{11/} – contohnya, untuk mengendalikan tangan robot pada proses pengelasan badan mobil,^{12/} menulis surat,^{13/} untuk menampilkan dan mereka-reka foto,^{14/} ataupun untuk menjalankan pengoperasian umum pada computer.^{15/}

Text for TSM (Control Group)

Pengendara sepeda motor mengatur kecepatan motornya dengan menggunakan handel gas^{1/} yang berada di sisi kanan setang/kemudi yang dinamakan klep.^{2/} Memutar handel gas ke arah belakang^{3/} akan membuka katup klep yang berada di mesin,^{4/} sehingga meningkatkan jumlah udara dan bahan bakar yang memasuki silinder.^{5/} Pada jenis mesin motor yang lama,^{6/} dengan memutar klep^{7/} akan meningkatkan jumlah bahan bakar dan udara yang dialirkan dari karburator,^{8/} karburator ialah alat yang mencampur bahan bakar dan udara^{9/} sebelum dialirkan ke silinder untuk proses pembakaran.^{10/}

Kebanyakan jenis motor yang dibuat setelah tahun 1990¹¹/ mempunyai teknologi sistem fuel injeksi bukannya karburator.¹²/ Sistem fuel injeksi menggunakan alat penyembur bahan bakar yang dikendalikan computer¹³/ untuk menyemburkan sejumlah bahan bakar¹⁴/ ke tiap-tiap silinder mesin.¹⁵/

- Then, students work were examined through the scoring process mentioned earlier.

In order to analyze the quantitative data, the researcher chose t-test procedure which includes two t-test design, they were the paired sample t-test and the independent t-test. The paired sample t-test used to analyze the progress of the experimental group, whereas the independent t-test used to measure those experimental and control group post-test score. Furthermore, the researcher used the sequence of t-test analysis by Kariadinata and Abdurrahman (2012: 210-212, 232-233).

As mentioned earlier, the paired sample t-test used to measure the progress of the experimental group by using their pre and post-test score. The sequence of paired sample t-test analysis is as follow:

- Finding the *Dscore* ($D = \text{difference}$), taken from subtracted the pre-test score (X) by the post-test score (Y). $D = X - Y$;
- Finding the sum of D , symbolized by ΣD ;

- Finding mean of D , symbolized by MD . Taken from $MD = \frac{\Sigma D}{n}$, where n is the number of sample population;
- Finding the square root of D , and then finding the sum of square root of D , which symbolized by ΣD^2 ;
- Finding the standard deviation of $D/difference$, which symbolized SD_D through $SD_D = \sqrt{\frac{\Sigma D^2}{n} - \left(\frac{\Sigma D}{n}\right)^2}$
- Finding standard error from mean of difference (MD), which symbolized SE_{MD} through $SE_{MD} = \frac{SD_D}{\sqrt{n-1}}$
- Finding the t-score or symbolized by t_o through $t_o = \frac{MD}{SE_{MD}}$
- Giving the interpretation to t_o or *t-score*, through:
 - a. Formulizing the alternative hypothesis (H_1) and null hypothesis (H_0).
 - b. Setting the degree of freedom (df) through formula $df = n - 1$
 - c. Finding the t-table value on the t-distribution table which based on df and 5% level of significance.
 - d. Comparing the t_{score} and t_{table} through these conditions:
 - 1) If $t_{score} \geq t_{table}$ so the null hypothesis is rejected which means that there is significant different between pre-test and post-test score, or the Google Translate gives significant progress to students.
 - 2) If $t_{score} \leq t_{table}$ so the null hypothesis is accepted which means that there is no significant different between pre-test and post-test, or the Google Translate does not give any significant progress to students.

The independent sample t-test is analyzed through this sequence:

- Finding the mean of variable X (the post-test score of experimental group), symbolized by M_1 through formula $M_1 = \frac{\Sigma X}{n_1}$ and mean of variable Y (the post-test score of control group) which symbolized by M_2 through formula

$$M_2 = \frac{\Sigma Y}{n_2}$$

- Finding the deviation score of variable X which symbolized by x taken from $x = X - M_1$, and the deviation score of variable Y which symbolized by $y = Y - M_2$
- Making the square root of x , and making the sum of x^2 symbolized by Σx^2
- Making the square root of y , and making the sum of y^2 symbolized by Σy^2
- Finding the t_{score} through the *Fisher* formula (Sudijono, 2005: 314 in Kariadinata and Abdurahman, 2012: 232)

$$t_{score} = \frac{M_1 - M_2}{\sqrt{\frac{(\Sigma x^2 + \Sigma y^2)}{(n_1 + n_2 - 2)} \cdot \frac{n_1 + n_2}{n_1 \cdot n_2}}}$$

- Giving the interpretation to t_o or t_{score} , through:
 - a. Formulating the alternative hypothesis (H_1) and null hypothesis (H_0).
Setting the degree of freedom (df) through formula
 $df = (n_1 + n_2) - 2$
 - b. Finding the t-table value on the t-distribution table which based on df and 5% level of significance.
 - c. Comparing the t_{score} and t_{table} through these conditions:

- d. If $t_{\text{score}} \geq t_{\text{table}}$ so the null hypothesis is rejected which means that there is significant different between experimental (XI-RPL) and control group (XI-TSM), or the Google Translate gives significant progress to experimental group (XI-RPL students).
- e. If $t_{\text{score}} \leq t_{\text{table}}$ so the null hypothesis is accepted which means that there is no significant different between experimental group (XI-RPL) and control group (XI-TSM), or the Google Translate does not give any significant progress to students.

3.3.2 Qualitative Stage

After the result of the quantitative session had been acquired, the qualitative procedure was conducted in order to strengthen the result in the quantitative session. The result whether using GT as a learning media gives significant change to the student score was strengthened by the answer of the student qualitatively.

3.3.2.1 Qualitative Data Collection

The data in qualitative session was conducted just only through one instrument – questionnaire. The qualitative session was conducted just to take any possible reason of the quantitative session without any further and elaborated discussion. However it was slightly discussed to take any relation and to describe the score taken from quantitative session. Questionnaire in this study was used to know the student experience through an arranged set of closed and opened

question. The purpose of the qualitative session was to know the students perception toward learning by using GT and their experience while using GT as a learning assistant. Alwasilah (2000: 107) stated that questionnaire helps to measure three things; they are measuring the existence and distribution of various acts and characteristics which naturally happened. Questionnaire also helps in measuring the frequency of event appearance, and the third is to measure the relation among characteristics, acts, events, and phenomena. The qualitative data (questionnaire) was taken after the post-test conducted. This questionnaire spread among the discussion about how the students' perspective and experience toward the use of Google Translate as a learning assistant for their translation need.

3.3.2.2 Qualitative Data Analysis and Interpretation

The data collected through questionnaire was processed through several stages of process. These processes included the first was the coding and then categorization for later interpretation. Sometimes the analysis of qualitative data was only briefly covered through coding and the generation of theory from data (Babbie, 1979 in Bryman and Burgess, 1994: 3). The coding was important to be conducted as Alwasilah (2000: 114) mentioned that coding helps the researcher in several things such as (1) making the identification of the phenomena to become easy, (2) making the frequency calculation easy, (3) the frequency of code appearance shows the finding alignment, and (4) helping the researcher to arrange the category and its sub-category. The coding process will be conducted along the research until the research has sufficient enough data.

3.4 Conclusion of Methodology

The study used sequential mix-method which means quantitative method followed by qualitative. The site was one of vocational school in *Kabupaten Bandung* and the participants were students which were divided into two groups – the experiment group and the control group. Experiment group was the software engineering class and the control group was the motorcycle engineering class. Both classes received pre-test and post-test, whereas only experiment received treatment. The data processing of this study covers consists of two stages – the quantitative stage and the qualitative stage. In the quantitative stage, data collection was conducted through pre-test and post-test; whereas in the qualitative stage, data collection was conducted through questionnaire.