

CHAPTER III

RESEARCH METHODOLOGY

The previous chapter has discussed the literature review underpinning the values of writing in general, as well as the processes and strategies used in writing. This chapter discusses some important aspects related to research methodology, including the research questions, research design, participants of the study, research instruments, data collection place, time, and procedures, and data analysis procedures.

3.1. Research Questions

The study was conducted in order to answer the following questions:

1. What writing processes did the Indonesian tertiary EFL students undergo?
2. What meta-cognitive strategies did the participants apply in their processes of writing an English essay?

3.2. Research Design

In order to answer the questions above, think aloud protocols were used as a main method. As suggested by Cumming (2001) that think aloud protocols are recommended to be used in investigating writing process and strategies, since most of the data in these studies are “mental and self-directed” (p.6). Furthermore, earlier studies in composing processes (such as Emig, 1971; Perl, 1978; Flower & Hayes,

1980, 1981; Raimes, 1985; Arndt, 1987; Bereiter & Scardamalia, 1987; Victori, 1997, 1999; Armengol-Castells, 2001; Mu, 2007; and Roca de Larios *et al.*, 2008) and language learning strategies (e.g. O'Malley & Chamot, 1990) employed the think aloud protocols as their research method. This method was used in the belief that it would give a more accurate picture of participants' online processing on what they were thinking while writing, so that the processes and strategies used by the subjects could be described.

In addition, this research is also a case study, which is qualitative in nature, observing and analyzing intensely on a "single unit" or "bounded system" (Smith, 1978 cited in Merriam, 1998: 19, see also Fraenkel and Wallen, 2003: 439) such as an individual program, event, group, activity, or ongoing process and developing "as full an understanding of that case as possible" (Punch, 1998: 150 cited in Silverman, 2005: 126) in a "bounded context" (Miles and Huberman, 1994: 25). In the same vein, Sharan Merriam (1998) suggests that "a case study design is employed to gain an in-depth understanding of the situation and meaning for those involved" (p.19). Here, the interest of the study is more "in the process rather than outcomes" (1998:19). Through qualitative case study, the rich data gained from small number of participants are expected to give thick descriptions of the strategies undergone by the writers while they were writing an English essay. Even though the focus of the present study is qualitative, occurrences of each strategy category, the time spent by each writer, and the length of the essay were counted by using simple counting

method. This was especially done in order to illustrate the results of the data analyses in chapter four.

Following previous case studies on English as first, second, and foreign language writing process and strategies (e.g. Emig, 1971; Perl, 1978; Zamel, 1983; Arndt, 1987; Raimes, 1985, 1987; Victori, 1997, 1999; Armengol-Castells, 2001; and Hu & Chen, 2006) except Flower and Hayes (1981), this study employed multiple data collection methods. Among them were think aloud protocols, post-writing questionnaires, and video-taped observations of the participants in the process of writing. As suggested by Yin (1993) that “multiple sources of evidence – converging from the same set of issues” (p.32) or “multiple data collections and analytic procedures” (Freebody, 2003: 83) should be applied in order to increase the construct validity of the study (Yin, 1993: 39-40). Therefore, the findings obtained from the think aloud protocols were triangulated with the findings obtained from the other data collecting methods used in this study.

3.3. Participants of the Study

There were four participants involved in this case study, consisting of two males (Writer 1 and 2) and two females (Writer 3 and 4). All of them were from the same level of education, i.e. third year university students, taking an English Education program in an education university in Bandung. All participants involved had taken two semesters of English writing course at the university and voluntarily

participated in the study. As stated in chapter one, the participants of the study were classified based on their levels of English language proficiency, as one of the variables.

In order to get more valid results of the participants' levels of English proficiency, a week before the data collection time, each of them took a PTESOL (Proficiency Test of English for Speakers of Other Languages) test at the language center. This test was taken without any preparations in order to get their real ability of English language proficiency. This procedure is in line with Carson and Kuehn (1992) and Cohen and Brooks-Carson (2001) that standardized test should be used in classifying participants' language proficiency. As listed by Carson and Kuehn (1992), participants with TOEFL scores of 420-480 could be classified as having a low intermediate level of English proficiency. Those who scored 480-520 were classified as high intermediate, and those who scored 525 and above were considered as advanced. Since PTESOL test has been claimed as similar to TOEFL, in which English structure, reading comprehension, and listening are included (Sukyadi, in private conference through telephone, June 24, 2009), the scores obtained from PTESOL could be equaled to those of TOEFL.

From the PTESOL test, it was found that Writer 1 got the highest score, i.e. 553. Thus, his English language proficiency was classified as advanced. Meanwhile, Writer 2 and 3 got 483 and 500 respectively, indicating a high-intermediate level of English proficiency. Writer 4 got the lowest score on the PTESOL test, i.e. 467,

describing a low-intermediate level of English language proficiency. The descriptions of the participants' characteristics can be seen more clearly in Table 3.1. (Appendix I)

3.4. Research Instruments

There were two instruments employed in the data collection of this study. Both of them were writing prompt and post-writing questionnaire. All of which will be elaborated in the following sub-titles.

3.4.1. Writing prompt

A topic of a recent issue in English education field was used as the writing prompt in the data collection. The prompt was as follows:

Nowadays, English mastery has been emphasized to the educational outcomes in Indonesia. This is shown through the regulation of the 2003 System of National Education Act number 20 article 50 subsection 3, which states that “the government and/or the local government[s] will establish at least one educational institution of all levels to be developed into an international standard educational institution”. Since this regulation was released, the government has established numerous international standard schools (Sekolah Bertaraf Internasional = SBI), in which English is used as the medium of instruction for subjects that have global significance, such as science and mathematics. However, there are pro and contradictive opinions towards this program. The proponents state that this program may be successful and may increase students' proficiency of both English and the content subjects. In contrast, the opponents argue that this program may not be feasible since the teachers and the supporting facilities have not been ready yet. How do you think about this? Do you agree or disagree to the use of English as the medium of instruction in math and science subjects as those practiced in SBI programs? Why? State your stance whether pro or contra and explain your arguments specifically in an approximately 300 words persuasive essay!

The writing prompt with the topic of bilingualism in education above was used in the belief that all participants would be familiar with it, since all of them were

students of English education program at the same university. Besides, bilingualism in education has become a burning issue in Indonesian educational field (Hallett, 2005; Arifin, 2003). As argued by Roca de Larios *et al.* (2008: 35), topic familiarity is essential to be considered in designing writing tasks since it may influence participants' degree of involvement. Therefore, the researcher used the topic above as the writing prompt in her study.

3.4.2. Post-writing questionnaire

Besides utilizing the writing prompt, the researcher also made use of post-writing questionnaire as an instrument in order to substantiate the findings gained from the think aloud protocols. Adopted from Sasaki and Hirose (1996: 170-171)'s study, the questionnaire asked the writing processes and strategies undergone by the participants at the three main stages, i.e. pre-writing, writing, and post-writing (see Appendix V). As presented in the questionnaire, six questions were included into three main points, such as first, whether or not the participants did any pre-writing activities. If they did, they should state the things done during the pre-writing stage. Second, the questionnaire asked the participants' strategy in keeping their flow of writing, for example, whether they wrote the essay based on the outlines that had been made before or directly wrote the essay without making any overall plans. Besides that, this point also asked the participants' foci of attention (such as grammar, spelling, content, organization, or diction) during writing the essay (measured by a 5-point Likert scale) and whether they had any problems concerning

those aspects as well as their strategies in solving the problems. In the third point of the questionnaire, the participants were asked to state the things they did after writing the essay, whether they did some proof-readings or revisions or not.

3.5. Data Collection Place, Time, and Procedures

In this study, the data were consisted of participants' audio and video recorded think aloud protocols taken while performing an English persuasive/argumentative writing task. Besides that, participants' retrospective verbal data were also gained from post-writing questionnaires. The think aloud session was done within a time limit of one hour plus another 30 minutes for revisions conducted in the next week. Total time spent for the think aloud sessions was 90 minutes. The data collection was conducted in a language laboratory in the Language Center (Balai Bahasa) of Indonesia Education University, Bandung. This place was chosen for its availability of advanced recording tools and quiet atmosphere, so that the participants' voice could be clearly recorded. Since the primary data used in this study was participants' verbalizations during writing an English essay, clear recordings of their voice were obviously required. The data were collected in two separated times for the essay and revision, started from April 30th to May 14th 2008.

There were two kinds of data collection procedures employed in this thesis. Among them were think aloud protocols and retrospective verbal report in a form of

post-writing questionnaire. Each of which will be discussed in more details in the following sub-titles.

3.5.1. Think aloud protocols

As stated previously that this study applied think aloud protocols as a main method of gaining the data. However, this method has some limitations (see point 2.5 in the previous chapter) that may threaten the validity. Therefore, to anticipate the threats of validity associated with this method, the researcher took some measures in collecting the data, which basically entailed making decisions regarding to three main areas. Among them were the choice of the task, the elicitation of the verbalizations, and the coding of the data (see Roca de Larios *et al.*, 2001 for further information about this issue). The first two measures will be discussed in this sub-title, whereas the latter will be discussed in the data analysis procedures sub-title.

First, regarding to the choice of the task, an argumentative writing mode was chosen in the belief that it would lead the participants to adopt a more knowledge transforming approach (see Bereiter & Scardamalia, 1987), and especially, to apply more problem solving behavior in their process of writing. Here, their cognitive activity would be the focus of attention, so that it would be more available for verbal reports (Ericsson & Simon, 1984 cited in Roca de Larios *et al.*, 2008). It was expected that by using an argumentative writing task, the problems of automaticity

commonly occur in think aloud protocols could be overcome and a more useful and informative protocol data would be obtained.

Second, regarding to the elicitation of verbalizations, before starting the data collection session, the researcher gave carefully selected wordings of instruction in Indonesian. This procedure was taken in order to avoid over- and/or under-estimations and interpretations about the things required from the participants and the type of information the participants should report (Jourdenais, 2001: 356 in Roca de Larios *et al.*, 2008: 35). The instruction translated into English was as follows:

I'd like you to write a composition based on the writing prompt that I am going to give you now. While you are writing your composition, I would like you to SAY ALOUD anything and everything that goes through your mind. You have to do everything that you would normally do when writing a composition. The only difference is that today you are going to do it talking aloud. You may use any language(s) that you normally use when writing. You will have a maximum of 1 hour to complete the task.

Immediately before the participants dealt with the task, all of them took a 20 minute training session in order to familiarize and make them get used to the think aloud procedure. This session includes practicing with a mock composition with the topic "The Importance of English Mastery in the Future" without any demonstrations provided by the researcher in order to avoid influencing the participants' behavior (see Roca de Larios *et al.*, 2008: 35). As stated by Smith (1994, cited in Roca de Larios *et al.*, 2001:508), researcher is not to provide any modeling of the think-aloud method, since participants may restrict their "thoughts" to those they had seen modeled. Besides that, modeling the think-aloud technique might have influenced

participants' choice of language. This was avoided, since it was essential to let the participants use the language they would feel more comfortable with for their verbalizations. After all participants have got used to talking whilst writing the mock essay, the data collection session was started.

During the execution of the task, the participants were allowed to use both English and Indonesian. This was done because language choice in think aloud procedure might require participants' recoding of information. Besides that, any constraints such as poor command of the language being used for reporting may cause information loss or alter the original thinking processes. Therefore, the participants were allowed to make use of any of both languages they felt comfortable with.

Furthermore, in the execution of the task, the participants sometimes forgot to think aloud. In order to remind them to keep talking what they were thinking, the researcher prompted them with questions such as "What are you thinking about?" or "What is in your mind?", whenever the participants paused for more than five seconds. By taking the two measures above, as suggested by Roca de Larios *et al.* (2001), the validity of the think aloud method may be increased.

3.5.2. Post-writing questionnaire

Right after the participants finished doing the think aloud procedure, they were asked to fill in a post-writing questionnaire. This was done retrospectively in

nature in order to support the findings gained from the think aloud protocols, so that the researcher could draw a complete description of the participants' writing process and strategies. Besides that, the findings from this method were also used in order to triangulate the findings from the think aloud protocols as well as observation, so that the validity and reliability of the research may be obtained.

3.6. Data Analysis Procedures

After collecting the data, the researcher analyzed them qualitatively and triangulated them in order to get the conclusion. The procedures of the data analysis will be elaborated in the following subsections.

3.6.1. The Scoring of the Writing Task

In order to compare the strategies used by each participant and the products of the writing process, the final drafts of the essay were collected and scored. To meet the standards of reliability (consistency) and validity (accuracy) issues to the assessment of the writing products, some measures were taken by the researcher. Among them were using standardized holistic scoring rubrics as the guide for scoring, and employing and training another rater to evaluate the essay, so that more objective scores may be obtained. As stated by Cassanave (2001), in order to reach objectivity in writing assessment, the "criteria by which writing samples are assessed" (p.121) should be described and "raters to evaluate essays according to the same criteria" (p.121) should be trained.

First, in order to fulfill the requirements of reliability and validity, a standardized holistic scoring guide was applied. Even though the subjects were given additional 30 minutes to revise their first drafts on the next day, the tasks were timed writings, which essays were essentially first drafts. As stated by Carson and Kuehn (1992: 168) that timed writing essays “do not allow for an evaluation of the full range of writing abilities that might be explored if the writers were given more time and opportunities to revise”. Therefore, in this study the essays were evaluated by using “The 1993-1994 Focused Holistic Scoring Guide for Persuasive/argumentative Composition” published by North Carolina Annual Testing Commission (1994). This scoring guide was chosen for its valid and reliable scorings for persuasive/argumentative essays.

There are two domains included in the scoring guide as the criteria of evaluating; i.e. composing characteristics, which “bear on or influence the effective delivery of the writer’s statement or message” (North Carolina Annual Testing Commission, 1994), and language conventions of written composition. The composing domain consists of four general aspects; i.e. main idea, supporting details, organization, and coherence. First, regarding to the main idea, the essays should imply that the writer has identified the cause that is being promoted through the composition and focused on the subject matter being identified. As stated in the scoring guide, moving away from the subject matter may cause the focus to be unclear and the main idea is weakened. It has been the nature of persuasive mode that

the writer must attempt through the composition to bring about a change in a current condition, whether circumstantial or philosophical (Connor & Lauer, 1988: 138), so that the reader becomes in the same line with the writer's point of view (Derewianka, 2004: 75). Therefore, the writer should take a position regarding to the subject matter by possibly making use of inductive organizational plan and building an argument through examples or details so that the readers may identify it. A composition would be regarded as having a clear main idea if the writer's position is clear, whether or not the statement of the position occurs at the beginning of the composition.

Second, in dealing with supporting details, the scoring guide mentions that the essays should provide sufficient and appropriate information (or evidence) to persuade the reader that the change being promoted has merit. Sufficient details are indicated by the use of powerful information load, such as using facts and evidences. This is in line with Sebranek *et al.* (1999) that "the more types of convincing evidence you offer, the stronger your argument will be" (p. 122). If the writer simply lists undeveloped details or using repetitious paraphrasing of the same point, the composition may be regarded as insufficient. Appropriateness is indicated when the composition can maximally persuade the specified audience by using selective and well-presented information, among others are prediction, statistics, observation, expert testimony, comparison. Therefore, an essay would be regarded as sufficient and appropriate if it uses enough supporting details that can persuade the readers with well-presented information.

Third, a composition is valued as having a good command of organization if it establishes a sense of overall plan in the beginning, development, and ending. Besides that, it should also follow the schematic structure of persuasive/argumentative writing, either exposition (thesis statement (position) – arguments – restatement of the thesis (position)) or discussion (issue – argument for – argument against – conclusion) (see Derewianka, 2004: 70-71; Feez & Joyce, 1998: 138-140, for further discussion about types of persuasive/argumentative writing). Fourth, an essay may be regarded as coherent if the sentences (such as ideas, causes, and/or statements) are logically connected. Coherency results from the effective use of organization, unity, reason, and logic by employing one or more cohesive devices. As identified by Halliday and Hasan (1976, in Gibbons 1991: 83-86), there are five ways of making text cohesive; among them are by using reference, conjunction (connectives), substitution, ellipsis, and lexical cohesion (synonyms). First, reference is words pointing to something in the text. These words may point back to something that has been mentioned or forward to what is going to be said. Reference includes words such as *he, she, it, his, hers, him, her, their, them, here, there, the, this, those, that*. For example, like what mentioned in the following text:

A tall black figure was outside Sophie's house. The figure turned and faced her window, and then he walked on. He came to Mr. Goochey's house and there he stopped. (adapted from *The BFG* by Roald Dahl, cited in Gibbons, 1991: 84).

From the text above, it can be seen that the underlined words refer to what have been mentioned in the previous sentences. The use of these words makes the text more coherent.

Second, conjunctions or connectives are words that are used to link and organize ideas. These include words indicating addition, contradiction, cause and effect, and conclusion, such as *and*, *but*, *because*, *so*, *unless*, *although*, *if*, *however*, *nevertheless*, *therefore*, etc. Besides that, there are also words that are used to sequence ideas in time (time connectives), such as *and*, *and then*, *before*, *after*, *later*, *the next day*, *millions of years later*, *afterwards*, etc. By using conjunctions and connectives, readers may interpret or predict the next idea in the text. The example of the use of conjunctions can be seen in the following text:

He walked all day although he was exhausted. Finally he stopped outside a small hotel in a village. If he went in, someone might recognize him, but unless he stopped to rest he would get no further. So, hoping he would remain unrecognized, he opened the door. (adapted from Gibbons, 1991: 84).

From the example above, it can be seen that the use of conjunctions will make the text sound more fluent and structured, since this helps readers to recognize and interpret the main ideas of the text.

Third, substitution is used whenever something has been mentioned in the previous sentence, in order to avoid the repetitions of the same word. For example, the substitution of the word *bike* with *one* in the following sentences:

He was given a new bike for his birthday. His old one was too small for him.
(Gibbons, 1991: 85)

The example above indicates that by using substitution, the text can sound more coherent and logical.

Fourth, a text can be coherent by using ellipsis, in which some parts of a sentence with parallel structure are omitted, in order to avoid redundancy. For example, like those happen in the following sentences:

Some cats like cheese but some (cats) don't (like cheese).

He sat down, (he) stood up and then (he) sat down again. (Gibbons, 1991: 85)

From the example above, we can see that the words in brackets can be omitted in order to make the text more effective and avoid it to sound unnecessarily 'wordy'.

Finally, in order to avoid repetitions of using the same words in a text, a writer may apply lexical cohesion, in which different words with similar meanings (synonyms) are used. Besides that, the use of lexical cohesion may also indicate links of the sentences. For example, like those used in the following text:

They were now in a country of thick *forests* and rushing *rivers*. The giant had definitely **slowed** down and was now **running** more normally although normal was a silly word to describe a **galloping** giant. He **leapt** over a dozen *rivers*. He went **rattling** through a great *forest* then down into a *valley* and up over a *range of hills*, and soon he was **galloping** over a desolate *wasteland* that was not quite of this *earth*.
(adapted from The BFG by Roald Dahl, in Gibbons, 1991: 85-86).

The example above indicates that many of the content words in the text fall into two groups, i.e. those to do with movement (the bold ones) and those to do with physical aspects of the scene (the italic bold ones). These strings of related words can hold the sentences together.

The composing domain is evaluated by using four scale focused holistic rubrics (see Table 3.2. in Appendix I). Here, the possible highest score of 4, indicating a strong command of persuasive writing, would be assigned to compositions with following criteria: (a) the writer has identified and taken a positive position about the subject matter; (b) the writer has appropriately and effectively presented persuasive information in support of the position having been taken; (c) the organization provides a clear sense of logical progression and overall completeness; and (d) the composition is coherent. In contrast, the possible lowest score of 1, exhibiting a lack command of persuasive writing, would be devoted to compositions that have: (a) indication that the writer has read the prompt and has attempted to respond to it; (b) little or no sense of focus on the subject and little or no clear cause for the position provided; (c) no strategy or sense of control or have control with only one or two unelaborated reasons to support the position.

In addition to the scores above, the essays were also rated for the language conventions used (see Table 3.3. in Appendix I). The written composition language conventions were rated as “+” (plus) or “-“(minus), indicating whether or not the writer has demonstrated a reasonable and acceptable level of proficiency in the

domain, including sentence formation, usage, and mechanics. This means that a composition would be rated as having a “+” for convention if it has complete sentences, correct usages, and skillful use of mechanics. Sentences are considered to be complete if the “T-units and their constituents are internally related and either coordinated with or separated from each other” (North Carolina Annual Testing Commission, 1994). Examples of typical errors in sentence formation are run-on sentences (in which two complete T-units are fused together without any conjunctives and punctuated as one sentence) and sentence fragments (which do not form a complete T-unit but is punctuated as a sentence).

Regarding the usage, a composition would be considered as having a correct usage if it makes use of acceptable and effective selections of words, grammatical forms, and idioms for standard, formal, edited, written English communication. Errors in using pronouns, verbs, subject-verb agreements, and negating constructions in English composition would be rated as “-“ for the conventions. Finally, a “+” would be given to the compositions with adept use of mechanics. This involves the use of conventional representational cues and symbols (such as spelling, punctuation, and capitalization) in constructing language units. Errors in spelling, punctuation, and capitalization would also be scored as “-“.

Furthermore, the length of the final written products (such as the total paragraphs, sentences, and words written by the participants in their essays) was also counted in order to know how the use of certain strategies affect the final written

products of each participant. The scores of the written products, together with the total time spent by each participant, and the length of the final written products, compared with the strategies used by the participants in this study, were used as the data to answer the second research question.

The next issue of reliability and validity is related to the objectivity of the evaluation, whether or not the writing samples were judged objectively. As proposed by White (1994) that “[u]nreliable [i.e. inconsistent] measures are merely subjective impressions by disparate individuals” (p.36) and the evaluations of writing must “stand up to outside scrutiny” (p.30). Therefore, in scoring the participants’ essay, another rater was trained and employed, besides the researcher herself. This outside rater was an English writing teacher, who was also an expert in the field. In order to get stable scoring criteria, the items of the scoring rubrics stated before were previously discussed and agreed to be used as the scoring guide. After that, each rater evaluated each of the essays twice, in order to get intra-rater reliability. The intra-rater scorings were done within a range of two weeks, in order to ensure the consistency of the rater’s scorings. Finally, the scores produced by each rater were then compared and discussed. Any disagreements of the scores were discussed and compromised by both raters, so that final objective scores would be obtained.

3.6.2. Think aloud Protocols

There were several steps taken in the analysis of the think aloud data. First, following Perl (1978, 1984), Raimes (1985), Arndt (1987), Victori (1997, 1999), and Roca de Larios *et al.* (2008) the recorded think aloud protocols were transcribed verbatim using the standard Indonesian and English writing systems with the inclusion of false starts, hesitations, repetitions, pauses, and paralinguistic features (such as laughter, coughs, etc.). The underlined written text was then distinguished from the processes which generated it and rereading/repetitions were italicized. Finally, the revisions/editings made to the written text were marked in the protocols with double underlining (see Appendix IV).

After transcribing the think aloud protocols, the researcher set up the coding scheme through a recursive process. This process involved a number of passes through the protocols with series of tests and reviews of the data until the final categories were constructed and defined (Kasper, 1998; Smagorinsky, 1994). Once the categories had been settled, the protocol was coded and the results were put on a timeline chart (Perl, 1984) (see Appendix V). In addition, the video recordings were played while coding each of the protocols in order to know exactly what the participants were doing; whether they were writing whilst speaking or writing silently, or they were reading the text.

The categorizations of the coding scheme were based on the preliminary analysis on the think aloud transcription as well as the synthesis of theories of second/foreign language composing process and learning strategies stated in chapter two. The coding schemes used in the study were as follows:

1. **Planning strategies:** Strategies undertaken when planning and talking out the next ideas, and explicitly stating his/her objectives for content organization and writing procedures.
 - a. *Planning overall content and ideas (PLid):* retrieving ideas, relating new information, making connections among existing ideas and setting general content goals either in the form of notes or verbalization.
 - b. *Planning procedures (PL pr):* Planning subsequent actions such as procedures or strategies to be adopted (**sub**), or planning delayed actions such as postponing an action deliberately (**Post**)
 - c. *Planning organization (PLor):* grouping ideas, deciding on the overall organization of the text, deciding how to sequence ideas and how to structure the text as a whole or parts of it.
 - d. *Planning linguistic text (PLtx):* rehearsing or verbalizing several versions of the text to be produced.
2. **Monitoring strategies:** Strategies undertaken when checking and verifying progress in the composing process and when identifying oncoming problems.
 - a. *Task Monitoring (TM):* assessing how the task is progressing; how successfully the intended meaning is conveyed; tracking the use of how well a strategy is working or whether there is a need for adopting a new one.
 - b. *Self Monitoring (SM):* expressing one's feelings towards the task, becoming aware that one is having problems.
3. **Evaluating strategies:** Strategies undertaken when reconsidering the written text, previous goals, planned thoughts, and changes undertaken on the text.
 - a. *Evaluating strategies (EV):* questioning or evaluating the written text or planned thoughts.
 - b. *Reviewing strategies (REW):* reconsidering previously set goals (**g**), or reading (**R**) for the whole text (**wl**), the previous sentence (**s**) or paragraph (**p**)
 - c. *Revising strategies (REV):* making changes to the text in order to clarify meaning (such as problems with ideas, word choice, cohesion, coherence, and organization)
 - d. *Editing strategies (ED):* making changes to the text to correct the grammar (**gr**), syntax (**syntx**), word choice (**wc**) (not for clarifying meaning), spelling (**sp**), and punctuation (**punc**).

After the protocols were coded in the timeline charts, the items of the categories were counted by using a simple count, in order to know the frequency of each category occurrences. Then, based on the timelines and the occurrence frequency of each strategy, the strategies used in the writing process of each participant were analyzed and described.

Besides counting the occurrence of the strategies used, the researcher also measured the time spent by each participant in each of the writing stages in order to illustrate the findings and compare it with the length and score of the final written products, so that the conclusions to the findings could be made.

3.6.3. Post-writing questionnaire

Participants' answers to the questionnaire were coded in accordance with the coding schemes for the think aloud protocols and triangulated with the findings gained from the think aloud protocols as well as the writing products and observation in order to validate the results of the study.

3.7. Concluding Remarks

This chapter has attempted to explain the research method used in the study in terms of the characteristics of the participants, instruments, data collection place, date, and procedures, and the procedures taken in the data analysis. The next chapter, i.e. chapter four, will present the results obtained from the data analysis and the discussions of the results.