

CHAPTER 4

DATA PRESENTATION, ANALYSES AND DISCUSSION

4.1 Overview

This chapter will now analyse the data collected and present it according to the research questions. First, data and analyses from the pre-test and post-test are presented. This is followed by discussion of the data from the pre-test and post-test. Then, data and analyses from the observation are put forward, followed by discussion of the data. Finally, data and analyses from the questionnaires are presented, followed by discussion of the findings.

4.2 Research Question 1: How Can Collaborative Work in Writing be Implemented?

This study sets to find out the efficacy of collaborative work in students' writing. Observation was conducted during the post-test. The assisting teacher and I monitored the subjects and recorded our observation in observation forms. In addition, we wrote down notes on subjects' behaviour, body language and verbal exchanges during the post-test.

4.2.1 Data Presentation of Observation

Observation was conducted during the post-test as the essays for the post-test were written by the subjects. The assisting teacher and I observed the subjects while subjects were busy collaborating and writing. We moved around the class to observe all the groups. This is to make sure that the data obtained paint a true picture of what exactly happened. Then, we recorded our observation in observation forms. Besides checking the

observation forms, notes were also taken on subjects' behaviour, body language and verbal exchanges during the post-test.

Based on my observation and feedback from the assisting teacher, it can be deduced that all subjects followed the steps involved in collaborative work. Subjects discussed ideas for the essays, produced a rough draft, shared and edited essays among group members and finally redrafted the essays. All these steps were carried out based on the time frame allocated during the intervention phase; 10 minutes for discussing ideas for the essay (Step 1), 40 minutes for producing a rough draft (Step 2), 10 minutes for sharing and editing essays (Step 3) and 20 minutes for redrafting the essay (Step 4).

While discussing ideas for their essays (Step 1), subjects were seen brainstorming for ideas by requesting for and giving information and examples. A comparison in content (4.3.1.1) later revealed that subjects benefitted from the brainstorming session because 21 of the subjects had altered their content after collaborative work. When an idea generated was approved or accepted by members of the group, subjects indicated approval by nodding their heads or uttering 'OK' and '*That's a good point*'. Subjects would jot down the idea and the discussion would proceed with the subjects repeating the brainstorming session to ask for further contribution from members of the group. Very often, one of the subjects would take on the role of a leader by asking others to contribute during the brainstorming session. More importantly, however, during the brainstorming session, subjects were also seen requesting for and giving explanations on the ideas produced, thus improving some subjects' language competency (4.3.1.2).

During the brainstorming session, too, subjects indicated approval and disapproval over the ideas generated. This may explain why some subjects had no increase in their content while some appeared to have a reduction as their post-test essays indicated a decrease in the number of ideas. These subjects had merely abandoned some ideas used in

their pre-test essays in favour of ideas generated during collaborative work. For instance, subjects in Group 5 were observed discussing the idea about filtering smoke from factories, which then appeared in their post-test essays. In fact, a closer look at subject 5C's pre-test essay revealed he had cast aside some ideas in favour of this idea about filtering smoke from factories (4.3.1.1.). In another instance, members of Group 6 were seen having a discussion on the need for authorities to enforce strict environmental laws. Subject 6A, in particular, favours this idea over some of her ideas found in her pre-test essay (4.3.1.1). It is also arguable that some ideas may have been discarded when subjects had brainstormed too many ideas and therefore collaborated to stick to certain ideas approved by all. This is another example of how collaborative work may have influenced subjects' writing.

While producing a rough draft (Step 2), subjects were seen requesting for and giving assistance, especially in terms of language and content. For example, a member in Group 5 requested for the English equivalent of the word '*menapis*'. Another member replied '*filter*'. In addition, subjects were also seen seeking clarification for some of the ideas produced during Step 1 by asking questions such as '*How to elaborate?*' and '*How to explain?*' By providing answers to these questions, subjects indirectly checked understanding of each other. There was no observation of subjects belittling their friends' problems. Requesting for and providing assistance while producing a rough draft might have generated some positive results as some subjects' language competency improved (4.3.1.2) and subjects displayed either minor or noticeable changes / addition to vocabulary (4.3.1.3).

After producing a rough draft, subjects then proceeded to sharing and editing their essays (Step 3). This was a productive stage as subjects were actively involved in providing constructive feedback to each other. During this stage, subjects were seen

providing suggestions on meaning, spelling, punctuation, and paragraphing. Like Step 1, interaction among subject was evident. While editing their peer's work, subjects were seen asking questions such as '*What do you mean by this?*', '*Are you sure?*' and '*What are you trying to say?*' as they attempted to refine ambiguous ideas. Subjects also made remarks such as '*You should use this instead*' and '*I don't think this is correct*' as they provided suggestions on meaning. For instance, members of Group 1 were seen discussing what exactly the 3Rs stood for. A member suggested that the 3Rs stood for '*renew, reduce, reuse*'. However, other members did not agree that one of the Rs stood for '*renew*'. Finally, one member rectified the word '*renew*' to '*recycle*'. Observation of the interaction that occurred in Group 1 was further corroborated by analyses of Group 1's changes / addition made to vocabulary (4.3.1.3).

While observing this stage of collaborative work, the cooperating teacher noticed an incident which did not conform to the steps involved in collaborative work – pair work. Two subjects in Group 6 were spotted working in pairs during this stage. Analyses of Group 6's content and vocabulary later revealed that the two subjects had an additional content and a phrase which the other members did not have. Sharing and editing essays appeared to have generated some positive outcomes in subjects' language competency (4.3.1.2), changes / addition to vocabulary (4.3.1.3) and paragraphing (4.3.1.4). However, there were mixed results in the spelling category (4.2.1.4).

Finally, subjects spent the remaining 20 minutes redrafting their essays (Step 4). During this stage, subjects were busy rewriting their essays after having completed Steps 1, 2 and 3 of collaborative work. In addition, subjects indicated approval or disapproval over the suggestions generated from Step 3 by making remarks such as '*I'll use this one*', '*That's a good point*', '*I don't think I want to use this*' and '*Are you sure?*'.

Throughout the post-test, the leaders of each group kept the group on task. The leaders initiated the discussion in Step 1. Leaders of each group initiated the discussion by reading aloud the rubric for the essay and asking other members for ways to reduce air pollution. Members of Groups 2, 5 and 6 responded to their respective leaders by providing some ideas. However, leaders of Groups 1, 3 and 4, when they felt their members took too long to respond, provided an idea or two to set the ball rolling. Once the leaders gave their input, other members began suggesting ideas for the essay. The leaders also acknowledged members' contribution by saying 'That's good', 'OK' and 'Good idea'. From time to time, the leaders also reminded the members of the time frame for each step. While producing a rough draft in Step 2, the leaders provided assistance to members who requested it and checked their understanding. When subjects shared and edited their essays in Step 3, the leaders acted as moderators when differences in opinions arose. In the end, all subjects handed in their essays at the end of the double period allocated.

4.2.2 Data Analyses and Discussion

Based on the observation analyses, all subjects followed the steps involved in collaborative work. They did so according to the time frame used during the intervention phase; 10 minutes for discussing ideas for the essay (Step 1), 40 minutes for producing a rough draft (Step 2), 10 minutes for sharing and editing essays (Step 3) and 20 minutes for redrafting the essay (Step 4).

The following behaviours were observed during Step 1 of collaborative work in writing; subjects brainstormed for ideas by requesting for and giving information and indicated approval and disapproval over the ideas generated. Step 1 was carried out successfully and analyses of content revealed that 21 subjects had made changes to their content after collaborative work [as shown in Table 4.3.1.1(b)]; some subjects had

increased the number of ideas in their essays, while some had merely discarded some ideas used in their pre-test essays in favour of ideas generated during collaborative work. This is in line with Bruffee (1993:57-58), who noted that peer interaction is a necessary component for successful writing because “students can write effectively only to people they have been and continue to be, directly or indirectly, in conversation with”.

Similarly, while producing a rough draft in Step 2, subjects requested for and gave assistance, especially in terms of language and content. Requesting for and providing assistance during this stage most likely resulted in some positive outcomes as 10 subjects out of 24 subjects appeared to have improved in their language competency (as shown in Table 4.3.1.2). These 10 subjects seemed to benefit from being grouped with more competent peers and thus they capitalised on their zones of proximal development. However, another 13 subjects did not appear to exhibit further improvement and remained the same (as shown in Table 4.3.1.2) most probably because they did not have peers who were at a level above them to work with. In addition, one subject did not show improvement as she scored ‘weak’ for both pre-test and post-test despite being grouped with more capable peers, suggesting that it is worth looking into grouping subjects with peers whom they are comfortable collaborating with.

Once they have completed their rough drafts, subjects shared and edited their essays in Step 3. During this step, subjects were observed providing suggestions on meaning, spelling, punctuation and paragraphing. The best example is the discussion observed in Group 1 over the 3Rs; ‘*renew, reduce, reuse*’. Some members did not agree that one the Rs stood for ‘*renew*’. Then, one of them suggested ‘*recycle*’ and everyone agreed to it. Observation of Group 1’s interaction was corroborated by analyses of Group 1’s changes / addition made to vocabulary (as discussed in 4.3.1.3). Although subjects shared and edited their essays, analyses revealed there were no obvious discrepancies in

punctuation [all 24 subjects, as shown in Table 4.3.1.4(a)] and paragraphing [21 subjects, as shown in Table 4.3.1.4(b)]. Two subjects who committed errors in paragraphing during pre-test did improve in their post-test but they still committed an error each; one of them did not have a conclusion while the other combined the introduction and the first idea into one paragraph. Finally, one subject did not have a paragraph for conclusion in both her pre-test and post-test essays and she also crammed all her five ideas into three paragraphs in her post-test essays. It is likely that the errors committed by these three subjects, together with the lack of differences in the punctuation analyses, may have been overlooked possibly because students had only 10 minutes to carry out Step 3 and they probably spent the time editing other parts of the essays. Group members who checked their essays might have seen that they used paragraphs in their post-test essays and probably just assumed that they were all right without looking at the essays in detail.

Similarly, despite observing subjects sharing and editing their essays, analyses of spelling revealed that only three subjects showed improvement, fourteen subjects remained the same while seven subjects appeared to have digressed [as shown in Table 4.3.1.4(c)]. One possible reason is that students are certain to make spelling errors and group members are not teachers who could provide better guidance. Moreover, subjects who were more capable made spelling errors possibly because they had no peers who were slightly above their zones of proximal development to provide corrective feedback. During Step 3 of collaborative work as well, two subjects in Group 6 were spotted working in pairs. This is probably because the two subjects were comfortable working with each other. This anomaly once again highlights the need to group subjects who are comfortable collaborating together, in addition to grouping subjects who have poor or average command of the language with others who are at a level just above their level of competence.

During the post-test, group leaders ensured that members carry out the steps involved in collaborative work in writing. Leaders were seen initiating discussions, prompting others to contribute, providing assistance when required and reminding others of the time. After having completed Step 3, subjects proceeded to rewrite their essays in Step 4. Finally, subjects handed in their essays for assessment.

4.2.3 Summary of Observation Analyses and Discussion

Observation was carried out when subjects were producing essays for the post-test. The assisting teacher and I recorded our observation in observation forms. Notes were also written down on subjects' behaviour, body language and verbal exchanges during the post-test. On the whole, all subjects followed the steps involved in collaborative work. Subjects discussed ideas for the essays, produced a rough draft, shared and edited essays among group members and lastly redrafted the essays. Subjects implemented the steps according to the time frame allocated during the intervention phase. Group leaders also kept the group on task. However, two subjects were seen working in pairs during the sharing and editing of essays. Despite the anomaly, it was encouraging to observe all subjects collaborating and interacting while the steps were carried out because they most likely yielded positive results in areas such as content, language, vocabulary, and to some extent, mechanics.

4.3 Research Question 2: To What Extent can Collaborative Work Benefit Students' Writing, in terms of Content, Vocabulary, Language and Mechanics?

This study seeks to find out whether students' writing improves substantially by means of collaborative work. First, a pre-test was carried out in which subjects were required to compose an essay individually. Their essays constituted as the first baseline.

Next, the pre-test was followed by six intervention sessions in which subjects were familiarised with the steps involved in collaborative work. Finally, a second baseline was obtained in the post-test, in which subjects were required to produce an essay using the steps in collaborative work. A comparison was then made between the first and second baselines according to the marking criteria designed by the Malaysian Examinations Syndicate which include content, vocabulary, language and mechanics.

4.3.1 Data Presentation of Pre-Test and Post-Test

Subjects were instructed to write an essay on how to reduce air pollution in conjunction with Earth Day. The task given was “The city you live in is facing serious environmental problems as a result of air pollution. You have been asked to write an essay on how to reduce air pollution in your city in conjunction with Earth Day”. On the whole, subjects conformed to the topic. The introduction paragraph in subjects’ essays mostly outlined the causes of air pollution and its effect on people’s health. The remaining paragraphs dealt with ways on how to reduce air pollution. The conclusion paragraph mostly highlighted the need for everyone to work together to reduce air pollution.

The essays were graded based on the marking criteria designed by the Malaysian Examinations Syndicate which include content, language, vocabulary and mechanics. The analyses are thus presented in these four categories. Subjects would be addressed as 1A, 1B, 1C, 1D, 2A, 2B and so on.

4.3.1.1 Content

Results from the comparison in content as represented in Table 4.3.1.1(a) showed that 11 out of a total of 24 subjects (1A, 1B, 1C, 1D, 2D, 3C, 4A, 4B, 4C, 4D, 5A) had raised the number of ideas in their essays after collaborative work.

Table 4.3.1.1(a): A comparison in content between pre-test and post-test essays

SUBJECTS	CONTENT (Number of ideas generated during collaboration)	
	PRE-TEST	POST-TEST
1A	3	4
1B	3	4
1C	4	5
1D	3	4
2A	3	3
2B	3	3
2C	3	3
2D	2	3
3A	4	4
3B	4	4
3C	2	5
3D	3	3
4A	3	4
4B	2	3
4C	4	5
4D	2	4
5A	3	4
5B	4	4
5C	5	4
5D	5	5
6A	5	4
6B	4	4
6C	6	4
6D	4	4

All the subjects in Group 4 appeared to have increased the number of their ideas after collaborative work (It must be mentioned that an increase in the number of ideas does not necessarily mean better quality, and that I am not looking at the development of the quality of ideas). However, 3 subjects (5C, 6A, 6C) appeared to show a decrease in the number of ideas in their post-test essays. Meanwhile, 10 subjects (2A, 2B, 2C, 3A, 3B, 3D, 5B, 5D, 6B, 6D) gave the impression that collaborative work had not any effect on their essays as the number of ideas for both pre-test and post-test essays remained the same.

However, appearances can be deceiving. A closer scrutiny of the 3 subjects' (5C, 6A, 6C) post-test essays which appeared to have fewer number of ideas than their pre-test essays revealed a different picture. For example, subject 5C's pre-test essay contained ideas such as *'have more trees along the high-way, along the road and all surrounding us'* to reduce air pollution and *'the goverment should have a kempen to stop the smoker before they become addition'*. Interestingly, in the post-test, subject 5C appeared to have abandoned these ideas in favour of another idea. The subject wrote about reducing air pollution by filtering harmful smoke from factories; *'To reduce the air from become worst, we can filter the smoke before free them'*. Significantly, this idea about filtering smoke from factories was present in all the Group 5 subjects' post-essays, suggesting that the collaborative work done during the brainstorming session may have included this particular idea. This is verified through observation as discussed in 4.2.1.

Similarly, subject 6A's pre-test essay talked about the use of CFC which causes air pollution and the thinning of the ozone layer; *'Secondly, CLC gases also causes by air pollution. Its can thin the atmosphere'* and organising an awareness campaign to educate the public; *'We also can held a campaign. We can tell all the people how to reduce air pollution and important to reduce it'*. These two aforementioned points were not present in subject 6A's post-test essay. They were abandoned in favour of a new point most likely brought up during the collaborative work (this is corroborated by observation as discussed in 4.2.1) as it was present in all Group 6 essays, that is implementing strict environmental laws; *'Lastly, obeyed the rules. Everybody who was not follow the rules, we must punishment such RM500 or go to jail'*. Here is yet another piece of evidence that collaborative work had affected subjects' content.

In a similar fashion, subject 6C did not mention ideas about setting up forest reserves and recycling to reduce air pollution (present in her pre-test essay) in her post-test

essay. Instead, she only elaborated on points discussed during collaborative work. These 4 points were present in other members of Group 6's essays; decrease the number of vehicles through car pooling, ban open burning, use public transport and enforce strict laws. Nevertheless, it is interesting to note that subject 6C chose to combine '*decrease the number of vehicles*' and '*use public transport*' into a single idea. Then she included the idea of quitting smoking to reduce air pollution. Subject 6D too included the idea of quitting smoking. The idea of quitting smoking to reduce air pollution was not present in subjects 6A and 6B's post-test essays. This anomaly suggests that subjects in Group 6 had most likely worked in pairs at some point during collaborative work. This is substantiated by findings from the observation in which the cooperating teacher noted that the two members of Group 6 worked in pairs in between collaborative work.

All these results revealed that these 3 subjects (5C, 6A, 6C) seemed to benefit from collaborative work. Subjects 5C and 6A had merely abandoned ideas (in their pre-test essays) which they probably felt insignificant in favour of ideas discussed during collaborative work (as evident in their post-test essays). Subject 6C too appeared to have benefitted from collaborative work in the form of pair work. This was evident as subjects 6C and 6D shared a similar idea in their post-test essays not found in subjects 6A and 6B.

Although 10 subjects had maintained the same number of ideas in their pre-test and post-test essays, a closer look of their essays revealed that some of them had discarded ideas in their pre-test essays in favour of ideas discussed during collaborative work. This was evident in the following subjects; 2B, 3A, 3B, 3D, 5B, 5D and 6D.

For instance, subject 2B did not mention the idea of filtering smoke from factories in her post-test essay. In her post-test essay, subject 2B talked about the need of an awareness campaign to reduce air pollution. Subject 3A did not mention the need to regulate emission of smoke from factories in her post-test essay. Instead, subject 3A wrote

about preventing open burning to reduce air pollution; a point shared by all members of Group 3 and which most probably cropped up during collaborative work. Similarly, subject 3B did not include the idea of filtering smoke from factories in her post-test essay. Subject 3B instead talked about smoke from cigarettes causing air pollution and the role of the government to inform the public of the hazards of smoking through campaigns. Subject 3D wrote on the need to reduce the use of equipment that contained chlorofluorocarbon (CFC) gas to reduce air pollution in her post-test essay. This idea was not present in her pre-test essay. Subject 5B abandoned the idea of smoking as causing pollution in her pre-test essay in favour of the idea of filtering smoke from factories when producing her post-test essay. The idea of filtering smoke from factories was also present in other members of Group 5's essays, suggesting that the idea may have emerged during collaborative work. Subject 5D extolled the benefits of utilising transportation using solar energy in her pre-test essay but the idea was not used in her post-test essay. Instead, she used the idea of the role of the government to hold campaigns; the very same idea used by all members of Group 5. Subject 6D highlighted in her pre-test essay that factories emitting excessive smoke must be punished. That point was not mentioned in her post-test essay. Subject 6D instead used the idea of quitting smoking to reduce air pollution. As mentioned earlier, this idea was only present in Subject 6C's post-test essay, suggesting that they had most likely worked in pairs.

In conclusion, a closer scrutiny of these subjects' essays showed that collaborative work had most likely influenced the content of their essays. It might not necessarily lead to an increase of ideas but subjects did change their content nevertheless as a result of collaborative work. Therefore, Table 4.3.1.1(b) shows that 21 out of a total of 24 subjects (1A, 1B, 1C, 1D, 2B, 2D, 3A, 3B, 3C, 3D, 4A, 4B, 4C, 4D, 5A, 5B, 5C, 5D, 6A, 6C, 6D) made some changes to their content after collaborative work.

Table 4.3.1.1(b): Comparison of changes in content

	Changes in content	No change in content
Number of subjects	21 (1A, 1B, 1C, 1D, 2B, 2D, 3A, 3B, 3C, 3D, 4A, 4B, 4C, 4D, 5A, 5B, 5C, 5D, 6A, 6C, 6D)	3 (2A, 2C, 6B)

4.3.1.2 Language

Language comprises a number of components such as tenses, subject-verb agreement, articles, pronouns and prepositions. As language encompasses a broad aspect, a holistic assessment was necessary based on the band descriptors in the marking criteria designed by the Malaysian Examinations Syndicate. The results are presented in Table 4.3.1.2.

Table 4.3.1.2: Comparison of subjects' language proficiency

SUBJECTS	LANGUAGE	
	PRE-TEST	POST-TEST
1A	Achievement	Credit
1B	Achievement	Credit
1C	Credit	Credit
1D	Achievement (low)	Achievement (high)
2A	Weak (low)	Weak (high)
2B	Achievement	Achievement
2C	Achievement	Achievement
2D	Achievement	Achievement
3A	Achievement	Achievement
3B	Achievement	Achievement
3C	Weak	Weak
3D	Achievement	Achievement
4A	Excellent	Excellent
4B	Very weak	Weak
4C	Achievement (low)	Achievement (high)
4D	Very weak	Weak
5A	Weak	Achievement
5B	Achievement	Achievement
5C	Achievement	Achievement
5D	Weak (low)	Weak (high)
6A	Achievement	Achievement
6B	Achievement	Achievement
6C	Weak	Achievement
6D	Achievement	Achievement

Legend:	
Excellent	– Language is accurate with few minor errors and first draft slips
Credit	– Language is largely accurate with some serious and minor errors
Achievement	– Language is sufficiently accurate with frequent serious errors
Weak	– Language is barely accurate with frequent serious errors that hamper reading
Very Weak	– High density of errors; meaning is hardly conveyed

Table 4.3.1.2, continued

On the whole, it can be inferred that subjects who have poor or average command of the language appeared to show some improvements when they are grouped with others who are at a level just beyond the aforementioned subjects' level of competence (Please refer to Appendices N, O and P for examples of pre- and post-test performances). This is best exemplified by the achievements of subjects 4B and 4D (Appendix P) who moved up a notch from 'very weak' to 'weak'. Subjects 4A and 4C were most likely the catalysts for subjects 4B and 4D's improved command of the language. Similarly, subjects 1A (Appendix N), 1B, 5A and 6C too seemed to have benefitted from having collaborated with slightly more capable peers in their respective groups. Subjects who appeared not to have shown marked improvement such as subjects 1D, 2A, 4C and 5D actually did improve nevertheless. Subjects 1D and 4C who scored 'low achievement' in their pre-test essays had 'high achievement' for their post-test essays. Similarly, subjects 2A (Appendix O) and 5D notched up 'high weak' in their post-test essays compared to 'low weak' in their pre-test essays. While these ten subjects seemed to show improvements in language, fourteen others (1C, 2B, 2C, 2D, 3A, 3B, 3C, 3D, 4A, 5B, 5C, 6A, 6B, 6D) did not. Thirteen of them, who had a good command of the language, did not exhibit further improvement. Meanwhile, subject 3C did not exhibit improvement (she scored 'weak' for both pre-test and post-test), even though she was grouped with peers who were above her level of competence.

4.3.1.3 Vocabulary

Table 4.3.1.3: Comparison of vocabulary among subjects

Subjects	Minor changes/addition after collaboration	Noticeable changes / addition after collaboration
Group 1	0	4 (1A, 1B, 1C, 1D)
Group 2	4 (2A, 2B, 2C, 2D)	0
Group 3	3 (3A, 3B, 3D)	1 (3C)
Group 4	0	4 (4A, 4B, 4C, 4D)
Group 5	3 (5B, 5C, 5D)	1 (5A)
Group 6	4 (6A, 6B, 6C, 6D)	0

An analysis of Group 1's pre-test and post-test essays found that all subjects had noticeably changed/added vocabulary. For example, all members of Group 1 included words and phrases that were not present in their pre-test essays such as '*green house effects*', '*the thickness of ozone layer*', '*lung cancer*', '*recycle*', '*reduce*', '*reuse*' and '*prevention is better than cure*'. It is interesting to note that the phrase '*lung cancer*' appeared in subject 1C's pre-test essay. The fact that this phrase re-emerged in all the members' post-test essays indicates that it most probably turned up during collaborative work. Similarly, the words '*renew*', '*reduce*' and '*reuse*' were present in subject 1C's pre-test essay. It is possible that subject 1C introduced those 3Rs to other members during collaborative work and one of them might have corrected her that '*renew*' was supposed to be '*recycle*'. The 3Rs; '*recycle*', '*reduce*' and '*reuse*' were subsequently used by all members of Group 1 after collaborative work.

An analysis of Group 2's pre-test and post-test essays revealed that all members had minor changes/addition to their vocabulary. For instance, subjects agreed that people should '*share transport*' in order to reduce air pollution. This phrase was found only in 2B's pre-test essay, suggesting that she had most probably introduced it to the other members. Similarly, subject 2C might have introduced the phrase '*the temperature of Earth increases*' (found only in her pre-test essay) to other members during collaborative

work. Variations of that phrase appeared in other subjects' post-test essays; *'increase temperature of earth'* (2A and 2D) and *'our temperature is increase'* (2B). Another minor addition is the inclusion of the phrase *'ozone layer'* which did not appear in subjects' pre-test essays. This phrase most likely came about during collaborative work.

A comparison of Group 3's pre-test and post-test essays found that only subject 3C had noticeable changes/addition to vocabulary. This may be correlated to the increase in the number of ideas in the subject's post-test essay. For instance, the phrase *'the content in the spray'* which was used in the pre-test essay was replaced by *'less the using gas of CFC like refrigerator, air-cond and aerosol'* in the post-test essay. The subject also used words and phrases like *'share a transport'*, *'prevent open burning'*, *'responsible'* and *'government...need to more serious'*.

As for the other 3 members, there were minor changes/addition to vocabulary. For example, subject 3A had the tendency to use the word *'release'* in sentences which did not require that word; *'we must release vehicles at the road'*, *'we must release air pollution with release vehicles'*, *'So factory at our country must be release'*. The word *'release'* was no longer present in the subject's post-test essay as exemplified by phrases like *'share vehicle'* (instead of *'release vehicles'*) and *'air pollution can reduce'* (instead of *'release air pollution'*). In addition, subject 3A also used the phrase *'prevent open burning to reduce air pollution'*. This phrase correlates with the changes of ideas made by subject 3A as discussed in the content analyses (4.3.1.1). Likewise, subject 3B abandoned the idea of filtering smoke from factories in her pre-test essay in favour of cigarette smoke causing air pollution and the role of the government in holding anti-smoking campaigns. Hence, subject 3B's post-test essay contained phrases like *'smoke from cigarette'* and *'government can make a campaign'*. Subject 3D had minor changes/addition to vocabulary. For instance, subject 3D wrote about sharing transport with one's *'sibling'* and *'friends'* (in her

pre-test essay, she wrote about sharing transport with *'freinds'*, *'neighbour'* and *'parents'*). Subject 3D also included words like *'CFC'*, *'air-cond'*, *'refrigarator'* and *'aerosol'*.

In general, all subjects in Group 4 had noticeable changes/addition to vocabulary. For instance, subject 4A mentioned the need to *'start a campaign'* to *'make the peoples to realize and understand'* the importance of a clean environment and that *'parents and teachers are also responsible to teach young generation'* to appreciate nature. Subject 4B used words and phrases like *'share the car'*, *'use public transportation like buses, taxi, LRT'*, *'thinner ozone layer'*, *'bury the rubbish so that it becomes fertilizer to plant'*, *'fine'*, *'heavy punishment'*, *'establish the campaign'* and *'parents and teacher teach the children'* on how to reduce air pollution. Subject 4C used words and phrases such as *'car pool'* (in her pre-test essay, she used *'share their vehicle'*), *'public transportation'*, *'campaign can teach and give some information'* and the role of parents and teachers to *'teach children to take care and love environment'*. Subject 4D too appeared to have benefited from collaborative work as the following words and phrases (which did not emerge in her pre-test essay) were used in her post-test essay; *'asthma'*, *'haze'*, *'acid rain'*, *'car-pool'*, *'open burning'*, *'reducing'*, and *'establish a campain in conjunction with Earth Day'*. These noticeable changes/addition to vocabulary appear to correspond with the increase of ideas in the subjects' post-test essays.

An analysis of Group 5's pre-test and post-test essays found that only subject 5A had noticeably changed/added vocabulary. These noticeable changes/addition are most likely due to the surplus in ideas in the subject's post-test essay. Hence, subject 5A had new words and phrases not found in her pre-test essay; *'irresponsible human activities'*, *'summon'*, *'penalty'*, *'campaign'*, *'advertise'*, *'smog'*, *'factory'* and *'filter'*. Subjects 5B and 5C included new words like *'factory'* and *'filter'* while subject 5D used the phrase *'share transport'*. These minor changes/addition were most likely due to collaborative

work. For instance, subject 5D had most likely introduced the words *'factory'* and *'filter'* to other subjects because these two words appeared in the subject's pre-test essay while the rest did not use those words in their pre-test essays. Conversely, subject 5D had most probably picked up the phrase *'share transport'* from the other subjects as they had used that phrase in their pre-test essays.

Generally, all subjects in Group 6 had minor changes/addition to vocabulary. It is interesting to note that subject 6B had most likely introduced the word *'facilities'* and together with 6D, might have introduced the phrase *'obeyed the rules'* to other subjects whose pre-test essays did not contain these words. Besides that, subject 6D might have picked up the phrase *'quit smoking'* from subject 6C (subject 6C had used that phrase in her pre-test essay). The absence of this phrase in subjects 6A and 6B's post-test essays further reinforced the observation of subjects 6C and 6D who had worked in pairs at some point during collaborative work.

4.3.1.4 Mechanics

The mechanics of writing encompass punctuation, paragraphing and spelling. Overall, subjects demonstrated accurate use of punctuation. Subjects too displayed accurate use of paragraphing with the exception of subjects 4B, 5D and 6C. However, the same could not be said of some of the subjects' use of spelling.

All subjects displayed accurate use of punctuation in both their pre and post-tests. This may be attributed to subjects' good command of punctuation. Furthermore, due to the nature of the subject matter of the writing task, subjects used full stops and commas most of the time. The accurate use of punctuation suggested that subjects were most likely well aware that a full stop is used at the end of a sentence and that a comma is used to show a break between parts of a sentence.

Table 4.3.1.4(a): Comparison of subjects' use of paragraphing

SUBJECTS	MECHANICS (PARAGRAPHING)	
	PRE-TEST	POST-TEST
1A	Accurate use of paragraphing	Accurate use of paragraphing
1B	Accurate use of paragraphing	Accurate use of paragraphing
1C	Accurate use of paragraphing	Accurate use of paragraphing
1D	Accurate use of paragraphing	Accurate use of paragraphing
2A	Accurate use of paragraphing	Accurate use of paragraphing
2B	Accurate use of paragraphing	Accurate use of paragraphing
2C	Accurate use of paragraphing	Accurate use of paragraphing
2D	Accurate use of paragraphing	Accurate use of paragraphing
3A	Accurate use of paragraphing	Accurate use of paragraphing
3B	Accurate use of paragraphing	Accurate use of paragraphing
3C	Accurate use of paragraphing	Accurate use of paragraphing
3D	Accurate use of paragraphing	Accurate use of paragraphing
4A	Accurate use of paragraphing	Accurate use of paragraphing
4B	Some errors in paragraphing	Almost always accurate use of paragraphing
4C	Accurate use of paragraphing	Accurate use of paragraphing
4D	Accurate use of paragraphing	Accurate use of paragraphing
5A	Accurate use of paragraphing	Accurate use of paragraphing
5B	Accurate use of paragraphing	Accurate use of paragraphing
5C	Accurate use of paragraphing	Accurate use of paragraphing
5D	Almost always accurate use of paragraphing	Some errors in paragraphing
6A	Accurate use of paragraphing	Accurate use of paragraphing
6B	Accurate use of paragraphing	Accurate use of paragraphing
6C	Serious errors in paragraphing	Almost always accurate use of paragraphing
6D	Accurate use of paragraphing	Accurate use of paragraphing

In terms of paragraphing [Table 4.3.1.4(a)], subjects 4B and 6C appeared to have benefitted from collaborative work. Both had errors in paragraphing in their pre-test essays. For instance, subject 4B used three paragraphs in her pre-test essay; one for introduction, one for content (in which she explained her two ideas on how to reduce air pollution) and one for conclusion. Subject 4B most likely may have realised her error of not using one paragraph for each idea during collaborative work and made the changes accordingly. Hence, in her post-test essay, subject 4B used four paragraphs; one for introduction and three for content (one for each of her three ideas). However, subject 4B did not complete her essay with a conclusion. Subject 6C had serious errors in

paragraphing in that she crammed everything; introduction, content and conclusion, into one paragraph. Like subject 4B, subject 6C too appeared to have made changes in her post-test essay after collaborative work. There was vast improvement (one paragraph for each idea and another paragraph for conclusion) but she still made an error of combining the introduction and the first idea into one paragraph. While subjects 4B and 6C seemed to have improved, subject 5D apparently did not. Subject 5D did not have a paragraph for conclusion in both her pre-test and post-test essays. In addition, subject 5D crammed all her five ideas into three paragraphs in her post-test essay, an error which she did not commit in her pre-test essay.

Table 4.3.1.4(b): Comparison of subjects' use of spelling

SUBJECTS	MECHANICS (SPELLING)	
	PRE-TEST	POST-TEST
1A	Almost always accurate use of spelling	Almost always accurate use of spelling
1B	Accurate use of spelling	Almost always accurate use of spelling
1C	Almost always accurate use of spelling	Almost always accurate use of spelling
1D	Almost always accurate use of spelling	Some errors in spelling
2A	Almost always accurate use of spelling	Almost always accurate use of spelling
2B	Almost always accurate use of spelling	Some errors in spelling
2C	Almost always accurate use of spelling	Almost always accurate use of spelling
2D	Almost always accurate use of spelling	Accurate use of spelling
3A	Some errors in spelling	Some errors in spelling
3B	Some errors in spelling	Almost always accurate use of spelling
3C	Almost always accurate use of spelling	Some errors in spelling
3D	Some errors in spelling	Some errors in spelling
4A	Accurate use of spelling	Almost always accurate use of spelling
4B	Some errors in spelling	Some errors in spelling
4C	Almost always accurate use of spelling	Almost always accurate use of spelling
4D	Accurate use of spelling	Almost always accurate use of spelling
5A	Almost always accurate use of spelling	Almost always accurate use of spelling
5B	Almost always accurate use of spelling	Almost always accurate use of spelling
5C	Some errors in spelling	Some errors in spelling
5D	Accurate use of spelling	Almost always accurate use of spelling
6A	Almost always accurate use of spelling	Almost always accurate use of spelling
6B	Accurate use of spelling	Accurate use of spelling
6C	Some errors in spelling	Some errors in spelling
6D	Almost always accurate use of spelling	Accurate use of spelling

An analysis of subjects' use of spelling appeared to show that 3 subjects (2D, 3B, 6D) had shown marked improvements, 7 subjects (1B, 1D, 2B, 3C, 4A, 4D, 5D) went down a notch each while 14 subjects (1A, 1C, 2A, 2C, 3A, 3D, 4B, 4C, 5A, 5B, 5C, 6A, 6B, 6C) remained the same [Table 4.3.1.4(b)].

The improvement shown by the 3 subjects varied. For instance, subject 2D misspelled the word '*anywhere*' as '*anywere*' in her pre-test essay but there were no spelling errors in her post-test essay. Subject 3B had three spelling errors in her pre-test essay; '*happend*', '*goverment*', and '*champaign*'. In her post-test essay, '*happend*' was no longer present while '*goverment*', and '*champaign*' were spelled correctly as '*government*' and '*campaign*'. Finally, subject 6D spelled the word '*government*' correctly in her post-test essay. In her pre-test essay, she too had misspelled the word as '*goverment*'.

The drop displayed by the 7 subjects (1B, 1D, 2B, 3C, 4A, 4D, 5D) was different among each other too. Initially, subjects 1B, 4A, 4D and 5D did not commit spelling errors in their pre-test essays. However, the same could not be said of their post-test essays. For example, subject 1B erred in spelling '*government*' as '*goverment*'. Subject 4A too erred in spelling '*government*' as '*goverment*' and '*conjunction*' as '*conjunction*'. Subject 4D misspelled '*campaign*' as '*campain*' and subject 5D committed the following errors; '*decress*' (decrease) and '*goverment*'. As for subjects 1D, 2B and 3C, they committed more spelling errors in their post-test essays than in their pre-test essays. For instance, subject 1D misspelled '*asthma*' as '*athsma*' in her pre-test essay. Subject 1D did correct that spelling mistake in her post-test essay, but at the same time, she also made the following errors; '*goverment*', '*transparts*' and '*desease*'. In subject 2B's pre-test essay, she misspelled '*government*' as '*goverment*'. In her post-test essay however, she no longer used the word '*government*' and made the following spelling mistakes; '*resposible*', '*enviroment*', '*transportition*' and '*exhibiton*'. Subject 3C misspelled the word

'government' as 'goverment' in both her pre-test and post-test essays, and made the following mistakes; 'transpont' (transport) and 'contry' (country).

The lack of improvement displayed by the 7 subjects and the 14 subjects who remained the same may be due to the grouping of subjects. Grouping subjects who have poor or average command of the language with others who are at a level just beyond the aforementioned subjects' level of competence may have a double-edged sword effect. While subjects who have poor or average command of the language might benefit in terms of content, language, vocabulary or mechanics (as discussed in previous sections) from such groupings, subjects who are more capable might suffer in these areas because they have no peers who are slightly above their zone of proximal development to provide constructive and corrective feedback. In addition, the time frame given to editing and redrafting may have a bearing on the results, too. The ten-minute allocation to the editing of essays might not have been enough for students to look into their peers' essays in detail, particularly in spelling. Similarly, the twenty minutes assigned to the redrafting of essays meant that students had to rewrite from the edited draft quickly, and possibly causing students to make spelling slip ups.

4.3.2 Data Analyses and Discussion

The results seem to show that collaborative work, if implemented successfully over a period of time, can effectively help improve students' writing. This is exemplified particularly in the presentation of data on content in which 21 subjects made changes to their content after their collaborative work. 11 out of the 21 subjects had increased the number of ideas in their essays after collaborative work⁹. Although the remaining 10

⁹ An increase in the number of ideas does not mean an increase in quality of the essay. However, overall the arguments put forward by subjects improved in the post-test.

subjects had retained the same number of ideas in their pre-test and post-test essays, a closer scrutiny of their essays showed that they had abandoned some ideas used in their pre-test essays in favour of ideas discussed during collaborative work. Collaborative work appeared to have given these subjects a different perspective to the same essay topic as seen from the eyes of their peers and they seemed to have capitalised on the ideas generated during discussion by incorporating them into their essays.

However, when subjects did not exhibit a change in content [as shown in Table 4.3.1.1(b)], this does not necessarily mean that collaborative work has failed. This could mean that the subjects already have enough content points which are strong and relevant. Therefore, instead of altering their content points, they could serve as the anchor of their group, aiding weaker group members with content points for their writing task. This hypothesis could be justified by subjects 2C and 6B, who according to the data obtained, have a stronger command of the language (as shown in Table 4.3.1.2). On the other hand, we cannot nullify the effectiveness of collaborative work in helping to improve students' writing if subjects do not exhibit a change in content because some weaker students might require a longer period of time to improve their writings or that they may improve in other areas such as language, vocabulary or mechanics. Subject 2A, in particular, did not exhibit a change in content. However, she appeared to improve in terms of language (as shown in Table 4.3.1.2) and had minor changes to her vocabulary (as shown in Table 4.3.1.3). This shows that students could improve at their own pace eventually if given ample opportunities to benefit from their peers via collaborative work.

While collaborative work appeared to have helped improve students' writing in terms of content, analyses of language yielded mixed results. On the whole, subjects who have poor or average command of the language seemed to show some improvements when they are grouped with others who are at a level just beyond their level of competence. 10

subjects (as shown in Table 4.3.1.2) seemed to benefit from such grouping. The results lend credence to the view upheld by Vygotsky and Feuerstein that the key to efficacious learning lies in the collaboration among peers with different levels of competence (Williams & Burden, 1997). By grouping subjects with more competent peers, subjects most likely capitalised on their zone of proximal development. Nevertheless, such grouping appeared not to have benefitted all subjects. Most groups consisted of two or three subjects with the same level of competence. These subjects (13 of them), though their command of the language are good, did not exhibit further improvement (as shown in Table 4.3.1.2). This is probably because they did not have peers who were at a level beyond them to collaborate with. Thus, their zones of proximal development were not fully capitalised on. Nevertheless, these students did not perform worse than their peers, a result which is similar to Johnson et. al's (1984:74-75) conclusion from their studies that high-achievers "have never done worse than their counterparts". However, the anomaly exhibited by subject 3C, assessed 'weak' in language in both her pre-test and post-test suggests that grouping subjects who have poor or average command of the language with subjects who are at a level just above their level of competence may not be enough. It is most likely essential to group with peers whom they are comfortable collaborating with because "students want and need work that will enhance their relationships with people they care about" (Strong, Silver & Robinson, 1995:12). That may explain why subject 3C did not improve in her language (as shown in Table 4.3.1.2) and spelling [as shown in Table 4.3.1.4(b)] even though she was grouped with subjects just above her zone of proximal development. Nevertheless, subject 3C did show noticeable changes / addition to vocabulary (as shown in Table 4.3.1.3) and increase in the number of ideas [as shown in Table 4.3.1.1(a)] after collaboration.

In addition, collaborative work in writing appeared to have assisted subjects in enriching their vocabulary. In most groups, one subject would introduce words or phrases during collaborative work to other subjects. The subjects would then incorporate them into their essays. For instance, the phrase *'lung cancer'*, which appeared in subject 1C's pre-test essay, was used by other members of Group 1 in their post-test essays. Subject 1C may also have introduced the 3Rs; *'renew'*, *'reduce'*, and *'reuse'* to other members during collaborative work and one of them might have suggested that *'renew'* was supposed to be *'recycle'*. The 3Rs were subsequently present in Group 1's post-test essays. Similarly, subject 2C might have made known to others in her group that *'the temperature of earth increases'* as a result of air pollution. Consequently, variations of that phrase appeared in other subjects' post-test essays; *'increase temperature of earth'* (Subjects 2A and 2D) and *'our temperature is increase'* (Subject 2B). In another instance, subject 5D most likely introduced the words *'factory'* and *'filter'*, which were used in her pre-test essay, to other subjects in Group 5 who used those phrases in their post-test essays. Subject 5D had most probably picked up the phrase *'share transport'* from her group members as that phrase was only present in their pre-test essays. In Group 6, subjects 6B had most likely introduced the word *'facilities'* and together with 6D, might have suggested the phrase *'obeyed the rules'* to other group members whose pre-test essays did not contain these words.

In other groups, changes / addition to vocabulary appear to correspond with the increase of ideas in the subjects' post-test essays. For example, all members of Group 1 included words and phrases that were not present in their pre-test essays such as *'green house effects'*, *'the thickness of ozone layer'*, *'lung cancer'*, *'recycle'*, *'reduce'*, *'reuse'* and *'prevention is better than cure'*. In Group 3, only subject 3C had noticeable changes / addition to vocabulary and it is correlated to the increase in the number of ideas in the

subject's post-test essay. Subject 3C used words and phrases such as *'less the using gas of CFC like refrigerator, air-cond and aerosol'*, *'share a transport'*, *'prevent open burning'*, *'responsible'* and *'government...need to more serious'*. Similarly, the noticeable changes / addition to vocabulary in Group 4's post-test essays appear to correspond with the increase of ideas in the subjects' post-test essays. In Group 5, subject 5A's noticeable changes / addition to vocabulary are due to the surplus in ideas in the subject's post-test essay. Hence, subject 5A's post-test essay contained words and phrases not found in her pre-test essay; *'irresponsible human activities'*, *'summon'*, *'penalty'*, *'campaign'*, *'advertise'*, *'smog'*, *'factory'* and *'filter'*. These aforementioned results demonstrate the link between changes / addition to vocabulary with the increase of ideas in the subjects' post-test essays. The link between vocabulary and increase in ideas is rational because subjects needed new words or phrases to express their new ideas. Subjects introduced new words or phrases to other group members and vice versa. This is further reinforced by the observation analyses in which subjects were seen requesting for and giving information and examples during Step 1 of collaborative work in writing and requesting for and giving assistance, especially in terms of language and content during Step 2 of collaborative work. These two steps yielded positive results as subjects displayed changes / addition to vocabulary.

However, the study showed mixed results when it came to the effectiveness of collaborative work in improving students' writing in terms of mechanics. The mechanics of writing include punctuation, paragraphing and spelling. In terms of punctuation, there were no real obvious differences as subjects demonstrated accurate use of punctuation in both the pre- and post-tests. It could be that the subjects were well aware that a full stop is used to mark the end of a sentence and a comma is used to show a break between parts of a sentence. Subjects did not commit any errors in their pre-test essays, suggesting that they most likely have a good grasp of basic punctuation. Furthermore, the nature of the writing

task did not warrant the use of a variety of punctuation marks. As depicted in subjects' pre-test and post-test writing, the subjects manifested the use of basic punctuation marks such as full stops and commas. Similarly, 21 out of 24 subjects demonstrated accurate use of paragraphing in their pre-test and post-test essays [as shown in Table 4.3.1.4(a)], suggesting that they knew how to use different paragraphs for different main ideas. The two subjects (4B and 6C) who committed errors in paragraphing in their pre-test essays appeared to have benefitted from collaborative work in writing as they showed vast improvement in their post-test essays. This shows that if subjects are grouped together with peers who are just above their zones of proximal development, subjects could benefit from collaborative work as the more able students would most likely be able to guide them in using the correct mechanics of writing, such as paragraphing.

Analyses of subjects' use of spelling, too, revealed that three subjects (2D, 3B, 6D) showed marked improvements, thus reinforcing the aforementioned argument. However, seven subjects (1B, 1D, 2B, 3C, 4A, 4D, 5D) did not improve while the remaining 14 subjects (1A, 1C, 2A, 2C, 3A, 3D, 4B, 4C, 5A, 5B, 5C, 6A, 6B, 6C) remained the same. Even though collaborative work appeared to have positive effects on students' writing, it does not guarantee quantum leap in improvement for all students. This is because students are collaborating with their peers. Students are bound to make mistakes in certain areas as peers are not teachers who could guide them in all aspects. The aim of collaborative work is to help improve students' writing. It does not warrant an error-free writing for all students. It is hoped that students with poor or average command of the language acquire different skills or knowledge in different collaborative sessions and eventually make less mistakes. Furthermore, the grouping of subjects who have poor or average command of the language with others who are at a level just beyond the aforementioned subjects' level of competence may have a double-edged sword effect. Subjects who have poor or average

command of the language may also exert influence in a negative way on their slightly more capable peers, causing them to make mistakes. Moreover, these more capable subjects may make mistakes or remain the same because they have no peers who are slightly above their zone of proximal development to provide constructive and corrective feedback.

4.3.3 Summary of Pre- and Post-Tests Analyses and Discussion

First, a pre-test was carried out in which subjects wrote an essay individually. Then, subjects were familiarised with the steps involved in collaborative work. After that, they were required to produce essays based on the steps in collaborative work. These essays constituted the post-test. The essays from the pre- and post-tests were graded based on the marking criteria designed by the Malaysian Examinations Syndicate which include content, language, vocabulary and mechanics. Analyses and discussion of the pre- and post-tests revealed that most subjects (21 of them) changed the content of their essays as a result of collaborative work. Analyses and discussion also revealed that subjects who have poor or average command of the language appeared to show improvements when they are grouped with the others who are at a level just above the aforementioned subjects' level of competence. In the vocabulary component, the results are mixed in which 10 subjects made noticeable changes / addition as opposed to 14 subjects who made minor changes / addition after collaboration. Nevertheless, the fact that subjects altered the vocabulary of their essays seems to indicate that collaborative work had a hand in these changes / addition. In the mechanics component, the results were mixed.

4.4 Research Question 3: To What Extent Do Students Find Collaborative Work Useful in Writing their Essays?

This study attempts to shed light on the effectiveness of collaborative work in students' writing. Analyses and discussion of data obtained from pre-test and post-test essays and observation provided invaluable insight of the efficacy of collaborative work in students' writing. Nevertheless, observation and pre-test and post-test essays alone do not provide a complete picture. It is also important to obtain information from the subjects themselves who participated in this research. At the end of the post-test writing session, questionnaires were administered to the subjects. There were a total of 13 questions; Questions 1, 2 and 3 seek subjects' opinions on collaborative work, Question 4 is related to the intervention phase, Questions 5 to 12 are related to the steps involved in collaborative work and Question 13 requires subjects to provide reasons for preferring collaborative work in writing. On the whole, the questionnaire aimed to determine the extent to which students find collaborative work to be useful in writing their essays.

4.4.1 Data Presentation of Questionnaire

After the post-test writing session, I administered questionnaires to the subjects. The results are presented in groups of questions. Questions 1, 2 and 3 that enquire the opinions on collaborative work have been grouped together. Question 4 is related to the intervention phase. Questions 5 to 12 are related to the steps involved in collaborative work and therefore grouped together. Finally, Question 13 is presented on its own because it is the only open-ended question in the questionnaire. Moreover, subjects' opinions based on Question 13 are relevant to the third research question as mentioned in 1.4.

4.4.1.1 Questions 1, 2 and 3

The findings for Questions 1, 2 and 3 as presented in Tables 4.4.1.1(a), 4.4.1.1(b) and 4.4.1.1(c) revealed that the majority of subjects liked working in a group (17 subjects), found group work to be useful (20 subjects) and found it easier to work in a group (20 subjects). Only a handful of subjects admitted that they ‘sometimes’ liked working in a group (7 subjects), found group work to be useful (4 subjects) and found it easier to work in a group (3 subjects). No subjects chose ‘no’ for the first two questions. However, one subject did not find it easier to work in a group, even though the subject liked working in a group and found group work to be useful.

Table 4.4.1.1(a): Subjects’ opinions on working in a group

Question 1: Do you like working in a group?	Number of Subjects
Yes	17
No	0
Sometimes	7

Table 4.4.1.1(b): Subjects’ opinions on whether they find group work to be useful

Question 2: Do you find group work to be useful?	Number of Subjects
Yes	20
No	0
Sometimes	4

Table 4.4.1.1(c): Subjects’ opinions on working in a group

Question 3: Do you find it easier to work in a group?	Number of Subjects
Yes	20
No	1
Sometimes	3

The findings suggested that while the majority of subjects had given collaborative work their seal of approval, collaborative work might not be everyone’s cup of tea all the

time. The handful of subjects who chose ‘sometimes’ most likely found collaborative work to be useful up to a certain point. In fact, one subject made it known that she did not find it easier to work in a group. She felt marginalised and it was evident when she responded to Question 13. She wrote ‘*when I have some idea, they usually don’t accept it as my own idea*’.

4.4.1.2 Questions 4 - 12

Question 4 seeks to ascertain subjects’ opinions on the intervention phase prior to the post-test. The findings as presented in Table 4.4.1.2(a) showed that 18 subjects found the training received for working in a group was enough, 4 subjects felt that the training was not enough and 2 subjects found the training received was too much.

Table 4.4.1.2(a): Subjects’ opinions on training

Question 4: The training you received for working in a group was...	Number of Subjects
Not Enough	4
Enough	18
Too Much	2

This question was posed to find out if subjects knew thoroughly the steps involved in collaborative work and if the training had been enough. Once again, the majority had spoken and indicated that the training they received was enough (in fact 2 subjects said the training was too much), suggesting that subjects knew of what they were supposed to do during collaborative work. The two subjects, who indicated that they had received too much training, when probed by the researcher, said that they got tired of the collaborative work routine after a few intervention sessions. These subjects clearly exhibited what Wray, Trott and Bloomer (1998) referred to as the ‘practice’ and ‘fatigue’ effect (as mentioned in 3.2) as the subjects stated that they got tired and bored of the writing activities given.

Besides that, four subjects felt that the training received was not enough. Noting the negative response, I then queried the subjects on the reason for their negative response on Question 4. Queries revealed that the subjects had not fully internalised the steps involved in collaborative work. Subjects were introduced to collaborative work in writing for the first time, so it would take time to get used to the process of collaborative work in writing.

Question 5 relates to steps 1, 2 and 3 of collaborative work in writing in which subjects discussed ideas for the essays, produced a rough draft, shared and edited essays among group members. Out of the 24 subjects, 14 subjects found comments from their friends to be useful, 9 subjects found comments to be useful ‘sometimes’ while 1 subject said ‘no’.

Table 4.4.1.2(b): Subjects’ opinions on whether they find their friends’ comments to be useful

Question 5: Do you find comments from your friends to be useful?	Number of Subjects
Yes	14
No	1
Sometimes	9

Question 6 too relates to steps 1, 2 and 3 of collaborative work in writing. 16 of the subjects felt their members had found their comments to be useful ‘sometimes’, 7 subjects selected ‘yes’, while 1 subject said ‘no’. The findings for Questions 5 and 6 suggested that collaborative work had been carried out effectively. The 16 subjects who felt their comments were useful ‘sometimes’ probably were self-conscious of their contributions compared to other members. They might have felt that their contributions were not good enough as compared to contributions made by others.

Table 4.4.1.2(c): Subjects' opinions on whether their friends find their comments to be useful

Question 6: Do your friends find your comments to be useful?	Number of Subjects
Yes	7
No	1
Sometimes	16

Question 7 relates specifically to Step 1 of collaborative work in writing in which subjects brainstormed for ideas to include in their essays. The findings as presented in Table 4.4.1.2(d) showed that 23 subjects felt collaborative work had helped in producing ideas for their essays.

Table 4.4.1.2(d): Subjects' opinions on whether collaborative work has helped them in producing ideas

Question 7: Has collaborative work helped in producing ideas for your essay?	Number of Subjects
Yes	23
No	1

The findings corroborated with the observation analyses in which subjects were seen actively discussing for ideas and indicating approval and disapproval over the ideas produced. Although the majority agreed that collaborative work helped in generating ideas, not everyone made full use of the idea. Analyses of subjects' post-test essays in terms of content revealed that 21 made some changes to their content after collaborative work (4.3.1.1). The difference between the findings found in subjects' essay contents and Question 7 showed that the ideas generated may not necessarily be fully utilised by all subjects, even though most of them agreed that collaborative work helped to produce ideas. However, one subject chose "No" for Question 7; the same subject, who in Question 3, made it known that she did not find it easier to work in a group.

Question 8 is related to Step 2 of collaborative work in writing in which subjects requested for and provided assistance while producing a rough draft. All of the 24 subjects agreed unanimously that collaborative work helped in improving their language.

Table 4.4.1.2(e): Subjects’ opinions on whether collaborative work has helped them in improving their language

Question 8: Has collaborative work helped in improving your language?	Number of Subjects
Yes	24
No	0

The findings were substantiated by data obtained from observation of subjects requesting for and providing assistance while producing a rough draft (4.3.1) and data obtained from language assessment in which the majority of subjects showed improvement in their language of varying degrees except for subject 3C (4.3.1.2). Although subject 3C did not seem to show improvement on the language analyses, she still chose “Yes” to this question. This may be attributed to her perception that she did improve, but analyses of the language showed otherwise. Nevertheless, subject 3C appeared to have made noticeable changes/addition to vocabulary (4.3.1.3).

Question 9 is also related to Step 2 of collaborative work in writing. Once again, all subjects unanimously agreed that their vocabulary improved as a result of collaborative work. The findings were corroborated by analyses in vocabulary in which all subjects showed either minor or noticeable changes to their vocabulary (4.3.1.3).

Table 4.4.1.2(f): Subjects’ opinions on whether collaborative work has helped them in improving their vocabulary

Question 9: Has collaborative work helped in improving your vocabulary?	Number of Subjects
Yes	24
No	0

Questions 10, 11 and 12 are connected to Step 3 of collaborative work in writing in which subjects shared and edited their essays among group members. The categories that they had to be aware of while editing were punctuation, paragraphing and spelling.

The findings as presented in Table 4.4.1.2(g) showed that all subjects felt collaborative work had improved their use of punctuation marks. In the punctuation analyses, however, there were no real obvious differences as subjects displayed accurate use of punctuation in both their pre and post-tests. The accurate use of punctuation suggests that subjects could possess a good command of punctuation. The subject matter of the writing task too may have contributed to subjects using full stops and commas most of the time. Subjects were mindful that a full stop is used at the end of a sentence and that a comma is used to show a break between parts of a sentence.

Table 4.4.1.2(g): Subjects' opinions on whether collaborative work has helped them in improving their use of punctuation marks

Question 10: Has collaborative work helped in improving your use of punctuation marks?	Number of Subjects
Yes	24
No	0

Similarly, all subjects concurred that collaborative work had improved their paragraphing [Table 4.4.1.2(h)].

Table 4.4.1.2(h): Subjects' opinions on whether collaborative work has helped them in improving their paragraphing

Question 11: Has collaborative work helped in improving your paragraphing?	Number of Subjects
Yes	24
No	0

In fact, analyses on paragraphing revealed that 21 subjects displayed accurate use of paragraphing; suggesting that subjects most likely understood what was to be expected when it came to paragraphing (that is, one paragraph for one idea). Two subjects, 4B and 6C, showed improvement as discussed in 4.3.1.4. One subject (5D), however, chose “Yes” to this question even though she did not improve. Once again, this may be attributed to her own perception that she did improve, even though analyses of paragraphing showed otherwise.

The findings as presented in Table 4.4.1.2(i) showed that 17 subjects felt collaborative work had improved their spelling. 7 subjects, however, did not feel the same.

Table 4.4.1.2(i): Subjects’ opinions on whether collaborative work has helped them in improving their spelling

Question 12: Has collaborative work helped in improving your spelling?	Number of Subjects
Yes	17
No	7

This particular finding corroborated with the spelling analyses in which 7 subjects did not do well in their spelling (4.3.1.4). Meanwhile, of the 17 subjects who felt collaborative work had improved their spelling, only 3 subjects had shown marked improvements based on the spelling analyses in 4.3.1.4.

4.4.1.3 Question 13

This open-ended question was divided into two. First, subjects were asked whether they thought group work has helped them in their writing. 23 subjects said ‘yes’ while 1 subject said ‘no’.

Table 4.4.1.3(a): Subjects' opinions on whether collaborative work has helped them in their writing

Question 13: Do you think group work has helped you in your writing?	Number of Subjects
Yes	23
No	1

Then, subjects were asked to provide reasons for their preference. 6 subjects found that group work allowed them to discuss, exchanged opinions and shared ideas, 7 subjects felt their language had improved while 1 subject found that group work allowed her to seek clarification when problem arose. In addition, 6 subjects mentioned both the first and second reasons while 3 subjects mentioned both the first and third reasons.

Table 4.4.1.3(b): Reasons for preferring collaborative work in writing

Reasons	Number of Subjects
Helped in discussion / Helped in exchanging opinions / Helped in sharing ideas	6 (6) (3)
Helped improve language	7 (6)
Helped seek clarification	1 (3)

The findings further corroborated what the assisting teacher and I noted during observation. During observation, subjects were seen brainstorming for ideas by discussing, exchanging opinions and sharing ideas. Subjects were also seen requesting for and giving explanations on the ideas produced, thus improving subjects' language competency. However, 1 subject felt group work had not helped her in her writing because 'when I have some idea, they usually don't accept it as my own idea'.

Table 4.4.1.3(c): Reason for not preferring collaborative work in writing

Reason	Number of Subjects
Ideas are not accepted	1

4.4.2 Data Analyses and Discussion

Based on the results from the questionnaire, subjects' responses were overwhelmingly in favour of the usefulness of collaborative work in writing their essays. The results for Questions 1, 2 and 3 revealed that the majority of subjects liked working in a group (17 subjects), found group work to be useful (20 subjects) and found it easier to work in a group (20 subjects). Subjects' positive responses to these questions indicate that collaborative work could be an effective tool to help improve students' interests in and quality of writing. Most Malaysian ESL learners find writing to be a daunting task and they often suffer from writers' block. They find it difficult to begin writing when given a writing task. As such, students could find collaborative work to be a welcome approach as it allows them to interact with each other and brainstorm for ideas to kick start their writing. All these help to boost students' interest and confidence in writing as they no longer find writing to be a solitary task which needs to be completed alone, even if they find it to be an uphill task. Working in a group could help alleviate their fears and worries about completing a writing task, especially writing in a second language. Besides helping students to kick start their writing, collaborative work also proves to be useful in the process of writing as students can continue to share ideas in terms of content and help each other in terms of language, vocabulary and mechanics of writing.

Guidance and help from their peers at this stage of writing not only could help make writing an easier task, but also could help make writing a more fun and interactive activity. Students tend to learn and improve more by learning and sharing with their peers. For instance, the weaker ones may feel more confident when working together with their more able peers in a group. As they grow more confident and learn to open up, they may gradually improve in various areas of writing such as language, vocabulary and content. The more capable students in turn may benefit from the joy of sharing and guiding their

peers. They not only get to reinforce their knowledge of the subject or language, they may also find writing to be an enjoyable task which is unlike the experience gained when writing individually, much like in the examination atmosphere.

As for a handful of subjects who ‘sometimes’ liked working in a group (7 subjects), found group work to be useful (4 subjects) and found it easier to work in a group (3 subjects), it is clear that collaborative work might not be everyone’s cup of tea all the time. In fact, one subject made it known that she did not find it easier to work in a group. It is possible that these handful of subjects found collaborative work a routine and expressed their need to break from that routine by choosing ‘sometimes’ to Questions 1, 2 and 3. In addition, group dynamics could also pose a problem to subjects. For instance, strained relationship with peers might hinder the operation of collaborative work in terms of cooperativeness, helpfulness or sharing of ideas. As a result, subjects may not want to share ideas or help out during collaborative work because of the strained relationship. The one subject who did not find it easier to work in a group and the handful of subjects who chose ‘sometimes’ for Questions 1, 2 and 3 are evidence of the importance of group dynamics when implementing collaborative work in writing.

These analyses unveil the importance of the teacher in providing a learning environment that is diverse, in accordance to the learning tasks. Collaborative work in writing is useful and beneficial, but to use it all the time for writing tasks is unreasonable. It becomes a routine and students may find it boring. Hence, the teacher needs to diversify the learning environment. Moreover, the role of the teacher as facilitators in collaborative work in writing is important, particularly in grouping subjects. Grouping subjects who have poor or average command of the language with others who are at a level just above the aforementioned subjects’ level of competence is not enough. The teacher should look into grouping subjects with peers whom they are comfortable working with because

“students want and need work that will enhance their relationships with people they care about” (Strong, Silver & Robinson, 1995:12).

Additionally, the teachers’ role is also important particularly in providing training for working in a group. There is a need for sufficient training as the findings for Question 4 showed that 18 out of 24 subjects found the training received for working in a group was enough. Nevertheless, four subjects felt that the training was insufficient. This is understandable because the subjects of this research were introduced to collaborative work in writing for the first time. Hence, it would take time to get used to the process of collaborative work in writing. It is indeed a challenge for the teacher to be able to find that balance of providing sufficient training without causing the ‘practice’ and ‘fatigue’ effect (Wray, Trott & Bloomer, 1998:164) as exemplified by the two subjects who felt the training received was too much. These two subjects got tired of the collaborative work routine. Some subjects (such as these two) may internalise the steps involved in collaborative work quicker than others, but that does not mean the others should be left out. It is not the intention of the researcher to cause the ‘fatigue’ effect, but bearing in mind that subjects were introduced to collaborative work in writing for the first time, the researcher had no choice but to proceed with the training so that the other subjects know what to do during the post-test. Indeed, on the whole, the majority of subjects (18 out of 24 subjects) attested to the fact that the training provided for collaborative work in writing was sufficient.

The findings for Questions 5 and 6 mainly generated positive responses from subjects [as shown in Tables 4.4.1.2(b) and 4.4.1.2(c)]. The findings show that subjects value collaboration and interaction as crucial in aiding their writing process. At the same time, the findings also suggest that the steps involved in collaborative work in writing were carried out successfully. In particular, Questions 5 and 6 relate to Steps 1, 2 and 3 of

collaborative work in writing in which subjects discussed ideas for the essays (Step 1), produced a rough draft (Step 2), and shared and edited the essays (Step 3). These three steps require subjects to interact among each other by providing remarks which may make them write better and the positive findings suggest that collaborative work in writing was conducted effectively. Nevertheless, one subject chose 'No' for both Questions 5 and 6. Incidentally, it was the same subject who made it known earlier that she did not find it easier to work in a group. She was also the one who would later on respond to Question 13 by writing '*when I have some idea, they usually don't accept it as my own idea*'. Poor group dynamics may have deterred the subject's confidence in collaborative work. This in turn may lead to unwillingness to participate and contribute during collaborative work. In this case, it is only natural that the subject did not find collaborative work to be a useful tool in helping to aid and develop her writing skills. This further reinforces the importance of group dynamics when implementing collaborative work in writing to ensure students find collaborative work useful in writing their essays.

The results for Questions 7, 8 and 9 too revealed that subjects found collaborative work useful in writing their essays. For example, 23 out of 24 subjects agreed collaborative work had helped in producing ideas for their essays (Question 7). This corroborated with the observation analyses in which subjects were seen actively discussing for ideas and indicating approval and disapproval over the ideas produced. However, analyses of the subjects' post-test essays in terms of content revealed 21 subjects made changes to their content. The difference between the findings found in subjects' essay contents and Question 7 showed that while subjects appreciated the usefulness of collaborative work in generating ideas, in the end they decided for themselves what they wanted to include in their essays. The one subject who chose 'No' for Question 7, the same subject who chose 'No' for Questions 3, 5 and 6, is a reminder of the importance of

grouping subjects whom they are comfortable working together with. The unanimous results for Questions 8 and 9 in which all subjects agreed that collaborative work helped in improving their language (Question 8) and vocabulary (Question 9) showed that subjects found collaborative work useful in improving these two aspects of their writing. The results were verified by observation analyses of subjects requesting for and providing assistance while producing a rough draft (4.2.1), language analyses in which most subjects displayed varying levels of improvement in their language (4.3.1.2) and vocabulary analyses in which all subjects demonstrated either minor or noticeable changes to their vocabulary (4.3.1.3).

While the responses thus far are generally in favour of the usefulness of collaborative work in writing, there were mixed results in the mechanics of writing. On the whole, all subjects felt collaborative work had improved their use of punctuation marks (Question 10) and paragraphing (Question 11). Although subjects were under the impression that collaborative work helped in improving their use of punctuation marks, punctuation analyses revealed that there were no marked differences in both the pre- and post-tests (4.3.1.4). Similarly, paragraphing analyses (4.3.1.4) showed that there were no discrepancies in both pre- and post-tests for 21 subjects while only 2 subjects showed improvement, even though all subjects felt collaborative work had helped them to improve their paragraphing. However, one subject did not improve though she chose 'Yes' to Question 11. This may be due to her own perception that she improved, even though analyses of paragraphing showed otherwise. As for Question 12, 17 out of 24 subjects said collaborative work had improved their spelling while 7 others said it did not. These 7 subjects corroborated with the spelling analyses in which 7 subjects did not improve in their spelling (4.3.1.4). Of the 17 subjects who said they improved, only 3 showed marked improvement while the other 14 subjects remained the same.

The extent to which subjects find collaborative work useful in writing their essays can be summed up by the results for Questions 13, the only open-ended question in the questionnaire. Of the 24 subjects, 23 felt that collaborative work has helped them in their writing. They provided the following reasons; collaborative work allowed them to discuss, exchange opinions and share ideas, to seek clarification and improved their language. However, one subject (the same subject who chose 'No' for Questions 3, 5, 6 and 7) did not agree collaborative work has helped her in her writing because '*when I have some idea, they usually don't accept it as my own idea*'. Her reason suggested that her contributions were not valued and poor group dynamics may have deterred the subject's confidence in collaborative work. Her comment demonstrates the need to group subjects with peers they are comfortable working with because the need to engage with others is essential in maintaining motivation in learning.

4.4.3 Summary of Questionnaire Analyses and Discussion

Questionnaires were administered to the subjects after the post-test writing session. The analyses and discussion revealed that the majority of subjects were in favour of collaborative work. The majority also agreed that collaborative work helped them in producing ideas and improving language, vocabulary and mechanics. Most subjects too gave favourable reasons for preferring collaborative work in writing. Nevertheless, one subject made it known that she did not prefer collaborative work in writing because her contributions were not valued.

4.5 Overall Summary

This study seeks to find out the effectiveness of collaborative work in students' writing. The results indicated that students' writing improved to some extent by means of

collaborative work. Analyses and discussion of the pre- and post-tests essays showed that subjects made changes to their content after collaboration. Although language registered mixed results, subjects with poor or average command of the language appeared to benefit from collaborating with more competent peers. Mechanics, too, registered mixed results. All subjects made either noticeable or minor changes/addition to vocabulary. In addition, data and analyses of observation showed collaborative work in writing can successfully be implemented. It requires careful planning, particularly in the intervention phase, which is crucial in the execution of the steps involved in collaborative work in writing. All subjects followed the steps in accordance with the stipulated time as practised during the intervention phase. Moreover, subjects who were appointed as leaders for each group ensured that the groups were kept on task. Finally, analyses and discussion of the questionnaires showed that most subjects were inclined towards collaborative work in writing. They also felt that collaborative work assisted them in areas such as content, language, vocabulary and mechanics. The following chapter comprises reviews of the research questions, limitations and recommendations for future studies.