CHAPTER FIVE

CONCLUSION AND IMPLICATIONS

5.1 INTRODUCTION

This research aimed at comparing the technical reports of the engineers who are working for a multinational organization based in China and Malaysia worksite. In order to achieve the aim of this research, ten technical reports written by the Chinese and Malaysian engineers were examined and the necessary data were obtained. In addition to identifying the preferences for sentence-types, this study also investigated the frequency of the scientific and technical terms used by the Chinese and Malaysian engineers.

A brief summary of all the findings and the discussion on the findings of the reports written by the Chinese and Malaysian engineers will be included in this chapter. After the summary and discussion of the findings, the research questions will be answered. This final chapter also includes the implications of the study for future research. This research hopes to gain some insight into the arena of ESP in both China and Malaysia.

5.2 SUMMARY AND DISCUSSION ON MAIN FINDINGS

The main findings and discussion with regard to the preferences of sentence-types of the Chinese and Malaysian engineers

In all of the five reports written by the Chinese engineers, there were 155 simple sentences, 34 compound sentences, 105 complex sentences, and 26 compound-complex sentences out of the total 320 sentences. The overall percentage of each sentence-type preferred by the Chinese engineers was: simple - 48%, compound - 11%, complex - 33%, and compound-complex - 8%.

As for the Malaysian engineers, in all of the five reports, there were 214 simple sentences, 16 compound sentences, 237 complex sentences, and 7 compound-complex sentences. The overall percentage of each sentence-type preferred referred by the Malaysian engineers was: simple - 45%, compound - 3%, complex - 50%, and compound-complex - 2%.

The order of the preference for sentence-types, from the most preferred to the least preferred, by the Chinese engineers was: simple sentences, complex sentences, compound sentences, and compound-complex sentences. As for the Malaysian engineers, the order of the preference for sentence-types was: complex sentences, simple sentences, compound sentences, and compound-complex sentences.

The Chinese engineers' preference for sentence-types was noticeably different from the Malaysian engineers' preference, in the sense that the Chinese engineers preferred simple sentences the most, whereas the Malaysian engineers preferred complex sentences the most. For the Chinese engineers, they could have found it easier to use simple sentences as it is relatively easy to construct simple sentences since they have the most basic form of structure, when compared to other sentence-types, as has been mentioned in Chapter two.

As the overall percentage of sentence-types preferred by the Chinese and Malaysian engineers showed, the Chinese engineers used simple sentences for 48% of the total writing of the technical reports, whereas the Malaysian engineers used complex sentences for 50% of the total writing.

This result could indicate that the overall proficiency of the Malaysian engineers in English is better that that of the Chinese engineers. The discrepancy of proficiency between the Chinese and Malaysian engineers could be attributed to the educational background of the Chinese and Malaysian engineers, whereby the Chinese engineers started to learn the English language from the fourth year of the elementary school, which is equivalent to primary 4 in Malaysia, or not at all until the secondary level, and the Malaysian engineers, on the other hand, started to learn English starting from Primary 1 or 3.

Apart from that factor, all of the five Chinese engineers who wrote the reports are graduates of the local universities, while three engineers out of the five Malaysian engineers are graduates of overseas universities and only two are local graduates, as has been mentioned in Chapter four.

As such, the background of the university education might have contributed to the fact that the Chinese engineers preferred simple sentences the most and the Malaysian engineers preferred complex sentences the most.

For both Chinese and Malaysian engineers, the least preferred sentence-type was compound-complex sentence. This could be attributed to the complexity of the compound-complex sentence, as it has indeed the most complicated sentence structure among all the four sentence-types, as has been explained in Chapter two.

The Malaysian engineers used simple and complex sentences for 95% of the total writing of the technical reports, whereas the Chinese engineers used them for 81% of the total writing of the technical reports. This result could be explained by the fact that the total percentage of compound and compound-complex sentences used by the Malaysian engineers accounts for only 5% of the total writing of the technical reports, whereas, for the Chinese engineers, the total percentage of usage of compound and compound-complex sentences makes up 19% of the total writing of the technical reports.

This also shows that the Chinese reports have more variety of sentences as opposed to the Malaysian reports, as the reports of the Malaysian engineers consist mainly of simple and complex sentences only.

In terms of language needs, this shows that engineers of the Malaysian worksite need to know to construct complex and simple sentences, as these are often used in their technical reports. In addition, these engineers also need to vary their sentences more to maintain interests of the readers of their reports rather than be too dependent upon complex and simple sentences.

Similarly, the Chinese engineers are also dependent upon simple and complex sentences. However, the dependency is lesser than that of the Malaysian engineers. In addition, they make attempts to use more compound and compound-complex sentences. Thus there is more variety of sentences used in the Chinese reports even though they may have a lower proficiency level.

In terms of language needs, this shows that the Chinese engineers at this worksite need to know how to construct simple and complex sentences, as they are often used in their reports. In addition, they also need to continue varying their sentences as data showed that they are already making efforts towards it.

As for the dependent markers used for the complex sentences, both the Chinese and Malaysian engineers used 'that' the most, followed by 'as', 'which', and 'after'.

Therefore, the Chinese and Malaysian engineers seem to have used similar dependent markers. But in terms of the least frequently used dependent markers, the Chinese and Malaysian engineers display rather different tendency. For the Chinese engineers, the five dependent markers 'in order that', 'since', 'so that', 'until', and 'what' were seldom used and the Malaysian engineers seldom used the five dependent markers 'although', 'as long as', 'even though', 'whereby', and 'whilst'. In addition, the Malaysian engineers used 20 different kinds of dependent markers and the Chinese engineers used 17 different kinds of dependent markers.

As such, in terms of language needs, the Chinese engineers need to know how to use various kinds of dependent markers for the complex sentences to convey the complexity of issues of the technical reports that they write.

The main findings and discussion with regard to the frequency of the scientific and technical terms used by the Chinese and Malaysian engineers

The total number of the scientific and technical terms used in all of the five reports written by the Chinese engineers was counted as 2675, and the total number of the nouns used in those reports was counted as 3273. Therefore, the overall percentage of usage of the scientific and technical terms in all of the five technical reports written by the Chinese engineers was calculated as 82%.

The total number of the scientific and technical terms used in all of the five reports written by the Malaysian engineers was counted as 3258, and the total number of the nouns used in all of the five reports was counted as 3786. Therefore, the overall percentage of usage of the scientific and technical terms in all of the five reports written by the Malaysian engineers was counted as 86%.

The discrepancy in the overall percentage of usage of the scientific and technical terms between the Chinese and Malaysian engineers was 4 %. This result could indicate that the Malaysian engineers used the scientific and technical terms more frequently than the Chinese engineers did. In other words, the Chinese engineers used 82 scientific and technical terms per 100 nouns when writing technical reports. As for the Malaysian engineers, 86 scientific and technical terms were used per 100 nouns when writing technical reports.

The discrepancy in the overall percentage of usage of the scientific and technical terms between the Chinese and Malaysian engineers could be attributed to the educational background of the Chinese and Malaysian engineers, whereby the Chinese engineers started to learn the English language from the fourth year of the elementary school or not at all until the secondary level and the Malaysian engineers, on the other hand, started to learn English starting from Primary 1 or 3 and English education in Malaysia is compulsory in all primary schools.

Apart from that factor, all of the five Chinese engineers who wrote the reports are graduates of the local universities, while three of the five Malaysian engineers are graduates of overseas universities and two engineers are graduates of the local universities.

As such, the educational background might have contributed to the fact that the Malaysian engineers used the scientific and technical terms more frequently than the Chinese engineers did.

For the Chinese engineers, the highest percentage of usage of the scientific and technical terms was 88%, whereas the lowest was 76%. As for the Malaysian engineers, the highest percentage of usage of the scientific and technical terms was 88%, whereas the lowest was 85%.

For the Chinese engineers, the difference of 12% between the highest percentage and the lowest percentage could indicate that the frequency of the scientific and technical terms used by the Chinese engineers could vary distinctively among themselves.

As for the Malaysian engineers, the difference between the highest percentage and the lowest percentage was 3%, as the highest was 88% and the lowest was 85%. The comparatively small difference of 3% between the highest percentage and the

lowest percentage could indicate that most of the Malaysian engineers used the scientific and technical terms very frequently and consistently.

In reference to what was said by the Senior Process Engineering Manager, which has been mentioned in Chapter one, reports that use more scientific and technical terms can be categorized as more effective as these terms could enhance better understanding of the reports by their readers. Therefore, in terms of needs, Chinese engineers are recommended to use more scientific and technical terms.

In addition, this information on the frequency of usage of the scientific and technical terms would help future engineers of these worksites to be aware of the scientific and technical terms used in technical reports. The researcher has also included lists of the scientific and technical terms used and as such these could provide an overview of the common scientific and technical terms used in technical reports.

5.3 RESEARCH QUESTIONS AND THE ANSWERS

In order to achieve the aim of the study, the following research questions were explored. By analyzing the data obtained from the reports written by the Chinese and Malaysian engineers, the research questions have been answered as follows:

1. What are the specific sentence-types used when the Chinese and Malaysian engineers write technical reports?

This research question is about the preferences of the Chinese and Malaysian engineers in the choice of sentence-types. Based on the data collected from the ten technical reports written by the Chinese and Malaysian engineers, the following results were obtained.

It is found that there are indeed preferences for certain sentence-types when these engineers write the technical reports. The Chinese engineers prefer simple sentences the most, whereas the Malaysian engineers prefer complex sentences the most. For both Chinese and Malaysian engineers, the least preferred sentence-type is compound-complex sentence.

The order of the preference for sentence-types, from the most preferred to the least preferred, by the Chinese engineers is: simple sentences, complex sentences, compound sentences, and compound-complex sentences. As for the Malaysian engineers, the order of the preference for sentence-types is: complex sentences, simple sentences, compound sentences, and compound-complex sentences.

Thus, even though there are differences in terms of the most preferred sentence-type, they are rather similar in terms of their two most preferred sentence-types and the two least preferred sentence-types.

2. What is the frequency of the scientific and technical terms used by the Chinese and Malaysian engineers when they write technical reports?

This research question is about the frequency of the scientific and technical terms used by the Chinese and Malaysian engineers when writing technical reports.

The total number of the scientific and technical terms used in all of the five reports written by the Chinese engineers is counted as 2675, and the total number of the nouns used in those reports is counted as 3273.

Therefore, the overall percentage of usage of the scientific and technical terms in all of the five technical reports written by the Chinese engineers is calculated as 82%.

The total number of the scientific and technical terms used in all of the five reports written by the Malaysian engineers is counted as 3258, and the total number of the nouns used in all of the five reports is counted as 3786.

Therefore, the overall percentage of usage of the scientific and technical terms in all of the five reports written by the Malaysian engineers is counted as 86%.

As such, the difference in the overall percentage of usage of the scientific and technical terms between the Chinese and Malaysian engineers is 4% and the result

indicates that the Malaysian engineers use the scientific and technical terms more frequently than the Chinese engineers do when writing technical reports.

This shows that there are differences in the frequency of the scientific and technical terms used by the Chinese and Malaysian engineers. Nevertheless, the difference of 4% could be considered small.

As a conclusion for the research questions, it can be said that there are differences in terms of the preferences for sentence-types and the frequency of usage of the scientific and technical terms when the Chinese and Malaysian engineers write technical reports. However, it is found that there is no marked difference in terms of the sentence-types and the frequency of the scientific and technical terms when engineers, regardless of worksites, of this multinational organization write the technical reports.

5.4 IMPLICATIONS OF THE STUDY FOR FUTURE RESEARCH

This research was aimed at identifying the sentence-types and investigating the frequency of scientific and technical terms in the technical reports written by the Chinese and Malaysian engineers who are working for the same multinational, but are attached to different worksites.

As English language training programmes will always be sought by multinational organizations that place importance on expanding their market to international levels, there is a greater need for employees to reach a certain level of language excellence in order to be marketable in the corporate sector. They need to be equipped with the necessary skills expected by the companies.

This research examined the technical reports written by the Chinese and Malaysian engineers. The focus of the study was on the preferences for sentence-types and the frequency of the scientific and technical terms used by the Chinese and Malaysian engineers. The results of this study could provide the empirical data valuable to both ESP educators and learners to explore the writing styles of engineers.

The information obtained in this study may be able to make some practical suggestions for encouraging educators and learners to develop a more flexible approach to learning contexts and tasks. The findings of the study could be used to gauge and ponder on certain aspects of the different styles of writing technical reports.

However, this research was carried out within a few constraints. Firstly, this study relied on a few technical reports obtained from engineers who were working for one particular multinational organization. Secondly, this study was only limited to two worksites of this organization.

The analysis of the reports written in English by the engineers in both China and Malaysia would be more valid if more reports and reports from other worksites could be analyzed to substantiate its findings. Future research could also possibly look at other aspects of differences in writing technical reports, including the set patterns of writing.

5.5 CONCLUSION

The aim of this study was to identify the choice of sentence-types and to investigate the frequency of the scientific and technical terms used by the Chinese and Malaysian engineers, who are working for the same multinational, but in different worksites.

This researcher considers that the aim of the research has been achieved, since the choice of sentence-types have been identified and the frequency of the scientific and technical terms has been investigated with the data obtained from the ten technical reports written by the Chinese and Malaysian engineers. In addition, the dependent markers for the complex sentences used by the Chinese and Malaysian engineers were identified.

It is hoped that this research could be useful for the preparation of ESP materials for the engineers who are working for multinational companies as well as for the students who want to join any multinationals in the future.