

CHAPTER FOUR

RESULTS AND DISCUSSION

In this chapter, the researcher will discuss the following issues to see whether the participants of different learning styles made significant progress in their reading comprehension after the instruction of the 4Mat system. First of all, the participants' different learning styles will be analyzed. Then the researcher will examine the results of the pre-test. Next, the results of pre-test and post-test will be checked to see if the participants did make progress.

Results of the Participants' Learning Types

The results of the test showed that each participant could be grouped into one of the 16 different types of personalities (Table 5).

According to Table 5, there were six Type 1 learners, five Type 2 learners, nine Type 3 learners, and ten Type 4 learners in the experimental group. We can find that those who enjoy the traditional instruction were the smallest in number, only five, in this class. On the other hand, there are nineteen learners (Type 3 and Type 4 Learners) who would like to practice the theory and convince themselves, among whom ten learners (Type 4 Learners) hope to add something to show their creativity. The

learning style survey did show some diversity of learner styles, therefore the researcher planned to use the characteristics of the 4MAT System, which has been proved to suit different types of learners, to design the course to help participants improve their reading comprehension.

Table 5 The Results of the Participants' Learning Types

Learning Types	Students	ID	Number	Total	McCarthy's Learning Styles
ISFP	30			1	Type 1 Learners (Imaginative Learners)
ISTP	28			1	
ESFP	9	36		2	
ESTP	11	35		2	
subtotal				6	
ENTP	24			1	Type 2 Learners (Analytic Learners)
INTJ	21			1	
INTP	14	32		2	
ENTJ	31			1	
subtotal				5	
ESTJ	4			1	Type 3 Learners (Common Sense Learners)
ISTJ	17	38		2	
ESFJ	3	7	27 33	4	
ISFJ	1	13		2	
subtotal				9	
ENFJ	29	23		2	Type 4 Learners (Dynamic Learners)
ENFP	2	5	12 22	4	
INFJ	10	26		2	
INFP	15	16		2	
subtotal				10	
Total of the participants				30	

The Results of the Pre-test

Before the instruction, the participants of the experimental group were asked to take the pre-test. The results of the pre-tests are presented in Table 6.

Table 6 The Results of the Pre-test of the Participants

<u>Experimental Group (N=30)</u>		
	Correct	Incorrect
1 st question (word-guessing)	18 (60%)	12 (40%)
2 nd question (finding the detail)	22 (73.3%)	8 (26.7%)
3 rd question (finding the main idea)	16 (53.3%)	14 (46.7%)
4 th question (making inference)	18 (60%)	12 (40%)

From the result (Table 6), it can be seen that sixty percent of the participants in the experimental group answered the first question (word guessing) correctly. The most participants in the experimental group who answered the second question correctly. The number (sixteen) of the participants in the experimental group who answered the third question (finding the main idea) correctly was the smallest.

Then the participants were asked to answer the questionnaire after taking the pre-test. The results of the questionnaire are presented in Table 7.

Table 7 The Results of the Questionnaire

	Item (a)	Item (b)	Item (c)	Item (d)
Q 1	(word guessing) 4 (13.3%)	(finding the detail) 3 (10%)	(finding the main idea) 15 (50%)	(making inference) 8 (26.7%)
Q 2	(word guessing) 9 (30%)	(finding the detail) 13 (43.3%)	(finding the main idea) 3 (10%)	(making inference) 5 (16.7%)
Q 7	5 (16.7%)	17 (56.6%)	8 (26.7%)	—
Q 8	9 (30%)	21 (70%)	—	—
Q 9	27 (90%)	3 (10%)	—	—

Note: 1. Q3~Q6 are the questions to which the answers varied from individual to individual.

2. This questionnaire includes nine questions instead of ten because the first question in the first questionnaire was deleted for lacking reliability after being answered in the pilot study.

From Table 7, 13.3% of the subjects thought word guessing was the hardest part. Nevertheless, still quite a few subjects in the pre-test (40%) did not choose the right answer. Therefore, although the participants might seem very confident, they needed to improve their guessing skills. The other parts of the results showed that quite a few participants (73.3%) regarded reading comprehension as more difficult than other parts of the English exam of the BCT. In the questionnaire, at least 90% of the participants were willing to take lessons to improve their reading comprehension.

The results of the pre-test and the questionnaire encouraged the researcher to use the 4Mat approach to promote the participants' interest in learning vocabulary and to train them to find the main idea of the article and learn to make inference from the articles. All the activities would be designed to allow each type of participants to take part in.

The Results of the Pre- and Post-test

After the instruction, the participants took the post-test for the researcher to check if they made any progress. The results of the comparison are presented in Table 8.

Table 8 The Comparison between the Pre- and Post-tests of the Participants

	<u>Pre-test</u>		<u>Post-test</u>	
	Correct	Incorrect	Correct	Incorrect
1 st question (word-guessing)	18 (60.0%)	12 (40.0%)	25 (83.3%)	5 (16.7%)
2 nd question (finding the detail)	22 (73.3%)	8 (26.7%)	24 (80.0%)	6 (20.0%)
3 rd question (finding the main idea)	16 (53.3%)	14 (46.7%)	21 (70.0%)	9 (30.0%)
4 th question (making inference)	18 (60.0%)	12 (40.0%)	24 (80.0%)	6 (30.0%)

According to the results, 23.3% more (seven more subjects) of the subjects got the right answer in guessing the meaning of the word in the article in the post-test than in the pre-test. With the details of the article, 6.7% more (two more) of the subjects answered the question right in the post-test than in the pre-test; 16.7% more subjects

(five more subjects) were able to find the main idea of the article, and 20% more (six more subjects) were able to make the inference from the article in the post-test.

With the 4Mat, therefore, the subjects' reading ability could be improved at least in four aspects: word guessing, finding the details and the main idea, and making the inference from the article. The percentage of the subjects who found the detail correctly did not increase a lot because the question had been answered correctly by most subjects in the pre-test. The other three types of questions were answered correctly by more subjects in the post-test than in the pre-test.

To be more specific, the researcher also used T-test as the significance test to show if there was significant progress in the post-test of the experimental group (see Table 9).

Examining the results of the T-test, except for the second question (finding the detail), the subjects made significant progress in three other types of questions (guessing the meaning of the word, finding the main idea, and making inference). The participants did not make significant progress on the second question probably because the number of the participants who answered the second question correctly had been the largest. It was not easy to make a lot more progress in this question. Therefore, we can still conclude that students did make some progress through the instruction of the 4Mat system.

Table 9 T-test for the Pre-test and the Post-test of the Participants

Group	Mean	SD	T-value	Sig.
Question 1				
Pre-test	0.60	0.50	2.971	0.006**
Post-test	0.83	0.38		
Question 2				
Pre-test	0.73	0.45	1.439	0.161
Post-test	0.8	0.41		
Question 3				
Pre-test	0.53	0.51	2.408	0.023*
Post-test	0.70	0.47		
Question 4				
Pre-test	0.57	0.50	2.971	0.006**
Post-test	0.8	0.41		

P < 0.05 *

P < 0.01 **

Then the researcher checked which one of the four groups benefited the most from the approach of the 4Mat system. Therefore, the researcher ran the T-test one question after another to see if any group made significant progress.

Table 10 represents the difference between the pre- and the post-test of all the four types of learners while answering Question 1.

Table 10 T-test for the Pre-test and the Post-test of the Four Learning Types in Answering Question 1

	Mean	SD	T-value	Sig.
Type 1	-0.17	0.41	-1.000	0.363
Type 2	-0.20	0.45	-1.000	0.374
Type 3	-0.11	0.60	-0.555	0.594
Type 4	-0.17	0.47	0.000	1.000

No significant progress could be seen in Table 10 because there were only six participants in the group of Type 1 learners. The sample was not large enough to show the significance. However, when we checked the number of the participant of Type 1 learners, it could be found that the number of the participants answering the first question correctly increased by one participant.

Then the same analysis was conducted to check Type 2 learners in answering question 1. There is no significant difference in the table above for the same reason as Table 10. The number of Type 2 learners was the smallest among the four types of learners. There were only five in the group. In the pre-test, four of the participants answered the question correctly; in the post-test, all of the participants answered it correctly. However, the sample was too small to show the significance.

Then Type 3 learners were examined in the same way and the result is discussed as follows:

Though there were nine participants in the group, there was still no significance because in the pre-test, eight of the participants in the group answered the question correctly and in the post-test, all of them answered it correctly. One more participant answering it correctly could not show the significance.

According to the above table, there was totally no significance for Type 4 learners because in both the pre- and the post-tests, there were nine participants who answered the first question correctly. That is, in both tests, only one of the participants in the group answered it incorrectly and it was not the same person. Therefore, no significance was shown at all.

To check whether the four types of learners made any progress in answering the second question, finding the detail, the researcher used the same way to analyze the results of the pre- and post-tests of the four types of learners. The results are presented as follows in Table 11:

Table 11 T-test for the Pre-test and the Post-test of the Four Learning Types in Answering Question 2

	Mean	SD	T-value	Sig.
Type 1	-0.50	0.55	-2.236	0.076
Type 2	-0.20	0.84	-0.535	0.621
Type 3	0.00	0.71	0.000	1.000
Type 4	0.00	0.67	0.000	1.000

Although it can not be definitely said that Type 1 learners made significant progress in answering this question, the data was quite close to significance difference. In the pre-test, three of the participants in the group answered the question correctly and in the post-test, all of the participants answered it correctly. However, the sample was not large enough to show the significance.

After examining the results, Type 2 learners encountered the same situation: the number of the participants who answered the second question increased, but it did not reach significance because of the small number of the participants.

For Type 3 and 4 learners, there was no significance at all in the pre- and post-test because the number of the participants answering the second question correctly in the pre-test was as large as that of the participants answering it correctly in the post-test.

To discuss the results of the pre- and the post-tests in answering the third question, finding the main idea, we get the following results. First, we found that we could not use T-test to make any conclusion or discussion about how Type 1 learners did it in answering this question because either the number of the participants answering the question correctly or who answered it correctly remained the same in the pre- and the post-tests. Therefore, the result could not be calculated unless there were more participants or there were more questions of the same type.

As to other types of learners who answered the third question, the results were presented as follows in Table 12.

Table 12 T-test for the Pre-test and the Post-test of the Three Learning Types in Question 3

	Mean	SD	T-value	Sig.
Type 2	-0.20	0.45	-1.000	0.374
Type 3	-0.44	0.53	-2.530	0.035*
Type 4	-0.50	0.53	-3.000	0.015*

By looking at the above table, we found that there was only little significant difference between the pre- and post-tests for Type 2 learners to answer the third question because of the same reasons mentioned previously. First, there were only five participants in this group, so the number was not large enough to see the significance. Second, when we checked the exact number of participants who answered the question correctly, we found that the number did increase by one person. That is, there were four participants answering the question correctly in the pre-test; but there were five participants answering it correctly, which meant that all the participants in this group answer it correctly.

For Type 3 learners, they made quite a difference in answering the third question. In answering question 3 (on the main idea of the article), Type 3 learners made significant progress in the post-test. Finding the main idea is a kind of global question and the answer can not be easily found in the article. Type 3 learners are the ones who are eager to practice what they have learned in class to make sure what the teacher taught is meaningful to them. By using the approach of the 4Mat system, plenty of activities were provided for them to put what they learned into practice. In the pre-test, six out of nine participants answered the question incorrectly. After the approach, only two of them answered it incorrectly. And because the number of Type 3 learners was large enough to show the significant progress, the results was obvious.

According to the table above, Type 4 learners made the most significant progress among the four types of learners. Type 4 learners are a group of learners who have creative thinking and have the ability to make evaluation. In the approach of the 4Mat system, the researcher designed the activities for them to develop their creativity, such as making sentences about one topic, to help them make good use of their ability.

In answering the last question, making inference from the article, the researcher found the following results. After taking the pre- and the post-tests, the three types of learners (except for Type 2 learners) showed the results as Table 13 .

Table 13 T-test for the Pre-test and the Post-test of the Three Learning Types in Question 4

	Mean	SD	T-value	Sig.
Type 1	-0.17	0.41	-1.000	0.363
Type 3	-0.33	0.71	-1.414	0.195
Type 4	-0.50	0.53	-3.000	0.015*

Again, although there was only little difference for Type 1 learners in answering the fourth question in the pre- and the post- test, the number answering the question correctly in the post-test increased by one participant. That is, five out of six answered it correctly in the pre-test, but all of the participants answered it correctly in the post-test.

As for Type two learners, no analysis was possible because the number answering the question correctly did not increase at all and the one who answered it incorrectly in the pre-test remained the same in the post-test.

According to the table above, there is little significance. It could thus be concluded that the 4Mat system may be of little help to this type of learners in making inference from the article.

According to Table 13, Type 4 learners also made significant progress in answering the fourth question. Making inference is also a kind of global question

whose answer can not be found like the details in the article and which demands logical thinking. After the instruction of the 4Mat system, such type of learners became more confident in making inference.

Summary of Results

By using the 4Mat System approach, the researcher provided an environment in which students, with the assistance of the teacher and their peers, become more proficient in applying comprehension strategies and constructing knowledge while reading from the content texts.

As a whole, when the researcher conducted the activities of 4Mat system, the atmosphere in the classroom was pleasant and full of participation. The sense of participation is quite important in learning English, for learning is no more the “intelligent” students’ business. That everyone in the classroom can take part in learning means a lot to those students with low English proficiency in their studies. In the 4Mat system, everyone in the classroom gets something to do in class.

Generally speaking, the participants made some progress after the instruction of the 4Mat system. What was more important is how the four types of learners made progress specifically.

Through the different results of the statistical analyses, the participants of

different learning types made significant progress in different aspects of questions. For example, Type 1 learners made more progress in finding the meanings of the word than the other types of learners; in finding the main idea of the article, Types 3 and 4 learners both made significant progress; in making inference from the article, Type 4 learners made the most significant progress than the other types of learners after the instructor adopted the 4Mat system as the teaching approach.

Although Type 2 learners did not make any significant progress in any of the four aspects of questions, the researcher does not think the learners of this type did not make any progress. We got the above results because the number of Type 2 learners was the smallest in number among the four types of learner. Therefore, when we ran the T-test, no obvious results were shown. However, when checking the numbers of the participants answering the four questions in the pre- and the post-tests, the numbers increased in the first, second, third questions.

Even though the number of Type 1 learners was not very large (six), they still made significant progress in question 2 (finding the detail in the article). As mentioned in the previous chapters, Type 1 learners are more interested in the subjects which can be connected to their real experience. By promoting their interest in the topic of the article, the researcher tried to make them more confident in finding what was clearly stated in the article.

In the pre-test, all four types of learners did not do a good job in answering the third and the fourth questions (finding the main idea of the article and making inference from it). After the instruction using the 4Mat system, Type 4 learners made significant progress in these two types of questions. Type 3 learners, with the help of the 4Mat system, also learned to apply what was taught and made significant improvement in the third question.

After getting the specific results, some limitations were also found in this study and they will be discussed in the next chapter.