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The Strategies of the High-performing Non-native English Language Readers with Structurally Difficult Texts

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Abstract

This study focused on the activities and strategies that high-performing non-native English language readers applied in coping with structurally difficult texts and how such difficulty triggered them to work beyond their threshold. The study used a single-group design involving fifty-seven high-performing non-native English language readers from a population of third-semester diploma students who were selected to undergo nine levels of reading tests. The participants were required to provide feedback on the activities they had taken to overcome the difficulties. Based on the reflective feedback, fourteen coping activities, with repeated reading being the most popular, were named. The participants' activities were then categorised into five strategies based on Lazarus and Folkman's classification of coping strategies. The self-control strategy was found to be the most widely used. The study also found that different strategies worked well for varying difficulty levels. For this reason, it was suggested that readers should be exposed to various activities and strategies so that they would be able to apply them effectively. This would enable them to move beyond their threshold as they are equipped to cope with the difficulties.

Keywords: Readers, High-Performing, Difficulty, Coping, Strategies.

Introduction

When reading is assigned, readers may be forced to read texts that are too taxing or beyond (in Krashen's (1987, 2009) term) 'comprehensible input'. Krashen's (1987, 2009) input hypothesis states that learners could improve their language abilities if the input is comprehensible. Hence, the notion of $i+1$ has been used to describe the acceptable level that learners can be exposed to, where "i" is used to describe the current status of the learners and "+1" is the acceptable difficulty that learners can handle. However, Krashen did not further elaborate on how learners would deal with these difficulties and how these difficulties

become acceptable. Studies using the input hypothesis as the theoretical framework have also not addressed this idea (Keshmirshakan, 2019; Krashen & Mason, 2020; Yang et al., 2021).

To further clarify how difficulties are dealt with, this paper discussed other dimensions of the cognitive process of reading: memory capacity and the factors constraining reading performance. In reading, cognitive processes play a major role in determining how such a process is successful. However, the discussions on the processes involved in cognition are primarily theoretical. Existing empirical evidence is mainly based on secondary evidence, meaning that such findings may not be conclusive. Hence, the discussion on cognitive processing will continue until researchers can devise an accurate instrument that measures the actual cognitive process, similar to the like of thermometer, which is used to measure temperature.

Existing evidence shows that the comprehension ability of an individual depends on working memory capacity (Schurer et al., 2020; Young, 2000). The larger the working memory, the more at ease the readers would have in attempting to comprehend the text. Nevertheless, the capacity of the working memory is limited, especially when the readers' working memory is strained. Just and Carpenter (1992) identified six capacity-constrained working memory factors in comprehension: syntactic complexity, linguistic ambiguity, selection and suppression mechanism variations, external memory load, text demands and time constraints. The more constrained the working memory is, the lower the comprehension level of the readers. This study, however, focused only on the last two factors mentioned, namely text demand and time constraints. In this study, text demand was equated to text difficulty, which was measured structurally using readability measures, while time constraints referred to the amount of time assigned to the participants in completing the task. The effects of these two factors would be translated from the performance of the readers on the reading comprehension tests.

However, Nuttal (1996) claimed that good readers should be comfortable with reading difficult texts, even in strenuous contexts, as they should be well-equipped to handle them. On this basis, the performance of readers would differ based on their proficiency of the readers.

Neroni et al (2019); Zimmerman et al (1992) found that regulating one's strategies can lead to academic success. This is also supported by Housand and Reis (2008), who found that learners tend to regulate the strategies using their existing experience, knowledge and skills. This means that the high-performing non-native readers would be even more likely to regulate the strategies in dealing with the text demand and time constraints. For that reason, how these good readers, as in this case high performing non-native readers, perform in the reading comprehension tests was the concern of this study.

Furthermore, Rahimi et al (2012) found that readers of different levels of intelligence would apply different strategies, while Byung-Hyun et al (2008) found that people may view and cope with difficult situations differently. Nevertheless, it was not known whether differences in the strategies could be found among the high-performing non-native English language readers since they were relatively similar in their abilities.

Hence, the primary purpose of this study was to identify the response of high-performing non-native English language readers on the structurally difficult text of reading comprehension tests. For that reason, the research questions of the study are as follows:

- i) What are the activities and strategies used by the readers?
- ii) What is the relationship between the strategies and the performance of the readers?

On this basis, the study investigated the activities and strategies used in dealing with structurally difficult texts. The study also identified successful strategies and examined their effects on the readers' performance.

Method

This study was based on several research designs. First and foremost, in collecting the data, a mixed method approach, specifically an embedded experimental model, was applied where the qualitative technique was embedded after the multiple interventions of the experiment (Creswell, 2014). In terms of the subject of the study, the study used a single group design as only the high-performing non-native English language readers were tested. The group was given multiple interventions where earlier interventions became the control of the latter intervention. Furthermore, the single-group experimental design would be more appropriate "to study the behaviour change" due to the multiple interventions (Gay et al., 2009). The study was an experiment in nature. However, the treatment was replaced with interventions in the form of a gradual increase of structurally difficult tests. Finally, a 3X3 factorial design was applied in administering the interventions on the subjects. The variables of time on task and text difficulties were factorised to create a regulated constant increase of difficulties at three levels of time on task and three levels of text difficulties. Table 1 below displays the factorial design of the study

Table 1
Factorial design of the study

3X3 Factorial design		Time on task		
		T ₁ (35 MIN)	T ₂ (25 MIN)	T ₃ (15 MIN)
Text Difficulty	D ₁	T ₁ D ₁	T ₂ D ₁	T ₃ D ₁
	D ₂	T ₁ D ₂	T ₂ D ₂	T ₃ D ₂
	D ₃	T ₁ D ₃	T ₂ D ₃	T ₃ D ₃

Subject, Population and Participants of the Study

The study involved the third-semester diploma students of Universiti Teknologi MARA Perlis who have completed two semesters of compulsory English courses. About 1500 reading proficiency tests were distributed among 32 English classes. However, only 1452 test papers were returned. These 1452 students who returned the test papers were regarded as the population of the third-semester diploma students. Table 2 below shows the gender distributions of the population of the study. It was found that the number of females was more than two folds the number of males.

Table 2

Gender distribution of the population

	Frequency	Percent
Male	443	30.5
Female	1009	69.5
Total	1452	100.0

In selecting the high-performing non-native English language readers from the population, the performance in the proficiency test was used as the basis. The study, at first, planned to use a criterion-reference approach to select high-performing non-native English language readers. This was considered as the score of 70% would place the score at the grade of B+ or 3.33 GPA. However, since the participants who breached 70% score in the proficiency test were very few, the study applied a norm-reference approach in selecting high-performing non-native English language readers. Hence, the normalised distribution of the population, as shown in Figure 1, was used. Although it can be argued that the use of normalised distributions can compromise the identification of the actual high-performing non-native English language readers, the approach ensured that they were the high-performing non-native English language readers for the tested population of the study (Flanagan et al., 2006). Based on the normalised distributions of the performance in the proficiency test, the top 3.9% of the population or 57 participants, were purposively identified and selected for the study.

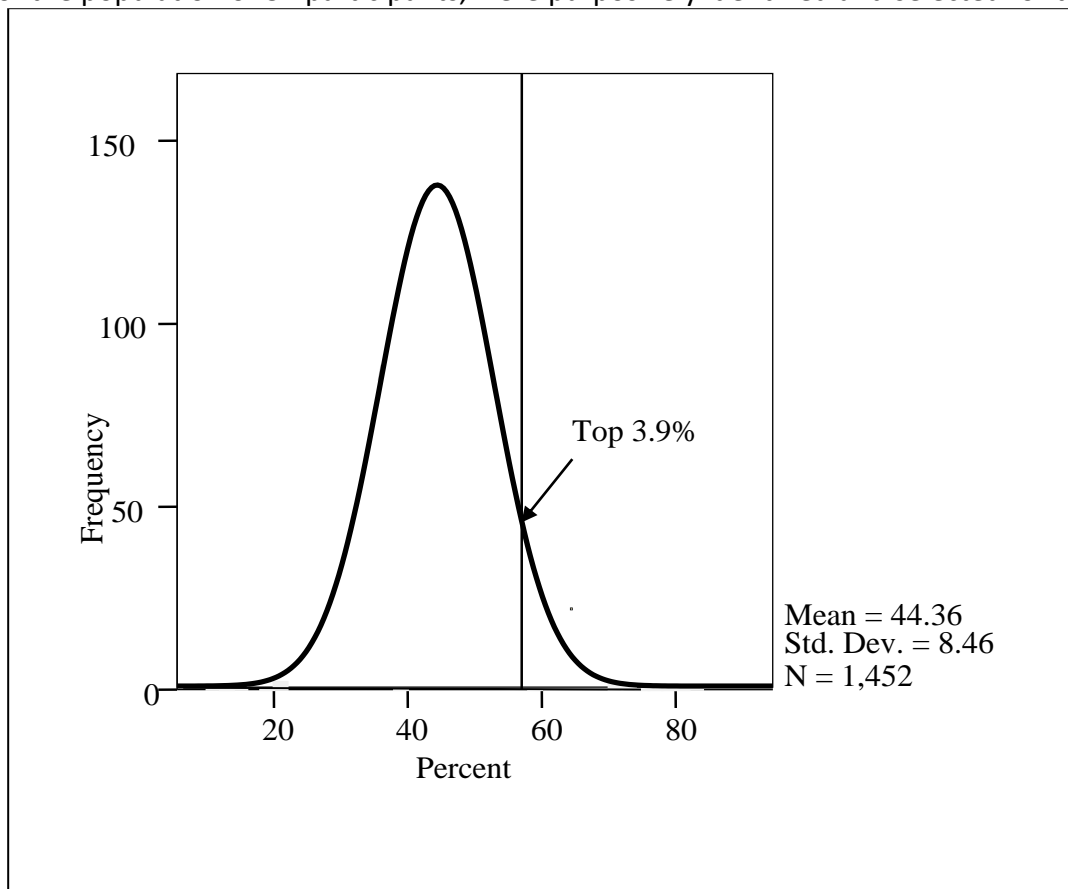


Figure 1: The Distribution of the Participants' Performance in the Proficiency Test

Instruments

Proficiency Test

In identifying the high-performing non-native English language readers, the readers' proficiency was measured using the actual MUET reading component, specifically the 2010 MUET reading test. The MUET test was deemed appropriate as it has been used as a standardised test to measure the proficiency of undergraduate students in Malaysia. Furthermore, Juliana and Abu Bakar (2013); Rethinasamy and Kee (2011) found that the MUET test was reliable and valid for measuring the proficiency of undergraduates. This study also found that the Cronbach alpha of the 45-item 2010 MUET reading test was at .810, indicating that the test was highly reliable.

Aside from the reliability of the test, the issue of familiarity with the test structure needs to also be considered in any test (Bachman, 1990; Leong, 2006). Since the population of the study was in their third semester, they should be familiar with college reading tests. On that basis, the performance of the population should not be affected by the structure of the test but should be influenced by the difficulty of the test, and their performance on the test would reflect their proficiency level. For that reason, using the actual 2010 MUET reading test to measure the reading proficiency level of the population was very appropriate.

Reading Comprehension Test

In attaining real rather than perceptual feedback of the strategies, the study provided the respondents with the actual stimulants in the form of reading comprehension tests.

To ensure the reliability and validity of the tests, the difficulties of the MUET reading tests were used as the basis for the difficulties of the tests since the MUET test was designed to meet the required standard of English for university students in Malaysia (MEC, 2006). As such, the structural difficulties of the 2010 MUET reading tests were analysed and measured with respect to the number of words used, the per cent of passive sentences, Flesch Reading Ease and Flesch Kincaid Readability Grade. Table 3 below shows the analysis of the text difficulty of the MUET tests.

Table 3

Analysis of text difficulty for Mid-year, Year-end and the combined difficulty for 2010 MUET reading tests

Elements of difficulties	Mid-year 2010	Year- end 2010	Combined difficulty for 2010
Number of texts analysed	5	5	10
Word count	532 – 764	471-810	471-808
Passive sentences	0 – 14%	4% - 26%	0 – 26%
Flesch Reading Ease	39.5 - 69.1	43.3 - 71.9	39.5 – 71.9
Flesch Kincaid Grade Level	7.1 - 13.0	6.8 -12.0	6.8 - 13

Table 4

Descriptions of difficulty levels of the texts used in the tests

No	Battery	Set	Time	No of Text	No of Items
1	Text Difficulty I (D ₁)	Time 1(T ₁)	35 minutes	2	20
		Time II(T ₂)	25 minutes	2	20
		Time III(T ₃)	15 minutes	2	20
2	Text Difficulty II (D ₂)	Time I (T ₁)	35 minutes	2	20
		Time II(T ₂)	25 minutes	2	20
		Time III(T ₃)	15 minutes	2	20
3	Text Difficulty III (D ₃)	Time 1(T ₁)	35 minutes	2	20
		Time II(T ₂)	25 minutes	2	20
		Time III(T ₃)	15 minutes	2	20

The validity of the tests was further compounded by ensuring that the texts used were non-specialised, which required little or no specialised background knowledge. The tests were validated by third-party language experts. The selected texts were structurally modified and adapted to match the level of the structural difficulty of the tests, as stated in Table 4.

Aside from the validity of the texts, the validity of the questions for the texts was also considered. This was achieved by using Barret's (1972); Day and Park (2005) taxonomy of questions. The first three levels of the taxonomy, namely literal, reorganisation and inferential questions, were used with the texts. The study used four literal, three reorganisation and three inferential questions making it a total of ten questions for each reading text. Table 5 shows the descriptions of the test batteries.

Table 5

The descriptions of the test batteries

Level of difficulty	Text Difficulty 1	Text Difficulty 2	Text Difficulty 3
Word count	400 - 499	500 - 599	600 - 699
Passive Sentences	15% - 25%	26% - 35%	36% - 45%
Flesch Reading Ease	51 - 56	45 - 50	39 - 44
Flesch-Kincaid grade levels	9.0-9.9	10.0-10.9	11.0-12.1

Reflective Feedback

Participants' reflective journal was meant to provide inputs on the activities and strategies they employed to cope with the difficult tests. The participants were asked to give inputs in either Malay or English language on how they managed with each set of reading comprehension tests at the end of each test. This would ensure the event that had just taken place was still fresh in their mind. The participants were asked general questions about the text and their approach. The use of questions enabled the participants to be more focused on the task (Bogdan & Biklen, 2007). The questions involved:

- i. Is the text difficult?
- ii. When you encounter difficulty, how do you cope with it? Was/Were it/they successful or unsuccessful?

Analysis

In identifying the activities and strategies of the readers, reflective feedback was analysed. The reflective feedback was taken from the qualitative response to the prompt mentioned

earlier. Similar responses in terms of activities were grouped and coined as coping activities. The activities matched Folkman and Lazarus's (1988) descriptions of coping strategies: confrontation, seeking social support, problem-solving, self-control, distancing, positive appraisal, accepting responsibility and escape or avoidance coping strategies (See Appendix on the classification of the activities). The classifications were then audited by a third party to ensure the reliability and validity of the classifications.

As the study involved qualitative data, only frequency scores can be obtained. However, the frequency scores from the nine tests would not be able to determine the activities and strategies used at Time 1, 2 or 3 as well as Text Difficulty 1, 2 or 3 individually. This was due to the combination of the tested variables in the tests. For that reason, a formula was applied so that only six scores were obtained from the nine tests (See Appendix on the conversion formula). The six scores represented 3 levels of Time on Task and 3 levels of Text Difficulties. The frequencies were then converted into a percentage.

Finding and Discussion

The Coping Activity and Strategies Used

As shown in Table 6 below, repeated reading was found to be the most dominant coping activity among the fourteen coping activities, with a mean of 51.9%. However, there was a significant drop in repeated reading coping activity at the highest time on task and text difficulty stressors. This indicated that some respondents opted for other coping activities when difficulty was optimum. Meanwhile, guessing the solution as a coping activity was the second most preferred activity, with the mean of 22.5%. There was a drop in the use of the activity at T₂ before an increase to 24.7% at T₃. This showed that the respondents chose guessing the solution as an option at a higher difficulty level. However, the table shows that the variations in the use of the strategy at D₁, D₂, and D₃ were too small to be considered significant. Table 6 also displays that the third most preferred coping activity was reducing the speed of reading. The data shows a drop in the use of the strategy at T₂ and D₂ before an increase at T₃ and D₃. The increase in the percentage of reducing speed activity at T₃ and D₃ appeared to complement the drop in the percentage of repeated reading activities.

It could also be seen that at T₃ and D₃, there was an increase in the percentage of asking friends for help compared to at T₂ and D₂. This also indicated that at a higher level of stressor asking friends for help was another option the high-performing non-native English language readers would use. In using dictionary, the table shows a gradual drop at Time factors but a steady increase could be observed at Text Difficulty factors. This shows that as the text became more structurally difficult, the use of dictionary became an alternative solution for high-performing non-native English language readers.

Nevertheless, Table 6 does not display consistent patterns in the application of problem-solving coping activities. This could be observed in skipping difficulties, reading word per word, searching for keywords, paraphrasing difficult structures, identifying main ideas, highlighting important sentences, comparing other sentences and focusing on the questions coping activities. Yet, the applications of these coping activities assisted these high-performing non-native English language readers in dealing with the factors of time and text difficulties. Such findings are in line with (Byung-Hyun et al., 2008).

The varieties of activities employed by the high-performing non-native English language readers describe how the readers would be able to continuously read and understand the texts despite the increase in the difficulty levels (Nuttal, 1995). The readers' ability to opt to different coping activities was unique as they chose the activities that they deemed to be

appropriate. This also indicated their abilities to self-regulate the activities to suit the levels of the texts.

Table 6
The coping activities and strategies used in percentage

Coping activity	Coping strategies	T ₁ %	T ₂ %	T ₃ %	D ₁ %	D ₂ %	D ₃ %	Mean
Reading repeatedly	Self-control	50.4	55.3	49.8	53.2	53.2	49.6	51.9
Reducing reading speed	Self-control	12.3	10.1	11.4	13.7	8.4	12.2	11.4
Reading word per word	Confrontation	0.4	1.4	0.5	1.3		0.9	0.8
Guessing the solution	Confrontation	22.4	20.3	24.7	21.9	23.2	22.6	22.5
Scanning for solution	Confrontation		0.5			0.4		0.2
Skipping difficulty part	Esc or avoid	4.5	3.2	3.2	1.7	5.5	3.9	3.7
Asking friends for help	Social support	3.7	5.5	5.9	5.6	3.0	5.7	4.9
Using dictionary	Social support	4.9	2.8	1.8	1.3	3.4	5.2	3.2
Searching for keywords	Prob solving			0.5	0.4			0.2
Paraphrasing difficult structures	Prob solving	0.4			0.4			0.1
Identifying main ideas	Prob solving	0.4		0.5		0.8		0.3
Highlighting important sentences	Prob solving	0.4				0.4		0.1
Comparing with other sentences	Prob solving	0.4	0.5		0.4	0.4		0.3
Focusing on the questions	Prob solving		0.5	1.8		1.3		0.6
TOTAL		100	100	100	100	100	100	100

Based on Folkman and Lazarus's (1988) ways of coping strategies, the coping activities of high-performing readers were classified into coping strategies. Table 7 shows five coping strategies that were used by the high-performing non-native English language readers. Self-control was found to be the most widely used coping strategy as the average use of the coping strategy stood at 63.3%. There was a small increase in the use of the strategy at T₂ before a drop at T₃. However, at Text Difficulty factor, the use of the strategy dropped at D₂ and before it stabilised at D₃. This indicated that some of the high-performing non-native English language readers felt that self-control coping strategy was not a good strategy when dealing with the

increase in difficulties. Confrontation strategy was in second place with the mean of 23.4%. The use of the strategy has been consistent in all the factors except T₃. This showed the continuous reliance of the high-performing non-native English language readers on confrontation coping strategies in dealing with the factors. The consistently strong use of self-control and confrontation coping strategies displayed the readers' ability to self-control and confront the texts despite being strained. On this basis, these readers were regulating their own reading and handling of the factors. This reflected Nuttal's (1995) descriptions of good readers.

Moreover, the social support coping strategy was the third most favoured coping strategy with the mean of 8.1%. The table showed that the support coping strategy was the strongest at D₃, with the score of 10.9%. The use of escape or avoidance coping strategy was found to be the second lowest coping strategy used. Though there was no clear pattern in terms of the use of the strategy, the highest used of the strategy was at D₂ before it dropped at D₃. Finally, the problem-solving coping strategy was found to be the least preferred strategy.

Based on the findings, Table 7 shows no clear pattern in the use of coping strategies. This indicated that the high-performing non-native English language readers employed diverse strategies in dealing with the factors. This appeared to be in support of Nuttal's (1995) virtuous cycle of good readers. The small variations that could be observed among different factors indicated these high-performing non-native English language readers have already developed and established the strategies that they would likely use when dealing with difficult texts.

Table 7

The coping strategies of the high-performing non-native English language readers

Coping strategies	T ₁ %	T ₂ %	T ₃ %	D ₁ %	D ₂ %	D ₃ %	Mean
Self-control	62.7	65.4	61.2	67	61.6	61.7	63.3
Confrontation	22.8	22.1	25.1	23.1	23.6	23.5	23.4
Escape or avoidance	4.5	3.2	3.2	1.7	5.5	3.9	3.7
Social support	8.6	8.3	7.8	6.9	6.3	10.9	8.1
Problem solving	1.5	0.9	2.7	1.3	3	0	1.6
TOTAL	100	100	100	100	100	100	100

The Success of the Coping Strategies

Based on Table 8, the use of a confrontation coping strategy showed higher results for the lower text difficulty factors with the mean of D₁ at 61.79% compared to Time on Task factors. On the other hand, a higher mean score could be observed from the use of the strategy for the highest Time on Task factors compared to Text Difficulty factors. Similar results could also be observed with social support and self-control coping strategies. In terms of problem-solving and escape coping strategies, the lowest time factors displayed higher mean score than the lowest Text Difficulty factors.

Table 8 also showed that escape coping strategy was most successful at T₁ factor with the mean score 62.63%. Social support coping strategy was successful at T₂, T₃, D₁ and D₂ with mean scores of 53.7%, 46.67%, 61.79% and 56.61%, respectively, whereas the self-control coping strategy was most successful at D₃ with the mean score at 36.71%. Nevertheless, the variations in the mean scores of the stressors in relation to the coping strategies were small.

This indicated that all the coping strategies used can give favourable outcome to reading and that there was no one strategy that could suit all situations.

Nevertheless, all the strategies that the high-performing non-native English language readers used can be effective in coping with the factors. Though some strategies may have a slight edge over others, what seems to be more significant is how one can use the strategies effectively. In other words, self-regulation plays a major role in determining how well readers can cope with the texts. The more knowledge they have, the more likely they will be able to regulate the texts better (Housand & Reis, 2008). The high-performing non-native English Language readers, as used in this study, should be able to apply the knowledge better than other low-performing readers.

Table 8

The mean scores of the high-performing non-native English language readers in the comprehension (stress) tests based on the coping strategies

	T ₁	T ₂	T ₃	D ₁	D ₂	D ₃
Confrontation	60	52.82	42.85	61.79	56.61	35.71
Social support	62.04	53.7	46.67	64.38	60.19	36.04
Problem- solving	57.6	-	37.86	56.67	50.28	36.33
Self-control	60.04	52.54	42.56	61.74	55.36	36.71
Escape	62.63	50.63	41.67	62	56.67	36.61

Conclusions

The study's findings indicated how high-performing non-native English language readers (good readers) performed during difficult situations. The study has shown that the coping activities and strategies were significant in the sense that it was a reflection of the readers' ability. Such an outcome proved that Nuttal's (1996) virtuous cycle of good readers is a true description of high-performing readers. Griffiths (2008); Rubin (1975) asserted that information on the activities and strategies used by good learners (as in this case high-performing non-native English language readers) can be used as models for other readers. The study also shows that despite being good readers, they have their limitations. Nevertheless, the opponent of this idea may argue that this study used norm-referenced sampling rather than criterion-referenced sampling, which cannot be used as a representation of other high-performing non-native English language readers. However, the ability these readers displayed while coping with difficult texts can be used to initiate further exploration in the field of coping activities and strategies among high-performing non-native English language readers.

Hence, future research should be encouraged to select high-performing non-native English language readers using criterion-referenced sampling. Such analysis can be used to verify the findings of this study.

Furthermore, their efforts to push themselves beyond the threshold can be observed from the activities and strategies they employ in reading texts of gross difficulties. In fact, readers or learners need to be exposed to and familiar with the different activities and strategies to achieve a new threshold height. Their knowledge and skills of the activities and strategies would enable them to move beyond their threshold. This would make them more resilient to cope with any future demands.

The study also found that readers with a certain control over their language are more likely to self-regulate the strategies for coping with difficult texts. This perhaps summarised the

performance of the high-performing non-native English language readers (good readers) when dealing with difficult situations. Such a finding supported Zimmerman et al (1992) study. Therefore, it is important that readers are encouraged to regulate their reading according to their ability and skills in order to become better readers.

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APPENDIX

Classification of the coping strategies, examples of general coping activities and cited coping activities of the high-performing non-native English language readers.

Coping Strategies	Examples of general coping activities (Folkman & Lazarus, 1988)	Cited Activities by HPR
Confrontation	Focusing on the cause Taking a big chance	Reading word byword Scanning for solution Guessing the solution
Distancing	Refusing to think Treating as if nothing happen	
Self-controlling	Trying not to rush Planning in mind Considering what experts would do	Reading repeatedly Reducing reading speed
Seeking social support	Sharing the situation with	

	someone else Seeking advice Getting professional help	Asking friends for help Using dictionary
Accepting responsibility	Criticising oneself Doing something to make up	
Escape-avoidance	Hoping for miracle Avoiding others Fantasising the outcome	Skipping difficult part
Planned problem solving	Knowing what to do and putting it to work Concentrating on task	Paraphrasing difficult structures Comparing with other sentences Focusing on the questions Identifying main ideas Highlighting important sentences Searching for keywords
Positive reappraisal	Making improvement Finding new inspiration	

The Conversion Formula

$$\text{Time 1} = T_1D_1 + T_1D_2 + T_1D_3$$

$$\text{Time 2} = T_2D_1 + T_2D_2 + T_2D_3$$

$$\text{Time 3} = T_3D_1 + T_3D_2 + T_3D_3$$

$$\text{Difficulty 1} = T_1D_1 + T_2D_1 + T_3D_1$$

$$\text{Difficulty 2} = T_1D_2 + T_2D_2 + T_3D_2$$

$$\text{Difficulty 3} = T_1D_3 + T_2D_3 + T_3D_3$$