

UNIVERSITI TEKNOLOGI MARA

**READING STRATEGIES OF HIGH AND LOW
ACHIEVERS IN ENGLISH FOR SCIENCE AND
TECHNOLOGY (EST):
A CASE STUDY OF FORM FOUR STUDENTS**

NURSHAMSHIDA BINTI MD SHAMSUDIN

Thesis submitted in fulfillment of the requirements for the degree of
Master of Education

Faculty of Education

JANUARY, 2009

ABSTRACT

The case study investigates high and low achievers' use of content area reading strategies in Science in the English as a second language context (ESL). Participants involved two Form Four students in the high achiever and low achiever groups respectively. The conceptual framework for this study was built based on the integration of strategies in content area reading strategies classified based on three reading stages; pre-reading, while and post-reading strategies (Michael, 2003; Laurie, 2007) and three general bilingual reading strategies (Upton, 1997). Four instruments namely; student diaries, observations, think aloud protocol and retrospective interviews, were used in the study to uncover the strategies of the high and low achievers in reading the Science text in the ESL context. Findings revealed that high achievers applied more reading strategies, s ($s=33$) as compared to the low achievers ($s=24$). At pre-reading stage, high achievers applied more strategies ($s=7$) than low achievers ($s=3$). At the while reading stage, high achievers still applied more reading strategies ($s=22$) than low achievers ($s=18$). Finally at the post-reading stage, high achievers applied more strategies ($s=4$) compared to low achievers ($s=3$). Although the low achievers applied similar strategies used by the high achievers, the frequency of using the strategies were generally low as compared to the high achievers and they were not capable of applying these strategies effectively. The implications of the study include the need for the Science reading strategies to be explicitly taught and trained amongst students who are low achievers. STREAM is an acronym to the Science text reading model. It is a contribution from this study to the Science education as well as to the ESL context. The reading model could benefit Science teachers and students in order to read and learn Science texts effectively.

ACKNOWLEDGEMENTS

In the name of Allah, the Most Gracious and the Merciful who has given me the strength and courage to complete my master by research.

Working on this study has been a very enlightening and gratifying experience for me.

First and foremost my special thanks to the present Dean of the Faculty of Education Prof. Madya Dr. Normah Abdullah and the former Dean, Dr. Zainab Hj Mohd. Noor for enabling me to pursue my sponsorship under the UiTM Young Lecturer's Scheme.

My deepest gratitude and appreciation to my dear supervisor, Dr. Faizah Abdul Majid for the workstation in postgraduate lounge, the precious experience gained by following her to presentations in a few conferences and the time spent to give me the most valuable ideas and guidance towards the completion of this study.

To my beloved parents, En. Hj Md Shamsudin Md Shah and Pn Hj Rossidah Rahiman for their undying love, courage and continues prayers for me. To my beloved brother Muhammad Hadi and my sister Nurammira for helping me with the technical part of this study.

To my dearest husband Kapt. Salehuddin Bin Abdul Kadir, thank you very much for your patience and financial support.

Last but not least to my friend Hamidah Ismail for her time in editing work of this study and to every single individual who has contributed directly or indirectly towards the completion of this thesis. I say, thank you very much to every single one of you.

TABLE OF CONTENTS

	Page
ABSTRACT	ii
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	viii
LIST OF FIGURES	xii
CHAPTER 1: INTRODUCTION	
1.1 Advance Organizer	1
1.2 Introduction	1
1.3 Setting the Context	2
1.3.1 English as a Second Language Education in Malaysia	2
1.3.2 Science Education Curriculum in Malaysia	3
1.3.3 Science in English (Second Language)	4
1.4 Statement of the Problem	5
1.5 Purpose of the Study	8
1.6 Research Objectives	8
1.7 Research Questions	9
1.8 The Conceptual Framework	10
1.9 Significance of the Study	13
1.10 Limitations of the Study	13
1.11 Operational Definitions	14
1.12 Summary	16
CHAPTER 2: REVIEW OF RELATED LITERATURE	
2.1 Advance Organizer	17
2.2 Second Language Learners	17
2.2.1 Language Acquisition Theory	18
2.2.2 Learning Strategies among Second Language Learners	19

2.3	Reading	22
	2.3.1 Definitions of Reading	22
	2.3.2 Interaction through Schema	23
	2.3.3 Models of Reading	24
	2.3.4 Reading in the Second Language	26
2.4	Reading Strategies amongst Second Language Learners	28
2.5	Science text and Literacy	28
	2.5.1 Science Texts	29
	2.5.2 Science Text Reading Difficulties	33
	2.5.3 Science Text Reading Strategies	34
2.6	Findings on Previous Studies	39
2.7	Summary of Researches Reviewed	46
2.8	The Present Study	50
2.9	Summary	53

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGIES

3.1	Advance Organizer	54
3.2	Introduction	54
3.3	The Choice of A Case Study	55
	3.3.1 Application of a Case Study Methodology	57
	3.3.2 Case Study Design	58
	3.3.3 Conduct of a Case Study	59
3.4	Preparation for data collection	60
	3.4.1 The Setting	60
	3.4.2 Subjects Offered to the Science Stream Students	61
	3.4.3 Research Participants	61
	3.4.4 Negotiating Access	63
	3.4.5 The Pilot Study	64
	3.4.6 The Reading Material	67
	3.4.7 The Syllabus	67
	3.4.8 The Reading Module	69
3.5	The Instruments	70