APPENDIX A1

The Student’s Interview

Class : 3 Alpha – Excellent student

The subject : The subject is a Chinese, female aged 15 and of excellent proficiency level. She is the best student in Science in overall form three classes. She is from a Chinese educated background and comes from a Chinese school.

I : Good morning S

S : Good morning teacher

I : As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?

S : Yes teacher.

I : How many years have you been learning Science in English?

S : 3 years.

I : What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?

S : As 95 – 97 marks.

I : How would you categorize yourself in understanding English language?

S : I can understand well though my speaking is not very fluent because I am from Chinese school since primary.

I : Do you find any language difficulties in understanding Science in English?

Why? Give some examples?

S : No, because I consistently revise Science in English though I don’t use a wide vocabulary in my daily conversation. I pay full attention in class and study the way teacher teach Science topic in English. Everyday I revise and do more practice in understanding Science in English.
I : What is your learning strategy in learning Science in English?

S : I revise the chapter taught in class on the same day at home. I also prepared in advance for the following lesson that teacher will teach in the next class. I prepare short notes, do mind map and memorize most facts as it helps in writing the answers in paper 2 because sometimes I make grammar mistakes in long sentence structures. I also take tuition for Science and always ask my tuition teacher for further understanding on a topic. A lot of past year, questions helped me in answering exam questions.

I : What is your opinion towards the implementation of Learning Science in English? Do you agree, disagree? Why? Give your reasons.

S : I agree because it is very beneficial and English is an International language. This will help me to further my studies in university in overseas as I have learned Science in English at an early stage in Malaysia.

I : Alright. Thank you for your co-operation.

S : Thank you teacher.
The Student’s Interview

Class: 3 Alpha – Average student

The subject: The subject is a Malay, male aged 15 and of average proficiency level. He has maintained his scores in Science subject. He is from Malay educated background and comes from a National school.

I: Good morning S

S: Good morning teacher

I: As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?

S: Yes teacher.

I: How many years have you been learning Science in English?

S: 3 years.

I: What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?

S: Initially were about 70 - 80 marks. Then I dropped because there was too much to study and remember in Form Two. Then I worked hard to be in the first class and at present, my scores are back to 70-80.

I: How would you categorize yourself in understanding English language?

S: Ok. Good I guess.

I: Do you find any language difficulties in understanding Science in English? Why? Give some examples?

S: In the beginning was difficult because I am from Malay medium and at home, my family and I speak Bahasa Malaysia. Then slowly I got used to it as Science, Mathematics was in English and I work hard to improve especially the
scientific terms in Science are a lot. Then err….hmm…..writing long sentences to explain the definition, theory and results of experiments was difficult. I practice more. Now is ok.

I : What is your learning strategy in learning Science in English?
S : I use other methods to understand the subject instead of only reading and writing notes. I watched the CD that comes together with the textbook and other Science related CD’s in reference books. I also participate in science quizzes and do mind map for revision. My father is a lecturer in University so he gets me encyclopedia, other science books for my extra understanding. I am lazy to read all but I will refer to them when there is relevant topic or presentation.

I : What is your opinion towards the implementation of Learning Science in English ? Do you agree, disagree ? Why ? Give your reasons.
S : It is very good because we can keep up with the development and modernization of today’s world and contribute to our country’s development with the knowledge we get.

I : Alright. Thank you for your co-operation.
S : Thank you teacher.
APPENDIX A3

The Student’s Interview

Class : 3 Alpha – Below average student

The subject: The subject is a Malay, female aged 15 and of below average level.

Her scores are of average level with little improvement. She is from a Malay educated background and comes from a Chinese school.

I: Good morning S

S: Good morning teacher

I: As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?

S: Yes teacher.

I: How many years have you been learning Science in English?

S: 3 years.

I: What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?

S: My marks are always 50-60.

I: How would you categorize yourself in understanding English language?

S: Ok. Not very good.

I: Do you find any language difficulties in understanding Science in English? Why? Give some examples?

S: Ya, sometimes the teacher is so fast for me. I cannot follow her fast because always read and understand slowly and ask my friend to explain to me some words and sentences in Science Textbook. So…the Science words are also hard pronounce sometimes and to remember in exam.

I: What is your learning strategy in learning Science in English?
S : What is learning strategy teacher?
I : It is like how you study Science. What is your way of learning Science?
S : Oh ok. I attended tuition to understand better, what teacher teach in the class. I ask my tuition teacher always my doubts. Then I work with my best friend because she will explain me what I do not understand. At home I do revision. I make short notes so that easy to remember.

I : What is your opinion towards the implementation of Learning Science in English? Do you agree, disagree? Why? Give your reasons.
S : I agree because it improves my English language and later in higher studies everything is in English, so I can do better.

I : Alright. Thank you for your co-operation.
S : Thank you teacher.
The Student’s Interview

Class : 3 Alpha – Weak student

The subject: The subject is a Malay, female aged 15 and have moderate proficiency in English. She comes from a sub-urban living environment.

I: Good morning Sy

S: Good morning teacher

I: As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?

S: Yes teacher.

I: How many years have you been learning Science in English?

S: 3 years.

I: What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?

S: 40 - 55 marks.

I: How would you categorize yourself in understanding English language?

S: Good

I: Do you find any language difficulties in understanding Science in English? Why? Give some examples?

S: No, because my English is ok. I can speak simple English. I have no problem learning Science in English but I am not happy the way my teacher teach Science.

I: What is your learning strategy in learning Science in English?

S: I will use dictionary. I use reference books to study Science.

I: What is your opinion towards the implementation of Learning Science in English? Do you agree, disagree? Why? Give your reasons.
S : It is good for the students to master English so that they won't face difficulties to continue study abroad.

I : Alright. Thank you for your co-operation.

S : Thank you teacher.
APPENDIX B1

The Student’s Interview

Class : 3 Beta – Excellent student

The subject : The subject is a Malay, female aged 15 and of excellent proficiency level. He is the best student for science in his class. He has English background and comes from National school.

I : Good morning S

S : Good morning teacher

I : As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?

S : Yes teacher.

I : How many years have you been learning Science in English?

S : 3 years.

I : What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?

S : 80 – 88 marks.

I : How would you categorize yourself in understanding English language?

S : Fluent because I speak in English with my parents at home.

I : Do you find any language difficulties in understanding Science in English? Why? Give some examples?

S : No, because I find learning Science in English is easier than Bahasa Malaysia. The only problem is it’s full of scientific terms to be memorized in each chapter. But that’s ok as time pass by because I practice more worksheets and do revision.

I : What is your learning strategy in learning Science in English?
S : Hmm….I like reading Science fiction book but for science in school I do lots of mind map and while revising I keep-asking questions myself as it’s easier to remember. I like to ask question in class to teacher to probe more knowledge in Science. My uncles and relatives work in Science knowledge in English. That interest me and I read more Science books.

I : What is your opinion towards the implementation of learning science in English? Do you agree, disagree? Why? Give your reasons.

S : I agree because it is a wise decision by the Government to improve the standard of English and produce more scientific knowledge generation.

I : Alright. Thank you for your co-operation.

S : Thank you teacher.
The Student’s Interview

Class : 3 Beta – Average student

The subject : The subject is a Chindian, female aged 15 and of good proficiency level. She has slightly improved in her Science subject. She possess English knowledge well and comes from a National school.

I : Good morning S

S : Good morning teacher

I : As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?

S : Yes teacher.

I : How many years have you been learning Science in English?

S : 3 years.

I : What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?

S : Hmm…around 70 marks.

I : How would you categorize yourself in understanding English language?

S : I am from English background as my parents speak English and I am brought up speaking English as first language.

I : Do you find any language difficulties in understanding Science in English? Why? Give some examples?

S : No. I prefer in English. however, I cannot memorize the concepts, definition because there are many chapters from form one to form three. However, I can explain well in English even if I am not sure the answer.

I : What is your learning strategy in learning Science in English?
S: I like doing mind map for every chapter and do revision consistently. But as I said earlier it’s a lot to remember. I try doing lot of workbooks to get used to with exam type questions.

I: What is your opinion towards the implementation of learning Science in English? Do you agree, disagree? Why? Give your reasons.

S: In my opinion, I think that is a very good decision as we are studying the important subject in an international language. It would be easier when students move overseas for higher education.

I: Alright. Thank you for your co-operation.

S: Thank you teacher.
APPENDIX B3

The Student’s Interview

Class: 3 Beta – Below average student

The subject: The subject is a Malay, female aged 15 and of below average level. Her performance is of the same level. She is form Malay educated background and comes from National school.

I: Good morning S

S: Good morning teacher

I: As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?

S: Yes teacher.

I: How many years have you been learning Science in English?

S: 3 years.

I: What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?

S: 60 marks.

I: How would you categorize yourself in understanding English language?

S: I am from Malay medium in primary but my English is good too.

I: Do you find any language difficulties in understanding Science in English? Why? Give some examples?

S: Difficulty… like writing proper sentence structure explaining the Science concept because it’s different compared to English essay. English composition is more of relax topic but in science they use lots of scientific term and names to remember and spell properly.

I: What is your learning strategy in learning Science in English?
S : Learning strategy?

I : Learning Strategy is your method of studying Science subject and preparing for the subject.

S : Oh ! I normally revise at home after school. I do short notes. But I prefer to ask my teacher after lesson because I need slow and repeated explanation of the topic that was taught. I also take tuition and my tuition notes are helpful in understanding more.

I : What is your opinion towards the implementation of learning Science in English? Do you agree, disagree? Why? Give your reasons.

S : I agree. Although in the beginning was shocked and difficult but then I am used to it. It is good as it improve the English language.

I : Alright. Thank you for your co-operation.

S : Thank you teacher.
The Student’s Interview

Class : 3 Beta – Weak student

The subject : The subject is a Malay, male aged 15 and has modest language ability.
He comes from an urban living area.

I : Good morning Fa
S : Good morning teacher

I : As I have informed you earlier, this interview is related to my master’s research study and the information is kept confidential. So can we start?
S : Yes teacher.

I : How many years have you been learning Science in English?
S : 3 years.
I : What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?
S : As 40 - 58 marks.

I : How would you categorize yourself in understanding English language?
S : Good I guess.

I : Do you find any language difficulties in understanding Science in English?
Why? Give some examples.
S : No, I can understand. The only problem I see is the way the teacher is teaching is not enjoyable. I also have disturbance in class with some students.

I : What is your learning strategy in learning Science in English?
S : Tuition.

I : What is your opinion towards the implementation of Learning Science in English? Do you agree, disagree? Why? Give your reasons.
S : O.K I guess. I agree that we should learn Science in English because it is easier to understand.

I : Alright. Thank you for your co-operation.

S : Thank you teacher.
The Student’s Interview

Class : 3 Delta – Excellent student

The subject : The subject is a Chinese, male aged 15 and of excellent proficiency level. He is the best student for science in his class. He is from a Chinese educated background and comes from a Chinese school.

I : Good morning S

S : Good morning teacher

I : As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?

S : Yes teacher. No problem.

I : How many years have you been learning Science in English?

S : 3 years.

I : What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?

S : 80 – 85 marks.

I : How would you categorize yourself in understanding English language?

S : Excellent. I love English.

I : Do you find any language difficulties in understanding Science in English? Why? Give some examples?

S : No, because I am from English background. English is not a problem for me. Science involves lots of scientific terms and complex sentence structure. Therefore, I need to study the content well to answer in exam especially the paper 2 writing. (Structured Questions).
I : What is your learning strategy in learning Science in English?

S : I revise the chapter taught in class on the same day at home. I also prepare in advance the next sub topic that teacher will teach in next class. Most of the time I share information and notes with my friends in 3 Alpha because we can discuss and argue more on the science answers. I also have home tuition for Science to understand the important topics and content of each topic well.

I : What is your opinion towards the implementation of learning science in English? Do you agree, disagree? Why? Give your reasons.

S : I agree. It is time for us to keep up with the world’s peace. Learning science in English is a big step to ensure students have a wider scope of career in the future and contribute to our country’s development.

I : Alright. Thank you for your co-operation.

S : Thank you teacher.
The Student’s Interview

Class: 3 Delta – Average student

The subject: The subject is a Malay, male aged 15 and of average proficiency level. He has maintained his score in exam. He is from Malay educated background and comes from National school.

I: Good morning S

S: Good morning teacher

I: As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?

S: Yes teacher.

I: How many years have you been learning Science in English?

S: 3 years.

I: What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?

S: 65–70 marks.

I: How would you categorize yourself in understanding English language?

S: Very good as I speak English with my family members.

I: Do you find any language difficulties in understanding Science in English? Why? Give some examples?

S: For science, I have difficulty to explain the concept because it is hard to remember the scientific terminologies and explain in scientific language especially the experiment or the function of human body parts.

I: What is your learning strategy in learning Science in English?
S: I ask my sister, she is in science stream. She will explain the concepts easily for me. I also make short notes. I practice a lot of workbook to get used to it with questions especially in paper 2.

I: What is your opinion towards the implementation of learning science in English? Do you agree, disagree? Why? Give your reasons.

S: I agree, it’s a good move to upgrade standard of English and helps in future.

I: Alright. Thank you for your co-operation.

S: Thank you teacher.
APPENDIX C3

The Student’s Interview

Class : 3 Delta – Below average student

The subject : The subject is a Chinese, female aged 15 and of below average proficiency level. She has slightly dropped in her performance. She is from Chinese educated background and comes from a Chinese school.

I : Good morning S
S : Good morning teacher

I : As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?
S : Yes teacher.

I : How many years have you been learning Science in English?
S : 3 years.

I : What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?
S : 55-60 marks, but I get less than 55.

I : How would you categorize yourself in understanding English language?
S : Ok. I am from Chinese background but always speak English to everyone although got lot of grammar mistake.

I : Do you find any language difficulties in understanding Science in English?
Why? Give some examples?
S : Sometimes, because science language is very difficult. Need lot of memorizing. Lot of science words to explain the theory and write long sentences in paper 2.

I : What is your learning strategy in learning Science in English?
S : I do short notes. I go tuition center and learn more too. But I always do group
study so that I can understand more with my friends.

I : What is your opinion towards the implementation of learning science in English? Do you agree, disagree? Why? Give your reasons.

S : Good. I can improve my English and be good in Science.

I : Alright. Thank you for your co-operation.

S : Thank you teacher.
APPENDIX C 4

The Student’s Interview

Class : 3 Delta – Weak student

The subject is a Malay student, female aged 15. She hails from sub-urban living area and able to speak English modestly.

I : Good morning Iz

S : Good morning teacher

I : As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?

S : Yes teacher.

I : How many years have you been learning Science in English?

S : 3 years.

I : What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?

S : 45 – 60 marks

I : How would you categorize yourself in understanding English language?

S : Average.

I : Do you find any language difficulties in understanding Science in English? Why? Give some examples?

S : Sometimes because there certains words that doesn't have meaning in Bahasa Malaysia. I don't understand few words in Science.

I : What is your learning strategy in learning Science in English?

S : I cannot understand.

I : I mean the way you study for exam.

S : Oh ! I study at home myself.
I : What is your opinion towards the implementation of Learning Science in English? Do you agree, disagree? Why? Give your reasons.

S : It is good because we can prepare ourselves for the future.

I : Alright. Thank you for your co-operation.

S : Thank you teacher.
APPENDIX D1

The Student’s Interview

Class : 3 Sigma – Excellent student

The subject: The subject is a Chinese, female aged 15 and of excellent proficiency level. She is the best student in science in her class. She is from an English educated background and comes from a National school.

I : Good morning S

S : Good morning teacher

I : As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?

S : Yes teacher.

I : How many years have you been learning Science in English?

S : 3 years.

I : What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?

S : 70 to 80 marks.

I : How would you categorize yourself in understanding English language?

S : I speak better in English.

I : Do you find any language difficulties in understanding Science in English? Why? Give some examples?

S : Language is with me as I communicate in English often. It’s only I don’t understand what the teacher is trying to say because she has poor language, wrong pronunciation and makes lots of grammar mistake.

I : What is your learning strategy in learning Science in English?

S : I go for home tuition for Science and Mathematics. I clear my doubt with my
tuition teacher as he explains well in English. I make short notes, mind map and revise according to my timetable for every chapter, as Science is important in PMR.

I : What is your opinion towards the implementation of learning science in English? Do you agree, disagree? Why? Give your reasons.

S : It is a very good implemented by government. The students would be able to excel not only locally but also internationally due to the mastery of this international language. They would gain the ability to understand and convey certain knowledge obtained through the Science subject. But teachers should also be well equipped with the knowledge and language as they impart the knowledge and language to students. So teachers should also be on par with the decision in teaching Science in English.

I : Alright. Thank you for your co-operation.

S : Thank you teacher.
APPENDIX D2

The Student’s Interview

Class : 3 Sigma – Average student

The subject: The subject is a Malay, female aged 15 and of average proficiency level. She has slightly improved in her scores in Science. She is from Malay educated background and comes from a National school.

I : Good morning S

S : Good morning teacher

I : As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?

S : Yes teacher.

I : How many years have you been learning Science in English?

S : 3 years.

I : What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?

S : 60 marks.

I : How would you categorize yourself in understanding English language?

S : I come from Malay medium and my English is just ok.

I : Do you find any language difficulties in understanding Science in English?

Why? Give some examples?

S : Yes in writing sentences explaining science theory or concept. I sometimes forget the definition that I memorize make me no idea to write in English.

I : What is your learning strategy in learning Science in English?

S : Learning strategy means what teacher?
I : Learning Strategy is the way in which you prepare the science subject, the content and the language while learning.

S : Okey…. I pay attention to what the teacher say in class but the teacher speak softly like to herself. When I ask the teacher, again also I understand a bit and ask teacher to explain in Bahasa Malaysia again so that I can understand. At home, I do short notes for every topic and memorize most topic. I also follow extra class for science in school and discuss with my friends on important topics and ways to answer.

I : What is your opinion towards the implementation of learning science in English? Do you agree, disagree? Why? Give your reasons.

S : I agree because now important subjects like Science and Maths are in English like over seas students. So I can improve myself to international student’s level in Science and Maths.

I : Alright. Thank you for your co-operation.

S : Thank you teacher.
APPENDIX D3

The Student’s Interview

Class : 3 Sigma – Below Average student

The subject : The subject is a Indian, female aged 15 and of average proficiency level. She has a good command of language but is quite weak in Science. She is from Malay educated background and comes from a National school.

I :  Good morning S
S :  Good morning teacher

I :  As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?
S :  Yes teacher.
I :  How many years have you been learning Science in English?
S :  3 years.
I :  What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?
S :  About 50 to 55 marks teacher.
I :  How would you categorize yourself in understanding English language?
S :  My English is good and I speak English to all my friends besides Malay.
I :  Do you find any language difficulties in understanding Science in English?
Why? Give some examples?
S :  In classroom for science subject, I cannot pick up quickly what the teacher is explaining because she goes talking from the textbook and refer only to textbook. So I just listen to what she say and cannot pay full attention to her lesson. The science subject also teacher has lot of scientific words to remember and explain theory in exam. That is a bit difficult teacher.
I : What is your learning strategy in learning Science in English?

S : What is Learning strategy teacher?

I : It is your way of learning science and preparing the subject for exam.

S : Oh, sorry teacher. I never heard that word. I rely on my tuition teacher because she teach me step by step the definition, concept and stress the important aspect only in a topic. So I only revise on that and do mind map. I practice a lot of workbook and check with my sir in tuition.

I : What is your opinion towards the implementation of learning science in English? Do you agree, disagree? Why? Give your reasons.

S : I agree because English is an important language in the world and by learning science in English our standard will be the same like students learning science in overseas.

I : Alright. Thank you for your co-operation.

S : Thank you teacher.
The Student’s Interview

Class : 3 Sigma – Weak student

The subject is a Malay student, female aged 15. She hails from rural living area. Her language ability is quite weak.

I : Good morning Ma

S : Good morning teacher

I : As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?

S : Yes teacher.

I : How many years have you been learning Science in English?

S : 3 years.

I : What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?

S : 40 -50 marks

I : How would you categorize yourself in understanding English language?

S : Less than average.

I : Do you find any language difficulties in understanding Science in English? Why? Give some examples?

S : I prefer in English as I've been studying in English. But the teacher is so boring cause teacher didn't make a strict attention and didn't do activity.

I : What is your learning strategy in learning Science in English?


I : What is your opinion towards the implementation of Learning Science in English? Do you agree, disagree? Why? Give your reasons.
S: Seriously ok. I agree but teacher must take very strict attention to pupil.

I: Alright. Thank you for your co-operation.

S: Thank you teacher.
The Student’s Interview

Class : 3 Omega – Excellent Student

The subject: The subject is a Malay, female aged 15 and of excellent proficiency level. She is the best student in science in her class. She is from an English background and comes from a National School.

I: Good morning S

S: Good morning teacher

I: As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?

S: Yes teacher.

I: How many years have you been learning Science in English?

S: 3 years.

I: What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?

S: 70 to 75 marks.

I: How would you categorize yourself in understanding English language?

S: Excellent as I am from English background.

I: Do you find any language difficulties in understanding Science in English? Why? Give some examples?

S: English is not a problem for me but the science concept is heavy and wordy. I need to explain in scientific language and involves lot of specific science terms and meaning. Above all the teacher’s prefers to use Bahasa Malaysia to explain as she is not confident of her language but I am better in English. Teacher’s reads word by word from textbook for English and never had explained in her own words the
experiment or theories.

I : What is your learning strategy in learning Science in English?

S : I always revise the topic taught on the day at home and highlight key words. I make a diagram or table and use mind map to remember theories, definition and concepts. I go for tuition and work on many exercise questions.

I : What is your opinion towards the implementation of learning science in English? Do you agree, disagree? Why? Give your reasons.

S : I agree because it is very beneficial and English is an international language. This will help me to further my studies in university in overseas as I have learned Science in English at an early stage in Malaysia.

I : Alright. Thank you for your co-operation.

S : Thank you teacher.
APPENDIX E2

The Student’s Interview

Class : 3 Omega – Average student

The subject : The subject is a Indian, male aged 15 and of average proficiency level. He has average level of score in science subject. She is from a Malay educated background and comes from a National school.

I : Good morning S
S : Good morning teacher

I : As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?
S : Yes teacher.

I : How many years have you been learning Science in English?
S : 3 years.

I : What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?
S : As 50 to 60 marks.

I : How would you categorize yourself in understanding English language?
S : Good.

I : Do you find any language difficulties in understanding Science in English? Why? Give some examples?
S : Yes, my problem is the way teacher explain the science concept. She herself does not know lot of science words and terms. She what she and explains in Malay better so I listen what she say, as it is easier for me too. But for exam, I have difficulty to come up with the words in English and use Malay more.
Writing in paper 2 is difficult for me in English as it has lot of science words and explanations are very long.

I : What is your learning strategy in learning Science in English?
S : Sorry teacher, I do not understand learning strategy.
I : It's the way you learn science to understand better.
S : I prefer group studying and discuss with my friends. I go tuition too and tuition notes in English helps me to learn the important topics only.
I : What is your opinion towards the implementation of Learning Science in English? Do you agree, disagree? Why? Give reasons.
S : I agree because English is becoming very important and I learn early in English for science and maths. But teacher is very important in speaking proper English and encourage student to learn in English the subjects like Science and Maths.
I : Alright. Thank you for your co-operation.
S : Thank you teacher.
APPENDIX E3

The Student’s Interview

Class: 3 Omega – Weak student

The subject: The subject is a Indian, male aged 15 and of weak proficiency level. He is quite weak in science subject. He is from a Tamil educated background and comes from a Tamil school.

I: Good morning S
S: Good morning teacher

I: As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?
S: Ok teacher.

I: How many years have you been learning Science in English?
S: 3 years.

I: What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?
S: As 30 to 40 marks.

I: How would you categorize yourself in understanding English language?
S: My English is poor. Bahasa Malaysia ok.

I: Do you find any language difficulties in understanding Science in English?
Why? Give some examples
S: Yes, the English word is difficult. Writing is hard. I prefer answer in Bahasa Malaysia. I do not understand English much when teacher speak. She uses Bahasa Malaysia more. That is ok.

I: What is your learning strategy in learning Science in English?
S : What’s that mean?
I : The way you learn science for exam.
S : I just read the textbook but difficult to understand in English. I answer questions in Bahasa Malaysia or I leave it just like that. I discuss with friends and copy their notes.

I : What is your opinion towards the implementation of Learning Science in English? Do you agree, disagree? Why? Give reasons.
S : I don’t agree because Bahasa Malaysia is easier to understand. I can write easily too.
I : Alright. Thank you for your co-operation.
S : Thank you teacher.
The Student’s Interview

Class : 3 Omega – Below average student

The subject is a Malay, male aged 15 and comes from sub-urban living area. He possess quite average language ability.

I : Good morning Er
S : Good morning teacher
I : As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?
S : Yes teacher.
I : How many years have you been learning Science in English?
S : 3 years.
I : What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?
S : I usually pass.
I : How would you categorize yourself in understanding English language?
S : Good
I : Do you find any language difficulties in understanding Science in English? Why? Give some examples.
S : No and Yes because I will understand when the teacher teaches us like friend, for example make jokes about it but it make senses. Problem with English words because difficult and scientific language.
I : What is your learning strategy in learning Science in English?
S : Well when I don't know I read the textbook and discuss with friends, not everyday.
I : What is your opinion towards the implementation of Learning Science in

S: I don't know.... I think I agree about it because with that implementation can improves our English after all English is second language in our country. We can be confident.

I: Alright. Thank you for your co-operation.

S: Thank you teacher.
APPENDIX F1

The Student’s Interview

Class : 3 Epsilon – Excellent student

The subject: The subject is a Malay, female aged 15 and of good proficiency level. She is the best student in Science in her class. She is from a Malay educated background and comes from a national school.

I : Good morning S

S : Good morning teacher

I : As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?

S : Ok teacher.

I : How many years have you been learning Science in English?

S : 3 years.

I : What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?

S : 50 to 55 marks.

I : How would you categorize yourself in understanding English language?

S : I can understand English but not very proficient coz I am from Malay medium.

I : Do you find any language difficulties in understanding Science in English? Why? Give some examples

S : Yes, Science terminologies. Writing sentence in paper 2 structure questions. Explaining concept and diagram. Teacher’s English is hard for me to follow and need slow explanation, one by one to understand.

I : What is your learning strategy in learning Science in English?
S : What is learning strategy?
I : Your way of learning science subject.

S : Hmmmm…….I do short notes. I use dictionary all time when learning. If I am not sure, I ask teacher to teach in Bahasa Malaysia so I can understand better. Then I write in English too. I do group study and practice worksheets.
I : What is your opinion towards the implementation of Learning Science in English? Do you agree, disagree? Why? Give reasons.

S : I agree although it’s easy to understand in Bahasa Malaysia. But slowly I can follow after 3 years
I : Alright. Thank you for your co-operation.

S : Thank you teacher.
APPENDIX F2

The Student’s Interview

Class : 3 Epsilon – Average student

The subject : The subject is a Chinese, female aged 15 and of average proficiency level. She is of average level in science subject. She is from Chinese educated background and comes from a Chinese school.

I : Good morning S

S : Good morning teacher

I : As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?

S : Yes teacher.

I : How many years have you been learning Science in English?

S : 3 years.

I : What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?

S : 40 to 45 marks.

I : How would you categorize yourself in understanding English language?

S : I can understand though my speaking is not very good I am from Chinese school since primary.

I : Do you find any language difficulties in understanding Science in English?

Why? Give some examples

S : Yes, the scientific language is hard. Teacher just explain in English but I cannot answer back because my English is just ok only and science English is different.

I : What is your learning strategy in learning Science in English?
S: What is that teacher?

I: Learning Strategy is the way you do revision, study science.

S: Oohh! I do revision and discuss with my Chinese friends. I do notes to study. I have no tuition so I ask my science teacher to teach slowly so I can understand. Lot of practice exercise also.

I: What is your opinion towards the implementation of Learning Science in English? Do you agree, disagree? Why? Give reasons.

S: I agree because later it is good when you go for higher study.

I: Alright. Thank you for your co-operation.

S: Thank you teacher.
APPENDIX F3

The Student’s Interview

Class : 3 Epsilon – Weak student

The subject: The subject is a Chinese, male aged 15 and of weak proficiency level. She is weak in English and Science. He is from a Chinese educated background and comes from a Chinese school.

I : Good morning S

S : Good morning teacher

I : As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?

S : Yes teacher.

I : How many years have you been learning Science in English?

S : 3 years.

I : What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?

S : 20 to 25 marks.

I : How would you categorize yourself in understanding English language?

S : English only a bit I understand.

I : Do you find any language difficulties in understanding Science in English? Why? Give some examples?

S : Yes, the English language is difficult. I do not know how to answer in exam.

I : What is your learning strategy in learning Science in English?

S : No strategy. Just learn only.

I : What is your opinion towards the implementation of Learning Science in

S: I disagree because I don’t understand in English and teacher teach also I don’t understand the English.

I: Alright. Thank you for your co-operation.

S: Thank you teacher.
APPENDIX F 4

The Student’s Interview

Class : 3 Epsilon – Below average student

The subject is an Indian, male aged 15. He comes from rural area and has below average language ability.

I :  Good morning Pe
S :  Good morning teacher
I :  As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?
S :  Yes teacher.
I :  How many years have you been learning Science in English?
S :  3 years.
I :  What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?
S :  30 – 45 marks
I :  How would you categorize yourself in understanding English language?
S :  O.K can.
I :  Do you find any language difficulties in understanding Science in English? Why? Give some examples
S :  O.K with English.
I :  What is your learning strategy in learning Science in English?
S :  I don't know.
I :  Well, how do you study or revise Science after learning in classroom?
S: Refering to teacher
I: What is your opinion towards the implementation of Learning Science in English? Do you agree, disagree? Why? Give your reasons.

S: Can't follow sometimes. I disagree.

I: Alright. Thank you for your co-operation.

S: Thank you teacher.
APPENDIX G1

The Student’s Interview

Class : 3 Zeta – Excellent student

The subject: The subject is a Malay female aged 15 and of good proficiency level. She is the best student in science in her class. She is from a Malay educated background and comes from a National school.

I : Good morning S

S : Good morning teacher

I : As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?

S : Yes teacher.

I : How many years have you been learning Science in English?

S : 3 years.

I : What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?

S : 30 to 40 marks.

I : How would you categorize yourself in understanding English language?

S : I can understand English. Speaking a bit.

I : Do you find any language difficulties in understanding Science in English? Why? Give some examples

S : Yes, science English is different to English in class. It is very difficult sentences and Science terms.

I : What is your learning strategy in learning Science in English?

S : I don’t understand teacher.

I : Learning strategy is the way you study Science for exam.
S : I always ask teacher to repeat in Bahasa Malaysia because it is easy. I try doing exercise in English as practice at home and ask teacher to check.

I : What is your opinion towards the implementation of Learning Science in English? Do you agree, disagree? Why? Give reasons.

S : I prefer in Bahasa Malaysia.

I : Alright. Thank you for your co-operation.

S : Thank you teacher.
The Student’s Interview

Class: 3 Zeta – Average student

The subject: The subject is an Indian, female aged 15 and of average proficiency level. She is of average level in the class. She is from a Tamil educated background and comes from a Tamil school.

I: Good morning S

S: Good morning teacher

I: As I have informed you earlier, this interview is related to my master’s research study and the information is kept confidential. So can we start?

S: Yes teacher.

I: How many years have you been learning Science in English?

S: 3 years.

I: What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?

S: 30 to 35 marks.

I: How would you categorize yourself in understanding English language?

S: I can understand. Speak very little.

I: Do you find any language difficulties in understanding Science in English? Why? Give some examples

S: Yes my English marks is always low so science in English is very difficult understand and write.

I: What is your learning strategy in learning Science in English?

S: What?

I: How do you study science?
S : I just learn and underline points but difficult to remember but difficult to write in English exam. I prefer Bahasa Malaysia.

I : What is your opinion towards the implementation of Learning Science in English? Do you agree, disagree? Why? Give reasons.

S : I feel Bahasa Malaysia is easier.

I : Alright. Thank you for your co-operation.

S : Thank you teacher.
APPENDIX G3

The Student’s Interview

Class : 3 Zeta – Weak student

The subject: The subject is a Indian, male aged 15 and of weak proficiency level. He is weak in language and science. He is from a Malay educated background and comes from a National school.

I : Good morning S
S : Good morning teacher
I : As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?
S : Yes teacher.
I : How many years have you been learning Science in English?
S : 3 years.
I : What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?
S : As 15 to 25 marks.
I : How would you categorize yourself in understanding English language?
S : Very little, I understand.
I : Do you find any language difficulties in understanding Science in English? Why? Give some examples?
S : Yes, English is hard to understand.
I : What is your learning strategy in learning Science in English?
S : I don’t know. Nothing.
I : What is your opinion towards the implementation of Learning Science in

S: Bahasa Malaysia is O.K. I can understand.

I: Alright. Thank you for your co-operation.

S: Thank you teacher.
APPENDIX G 4

The Student’s Interview

Class : 3 Zeta – Below average student

The subject is an Indian student, male aged 15. He comes from a rural living environment. He has below average ability in language.

I : Good morning Um
S : Good morning teacher

I : As I have informed you earlier, this interview is related to my master’s, research study and the information is kept confidential. So can we start?
S : Yes teacher.

I : How many years have you been learning Science in English?
S : 3 years.

I : What scores do you normally obtain for Science since you first started learning Science in English from Form 1 until Form 3?
S : 30 marks

I : How would you categorize yourself in understanding English language?

I : Do you find any language difficulties in understanding Science in English? Why? Give some examples,
S : Early exposure in primary was Bahasa Malaysia, now in Secondary is in English. So difficult. In Bahasa Malaysia different word, in English is other. Sentence not easy to write.

I : What is your learning strategy in learning Science in English?
S : Self-study.
I : What is your opinion towards the implementation of Learning Science in English? Do you agree, disagree? Why? Give your reasons.

S : Not O.K. I disagree because more difficult.

I : Alright. Thank you for your co-operation.

S : Thank you teacher.
The Science Teacher’s Interview

The subject: Pn. R

Science Teacher Classes: 3 Alpha (Excellent) and 3 Sigma (Average).

I: Good morning Pn. R
T: Good morning

I: Ok I have explained to you earlier, the purpose of this interview. Now can we start with the interview?
T: Yup, sure.

I: How many years have you been teaching Science?
T: 15 years.

I: How do you find the switch from Bahasa Malaysia to English all of a sudden in teaching Science?
T: It is not a drastic change, but I think it is a gradual process because students have time to adopt. (It is still bilingual)

I: All right. Can you describe what category does your science class fall in?
T: Excellent and average.

I: What are the problems you face during teaching Science in English in classroom?
T: Some students are weak in their terminology terms.

I: Do you find any difficulties using English in Teaching Science to students? Why?
T: No for good class. For average class I have to translate in Bahasa Malaysia.
I: What teaching strategies do you use in teaching science in English in classroom?

T: Try to speak and teach in English as far as possible. I also use teaching aids such as charts, CD-Rom often as it catches student’s attention most and the notes are simplified. I also prompt questions for them to think of the logic and connect it to the concept taught such as topics on Nuclear. For average classes giving short notes or mind map works well as they need direct input in teaching. Some personal explanation one to one with certain students works well for better understanding.

I: Ok. Have you come across problems with English Language among the students when you teach them? Give example.

T: As I said earlier good class, no problem, but for the average class, a few students do not understand English well. They need slow and repeated explanation in order to understand the concept well. That takes time in teaching process in classroom.

I: Lastly, what is your opinion towards the implementation of Teaching Science in English?

T: Good. More materials to refer and technical words in English is precise. I agree with the implementation since I was from an English medium school and as the world globally moving into advance technologies, which needs Science for a firm foundation, I think it’s a wise move initiated by the Government.

I: Thank you Pn. R for your views and time–shared.

T: No problem
APPENDIX H2

The Science Teacher’s Interview

The subject: Pn. A

Science Teacher Classes: 3 Epsilon and 3 Zeta (Very weak classes).

I: Good morning Pn. A

T: Good morning

I: Ok I have explained to you earlier, the purpose of this interview. Now can we start with the interview?

T: Ok.

I: How many years have you been teaching Science?

T: 8 years.

I: How do you find the switch from Bahasa Malaysia to English all of a sudden in teaching science?

T: Very difficult because for me I hardly use English in conversation or speak in English.

I: I see. Can you describe what category does your science class fall in?

T: Very weak class.

I: What are the problems you face during teaching Science in English in classroom?

T: Some group of students lack understanding in English Language. Therefore, they lose concentration and interest towards lesson taught in classroom using English as medium of instruction. I rather use Bahasa Malaysia as it keeps them paying attention and responding to questions that I ask.

I: Do you find any difficulties using English in Teaching Science to students? Why?
T : Yes, well you see some students are able to understand what I teach them in science using English language but these students are unable to write out the answers accurately during exam due to language problem. They cannot express well in English in answering structured or written questions.

I : What teaching strategies do you use in teaching science in English in classroom?

T : I explain in detail slowly little by little the whole chapter for few days lesson. I add examples when I explained with diagrams displayed in classroom or lab and give simple exercise or quick quiz on the topic taught after each lesson. This is to recall on lesson taught and understand the science terms for that particular topic taught.

I : Ok. Have you come across problems with English Language among the students when you teach them? Example.

T : Yes, the students find difficult to answer structured question in English as it requires writing sentences explaining the science concept. Sometimes they even find difficulty in understanding the question itself before attempting to answer.

I : Ok. Lastly, what is your opinion towards the implementation of Teaching Science in English?

T : I disagree because in my opinion I find that the teaching and learning of Science in English is not motivating in exploring science. Furthermore I understand the concept in Science as I have taught many years but to teach in English is troublesome for me. I do not like that idea. In science content is what we want them to know not language.

I : Thank you Pn. A for your views and time – shared.
APPENDIX H3

The Science Teacher’s Interview

The subject: Pn. H

Science Teacher Classes: 3 Beta (Excellent) and 3 Delta (Average).

I: Good morning Pn. H

T: Good morning

I: Ok I have explained to you earlier, the purpose of this interview. Now can we start with the interview?

T: Yes. I am free now.

I: How many years have you been teaching Science?

T: 7 years in Bahasa Malaysia, 3 years in English.

I: How do you find the switch from Bahasa Malaysia to English all of a sudden in teaching science?

T: I need more practice speaking in English to communicate in class. Some students cannot understand the science concept because they have problem in English.

I: Can you describe what category does your science class fall in?

T: For 3 Delta it’s average and 3 Epsilon is weak.

I: What are the problems you face during teaching Science in English in classroom?

T: Students reply the answer in Bahasa Malaysia even they understand the questions given in English.

I: Do you find any difficulties using English in Teaching Science to students? Why?

T: Yes. Certain students cannot understand English especially from weak class.
Teacher must translate everything.

I : What teaching strategies do you use in teaching science in English in classroom?

T : Well, myself I will write the meaning of difficult term on white board and translate the science concept in Bahasa Malaysia as to give them clear understanding of the scientific words and meanings. I use more cognitive strategies as it helps in remembering important points and notes. Lots of exercises, drilling and practices in science laboratory help in remembering lesson taught.

I : Ok. Have you come across problems with English Language among the students when you teach them? Give example.

T : Certain students who are very good in English, they find no problem but for weak class they do nothing and cannot respond to the question. The inability to get the proper word to describe a process or concept is an obvious problem as Science involves wide use of scientific vocabulary. Writing sentences in a proper structures shows grammar problem that students have in English.

I : Lastly, what is your opinion towards the implementation of Teaching Science in English?

T : Maybe this implementation turns good when students from standard one use English to learn Science and Mathematics, not starting in abrupt manner in Form one. I agree with these ideas of teaching science in English but the teachers need more support, practice and confidence as well.

I : Alright. Thank you Pn H for the time – shared.

T : You are welcome
APPENDIX H4

The Science Teacher’s Interview

The subject: Pn. Z

Science Teacher Classes: 3 Omega (Moderate)

I: Good morning Pn. Z
T: Good morning

I: Ok I have explained to you earlier, the purpose of this interview. Now can we start with the interview?
T: Yes. All right.

I: How many years have you been teaching Science?
T: 20 years.

I: How do you find the switch from Bahasa Malaysia to English all of a sudden in teaching science?
T: It’s a bit sudden. Since I came from an English medium school, it is less of a problem for me.

I: Ok. Can you describe what category does your science class fall in?
T: Excellent and average.

I: What are the problems you face during teaching Science in English in classroom?
T: Sometimes I make grammatical mistakes.

I: Do you find any difficulties using English in Teaching Science to students? Why?
T: Not for me. I have been exposed to the language much. However, problems arise when teaching the subject to the ‘ex-peralihan’ students in 3 Omega. Some can hardly read.
I : What teaching strategies do you use in teaching science in English in classroom?

T : Use simple English and lots of repetition, use more diagrams / graphics and CD-ROM. Make students read aloud in class often. I often begin lesson with life examples or higher order thinking questions related to topic as it gives them more critical thinking skills in understanding science concepts. For example, topic such as Water, Biodiversity requires a lot of concepts, terminology and experiments that can be in real life. Mind map, short notes adds further understanding and when attempting exam questions. For moderate class like 3 Omega giving extra elaboration to small group of students helps them one to one in understanding lesson that is taught as they need translation in Bahasa Malaysia to understand precisely.

I : Ok. Have you come across problems with English Language among the students when you teach them? Give example.

T : Students tend to mix Bahasa Malaysia with English, as it is still bilingual. Students find it difficult to explain concepts in English itself. Sentence structure in paper 2 writing skill is always an inevitable problem. That total relies on students mastery of language skills.

I : Lastly, what is your opinion towards the implementation of Teaching Science in English?

T : In my opinion, it should be continued and I agree.

I : Thank you for your co-operation.

T : You are welcome.
APPENDIX I

STUDENT’S QUESTIONNAIRE

UNIVERSITY MALAYA
FACULTY OF LANGUAGES AND LINGUISTICS

MASTERS OF ENGLISH AS SECOND LANGUAGE (MESL)
SEMESTER 2 2007/2008

Problems Faced In the Teaching and Learning of Science in English: A Case Study.
By:
Ranjithamalar A/P Kumar
TGB 040055

Dear Students,

I request your kind participation and would be grateful if you could complete this Questionnaire which would be extremely helpful to me in my study on “Problems Faced in the Teaching and Learning of Science in English: A Case Study”

Please note that all responses given will be treated PRIVATE AND CONFIDENTIAL.

NAME OF SCHOOL:___________________________________
FORM 3 :___________________________________________

Please write your response on the following five questions:-
You may use English or Bahasa Malaysia to response to the following questions.

Question 1

What are the language difficulties you face in learning Science in English?

(Dalam pembelajaran Sains menggunakan Bahasa Inggeris apakah masalah dari segi penggunaan bahasa / tatabahasa yang anda hadapi?)
Question 2

What are the learning strategies you use in learning Science in English?

(Apakah strategi pembelajaran yang anda gunakan dalam pembelajaran Sains menggunakan bahasa inggeris ?)

Question 3

What are the teaching strategies employed by your Science teacher in teaching science in English?

(Apakah strategi pengajaran yang digunakan oleh guru Sains anda dalam pengajaran Sains menggunakan Bahasa Inggeris ?)

Question 4

What is your opinion in learning science using English as the medium of instruction?

(Apakah pendapat anda dalam mempelajari Sains menggunakan bahasa inggeris sebagai bahasa penghantar ?)

Question 5

What is your feedback towards the implementation of learning Science in English?

(Apakah respon anda terhadap pengimplementasian pengajaran dan penbelajaran Sains dalam Bahasa Inggeris)

THANK YOU FOR YOUR KIND CO-OPERATION
APPENDIX J

TEACHER’S QUESTIONNAIRE

UNIVERSITY MALAYA
FACULTY OF LANGUAGES AND LINGUISTICS

MASTERS OF ENGLISH AS SECOND LANGUAGE (MESL)
SEMESTER 2 2007/2008

Problems Faced In the Teaching and Learning of Science in English: A Case Study.

By:
Ranjithamalar A/P Kumar
TGB 040055

Dear Teachers,

I request your kind participation and would be very grateful if you could complete this questionnaire which would be extremely helpful to me in my study on “Problems Faced in the Teaching and Learning of Science in English: A Case Study”.

Please note that all responses given will be treated PRIVATE AND CONFIDENTIAL.

NAME:________________________________

TEACHING SCIENCE IN FORM 3:   _______________________

Please write your response on the following five questions:-
You may use English or Bahasa Malaysia to respond to the following questions.

Question 1

What are the teaching strategies you employ in teaching science in English in your Form 3 classroom?
Question 2
What are the difficulties you face in teaching science using English as the medium of instruction in the Form 3 classroom?

Question 3
In your opinion, what are the language difficulties your Form 3 students face in learning Science using English in classroom?

Question 4
What is your opinion in teaching Science using English as the medium of instruction?

Question 5
What is your feedback towards the implementation of teaching Science in English?

THANK YOU FOR YOUR KIND CO-OPERATION