

AAA APPROACH IN LEARNING SCIENCE AMONG YEAR 6 PUPILS

By

Eileen Kee Hui Ling

Sek. Jenis Keb. Chung Hua Engkilili,
95800 Sri Aman.

Abstract

I am the Science teacher for Year 6K class in my school. I found that almost 2/3 of my pupils in my class that is about 23 of them, are actually lack of interest in learning Science. Their participation in the Science class is very discouraging. After some consideration, I decided to implement AAA approach. This study determines whether AAA approach can help to increase the interest of this 2/3 of the pupils in learning Science and also find out how it increases the interest of the pupils concern. A Science test on the same topic, classroom observations and also several interviews were used for data collection. As proven through this action research study, AAA approach really works! This approach really helps in enhancing Year 6 pupils' interest towards learning Science.

BACKGROUND

SJK Chung Hua Engkilili was launched in 1928 by Tuan Loo Koch, an English man. The first headmaster at that time was Mr Jong Kai Ping. Currently, there are altogether 28 staffs in the school. These include the principal and the non-academic staffs. There is only one morning session and the number of the pupils in this boarding school is 353. Almost half of the pupils are from the low-income group whereas the other half are from the average group. Although the school is a Chinese school, only half the total number of the pupils are Chinese.

RESEARCH SITUATION

I am the Science teacher for Year 6K class in the school. By the end of this year, the pupils will be sitting for their UPSR examination. Quite surprisingly, during my first few weeks with the pupils, I found that almost 2/3 of the pupils in my class (23 of them), actually lack interest in learning Science. Their participation in the Science class was very discouraging. The classroom atmosphere was not vibrant and they engaged in quiet social interaction not related to the topic being taught by the teacher. Their poor results in the first monthly test were another indicator as shown in Table 1.

Table 1: The results of the 2/3 of the pupils in 6k class for the first monthly test

No	Name of Pupils	Marks	Grade
1	Belary	14	E
2	Corrine	25	D
3	Dorina	25	D
4	Edwine	28	D
5	Gordon	18	E
6	Helmi	6	E
7	Jee	24	D
8	Jennifer	24	D
9	Lee	10	E
10	Liew	25	D
11	Moses	22	D
12	Nerika	19	E
13	Ng	36	D
14	Nur	19	E
15	Priscilla	10	E
16	Raymond	12	E
17	Rofina	19	E

18	Semeul	16	E
19	Susan	25	D
20	Tan	16	E
21	Tay	14	E
22	Tracy	19	E
23	Zonic	24	D

As suggested by the previous Science teacher in the interview, I decided to implement AAA approach (Ask, Answer and Ask Again) throughout the whole lesson in order to invite participation from the 2/3 of the pupils and increase their interests in learning Science.

OBJECTIVES

The purpose of this study is to determine whether AAA approach could help increase the interest of this 2/3 of the pupils in learning Science. It is also implemented to find out how AAA approach increases the interest of the pupils concern. Besides, I would like to try out this AAA approach to improve my practice and make my teaching and learning activity a perfect one.

THE PARTICIPANTS

I as a Science teacher is involved in this action research study as a researcher. Other participants for this study are 23 pupils from 6K class in SJK Chung Hua Engkilili. They are selected as participants because they failed their first monthly test. The population profile of the participants is shown in Table 2 whereas the distribution of participants by gender and perceived Science ability is shown in Table 3.

Table 2: Population profile of the participants

Year	Class	Male Population	Female Population	Total Population
6	6 K	12	11	23

Table 3: Distribution of participants by Gender and Perceived Science Ability

Gender	Perceived Science Ability (According to the Science results for first monthly test)	Number of pupils	Number	Percentage
Male	High	-	12	-
	Average	9		39.1
	Low	3		13.1
Female	High	-	11	-
	Average	7		30.4
	Low	4		17.4
Total	-	-	23	100.0

As shown in Table 2, among those 23 pupils, 16 of the pupils are rated as average pupils and 7 of them are rated as being low ability and they have problems in reading and writing Mandarin properly. The rating is done based on the Science result for the first monthly test shown in Table 1.

WAYS IN COLLECTING DATA

The instruments that I used to gather data for the study were interviews (with the previous Science teacher and 3 participants randomly), classroom observations, and tests' results.

Interview with the previous Science teacher

An interview was conducted formally with the previous Science teacher before the study was being done. The interview was carried out with Mdm Lau Lie Hie on 14 February 2005. The interview started with general questions aimed at establishing rapport. This was followed by a common set of questions. The interview was conducted with a purpose to identify the problem on which to conduct

the action research study as well as having a guide in planning the strategies and activities to be used.

The interview with the previous Science teacher was conducted in Mandarin and was then translated into English to keep as a record. The questions being asked in the interview are shown below.

Teacher	:		Date	:	
Time	:		Venue	:	
Q1	:	How long have you been teaching in this school?			
Q2	:	How many years have you been teaching Science?			
Q3	:	Do you enjoy teaching Science? Why?			
Q4	:	Are you from Science option?			
Q5	:	How do you find the overall Science performance of the 6K class?			
Q6	:	What can you say about the pupils' attitude towards Science subject?			
Q7	:	In your opinion, what is the main reason that makes the pupils think that Science Subject is difficult?			
Q8	:	Usually, how do you check for pupils' understanding when teaching in the class?			
Q9	:	What type of questions you usually ask in the class?			
Q10	:	Do you think that asking questions will help the pupils concentrate more in the class?			
Q11	:	If I were to carry out an action research to enhance the participation of the pupils in the class, do you have any suggestion on how it should be done?			

Interviews with 3 pupils randomly

Interviews were being carried out informally with 3 pupils randomly after the study was being done. The interviews were conducted one by one with the 3 pupils with the purpose of getting some feedback from the pupils regarding this action research study. The interviews were conducted in Mandarin and were then translated into English to keep as a record. The questions asked in the interviews are shown below.

Name	:		Date	:	
Time	:		Venue	:	
Q1	:	Which subject do you like most?			
Q2	:	Do you enjoy learning Science? Why?			
Q3	:	Do you go for any tuition?			
Q4	:	How long do you spend in a day to do revision for Science subject?			
Q5	:	Do you like teacher asking questions during Science lesson?			
Q6	:	Do you think that teacher asking questions in the class help you concentrate more in the class?			
Q7	:	How do you find your overall Science performance within these few months?			

Classroom Observations

Classroom observations were being done when the Science lessons were carried out. Altogether, 3 classroom observations were made. During the observations, I got help from the previous Science teacher to watch and record the responses of the pupils. Every single question given by me, the responses of every single pupil to my questions and the questions asked by the pupils were recorded. Through all these observations, I could keep track of what actually happened in the classroom. All the results from classroom observations were then recorded as shown in Table 4.

Table 4: Records for classroom observations

Date	:		Day	:		Time	:													
Qs	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Name																				

Tests' results

The same question papers, as for the first monthly test, were given to the pupils again, after I repeated the first topic using AAA approach.

ACTION PLAN (AAA APPROACH – ASK, ANSWER AND ASK AGAIN)

The main focus of the study was to enhance pupils' interest towards learning Science through implementing this AAA approach. AAA approach is actually an approach for the teacher to ask the pupils some questions to attract their attention, get them to answer the questions to enable them to establish what they already know, encourage them to ask questions to extend their knowledge and then to develop new ideas.

The following are the steps and principles in implementing this AAA approach.

- 1) Pose a problem to the pupils as set induction to arouse their interest.
- 2) Teacher asks some questions in a big group to invite participation from all the pupils.
- 3) Teacher can also call the name of the pupil first before giving any question to make sure passive pupils also take part in the teaching and learning activities.
- 4) If the pupils cannot answer correctly, try to guide them with few more questions related to the first one. If they still cannot answer, only then ask the rest to help.
- 5) Give more convergent questions to those pupils to gain their participation first and gradually ask more divergent or evaluative questions.
- 6) They might have lots of funny answers. Try to accept all their answers if possible. Do not deny their answers.
- 7) Never show negative reinforcement as this will prevent them from trying to answer any question in future.
- 8) In between the lesson, try to encourage them to ask more questions as they learn most when they ask questions.
- 9) Answer every single question given by the pupils.
- 10) Give motivation to those pupils who got the answers right and those who provide good questions.

FINDINGS

Classroom observation (1)

Date : 10/3/2005

Day : Thursday

Time : 11.10 -12.10 pm

Qs Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Belary	B	b	b	b	b	b	b	b	b	b	b	b	B							
Corrine	B	b	b	b	b	b	b	b	b	b	b	b	b							
Dorina	B	b	b	b	b	b	b	b	b	b	b	b	b			c				
Edwine	B	b	b	b	b	b	b	b	B	b	b	b	b							
Gordon	B	b	b	b	b	b	b	b	B	b	b	b	b							
Helmi	B	b	b	b	b	b	b	b	B	b	b	b	b							
Jee	B	b	b	b	b	b	b	b	B	b	b	b	b							
Jennifer	B	b	b	b	b	b	b	b	B	b	b	b	b				c			
Lee	B	b	b	b	b	b	b	b	B	b	b	b	b							c
Liew	B	b	b	b	b	b	b	b	B	b	b	b	b					c		
Moses	B	b	b	b	b	b	b	b	B	b	b	b	b							
Nerika	B	b	b	b	b	b	b	b	B	b	b	b	b							
Ng	B	b	b	b	b	b	b	b	B	b	b	b	b						c	
Nur	B	b	b	b	b	b	b	b	B	b	b	b	b		c					
Priscilla	B	b	b	b	b	b	b	b	B	b	b	b	b							

Raymond	B	b	b	b	b	b	b	b	B	b	b	b							
Rofina	B	b	b	b	b	b	b	b	B	b	b	b							
Semeul	B	b	b	b	b	b	b	b	B	b	b	b							
Susan	B	b	b	b	b	b	b	b	B	b	b	b							
Tan	B	b	b	b	b	b	b	b	B	b	b	b							
Tracy	B	b	b	b	b	b	b	b	B	b	b	b							
Zonic	B	b	b	b	b	b	b	b	B	b	b	b	c						

b-Teacher asks question in a big group; **c**-Teacher calls the name of the pupil to answer the question

I started the lesson after every pupil was seated. For this lesson, 20 questions were being asked. Most of the questions were just 'Yes/ No' questions. I tried to pose my questions to any pupil in the classroom. But I happened to know that the participants were too shy to answer the questions and they just sat very quietly waiting for the others to answer the questions. Some of them were drawing some pictures that were not related to the teaching.

So, I decided to ask questions in a big group. I did this with a purpose to encourage those pupils who were too quiet and introvert to be involved in the teaching and learning activities. Obviously, they enjoyed answering questions in a big group. They shouted the answers loudly. Although I received a lot of funny answers, I was happy. There were responses from them! They started to participate in the activities by answering questions.

For questions 14-20, I called the names of the pupil first before asking any questions. By hook or by crook, they had to stand up and answer my questions. With this, I was sure that all the participants have their chances to answer my questions.

Classroom observation (2)

Date : 17/3/2005
 Day : Thursday
 Time : 11.10 -12.10 pm

Qs Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Belary	b	b	b					b	b				b		b	b				h
Corrine	b	b	b					b	b				b		b	b				
Dorina	b	b	b					b	b				b		b	b				
Edwine	b	b	b					b	b				b		b	b				
Gordon	b	b	b			c		b	b				b		b	b				
Helmi	b	b	b					b	b				b		b	b				
Jee	b	b	b					b	b				b		b	b				
Jennifer	b	b	b					b	b				b		b	b				
Lee	b	b	b					b	b				b		b	b				
Liew	b	b	b					b	b				b		b	b				
Moses	b	b	b	c				b	b			a	b		b	b				
Nerika	b	b	b					b	b				b		b	b		h		
Ng	b	b	b					b	b	a			b		b	b				
Nur	b	b	b					b	b				b	h	b	b				
Priscilla	b	b	b					b	b				b		b	b				
Raymond	b	b	b					b	b				b		b	b				h
Rofina	b	b	b				c	b	b				b		b	b				
Semeul	b	b	b					b	b				b		b	b				
Susan	b	b	b					b	b				b		b	b				

Tan	b	b	b					b	b				b		b	b	h			
Tracy	b	b	b		c			b	b				b		b	b				
Zonic	b	b	b					b	b		a		b		b	b				

b- Teacher asks question in a big group; **c-**Teacher calls the name of the pupil to answer the question
h- Pupils put up their hands to answer questions ; **a-**Pupils asking questions

For this lesson, I tried to reduce the number of questions that were asked in a big group. To invite more participation, I called the name of the pupils first before giving any question. Almost all the questions that were asked were convergent type of questions which only required one word answers.

It was noticed that there were a few participants who did not really pay attention in the class. Once their names were being called, they just stood up and shook their heads. More questions related to the first question were given to guide these pupils to answer correctly.

Quite surprisingly, in this lesson, the participants started to put up their hands to answer questions. Three of them even posed questions. They started to show their eagerness to know more about Science through questioning. That was really a very good start!

Classroom observation (3)

Date : 31/3/2005

Day : Thursday

Time : 11.10 -12.10 pm

Qs Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Belary	h	h	h		h	h	h			h		h	h	h		h			h	a
Corrine	h	h	h		h	h	h			h		h	h	h		h			h	
Dorina	h	h	h		h	h	h			h		h	h	h		h			h	
Edwine	h	h	h		h	h	h		a	h		h	h	h		h			h	
Gordon	h	h	h		h	h	h			h		h	h	h		h			h	
Helmi	h	h	h		h	h	h			h		h	h	h		h		a	h	
Jee	h	h	h		h	h	h			h		h	h	h		h			h	
Jennifer	h	h	h		h	h	h			h		h	h	h		h			h	
Lee	h	h	h		h	h	h			h		h	h	h		h			h	
Liew	h	h	h		h	h	h			h		h	h	h		h			h	
Moses	h	h	h		h	h	h			h		h	h	h		h			h	
Nerika	h	h	h		h	h	h			h		h	h	h		h			h	
Ng	h	h	h		h	h	h			h		h	h	h		h			h	
Nur	h	h	h	a	h	h	h			h		h	h	h		h			h	
Priscilla	h	h	h		h	h	h			h		h	h	h		h			h	
Raymond	h	h	h		h	h	h			h		h	h	h	a	h			h	
Rofina	h	h	h		h	h	h			h		h	h	h		h			h	
Semeul	h	h	h		h	h	h			h		h	h	h		h	a		h	
Susan	h	h	h		h	h	h			h	a	h	h	h		h			h	
Tan	h	h	h		h	h	h	a		h		h	h	h		h			h	
Tracy	h	h	h		h	h	h			h		h	h	h		h			h	
Zonic	h	h	h		h	h	h			h		h	h	h		h			h	

h – Pupils put up their hands to answer questions ; **a** – Pupils asking questions

In this lesson, I tried to reduce the 'Yes/No' questions. This time, I tried to introduce some divergent or evaluative questions instead of all convergent questions. Every pupil was so excited and almost all of

them put up their hands to wait for their chance to answer questions. Although I received all types of answers from them, but at least I managed to attract their attention.

The whole lesson was totally different from the previous lessons. The pupils became very active in the class. They started to ask questions. They even came out with some questions that I never thought of. I tried my very best to answer their questions. Answering their questions indirectly encouraged them to ask more about the topic.

The lesson became livelier and there were two-way communication among the teacher and the pupils. The teaching and learning processes were carried out smoothly. The pupils enjoyed the lesson very much and this can be shown by the smiles on their faces throughout the whole lesson. It cannot be denied that the previous Science teacher who was together with me experienced the differences in attitude of the pupils before and after the AAA approach being introduced.

Table 5: Comparison of Pre and Post Test Results

No	Name of Pupils	Pre- test		Post- test		Differences
		Marks	Grade	Marks	Grade	
*1	Belary	14	E	33	D	+ 29
2	Corrine	25	D	45	C	+ 20
3	Dorina	25	D	52	C	+ 27
4	Edwine	28	D	42	C	+ 14
*5	Gordon	18	E	22	D	+ 4
*6	Helmi	6	E	30	D	+ 24
7	Jee	24	D	68	B	+ 44
*8	Jennifer	24	D	28	D	+ 4
9	Lee	10	E	57	C	+ 47
10	Liew	25	D	48	C	+ 23
11	Moses	22	D	42	C	+ 20
*12	Nerika	19	E	31	D	+ 12
13	Ng	36	D	78	B	+ 42
14	Nur	19	E	72	B	+ 53
15	Priscilla	10	E	55	C	+ 45
16	Raymond	12	E	40	C	+ 28
17	Rofina	19	E	66	B	+ 47
18	Semeul	16	E	52	C	+ 36
*19	Susan	25	D	25	D	-
20	Tan	16	E	70	B	+ 54
*21	Tay	14	E	30	D	+ 16
22	Tracy	19	E	64	B	+ 45
23	Zonic	24	D	68	B	+ 44

The results of the second test indicates a significant improvement if compared to the first one. In the first test, 23 pupils failed their monthly test where as in the second test only 7 of them failed their test as shown in Table 5. This shows that the AAA approach really worked and it helped to increase the level of interest of the participants in learning Science.

Interview with 3 pupils randomly

Below are the summaries of my interviews with 3 pupils.

1. Nur, female, Malay, average group

"I find it hard to understand Science since it is taught in Bahasa Cina. I do not attend any tuition class. I was very happy because I pass my test, as this is the first time I pass my Science subject. Teacher asks a lot of questions in the class. I do not know how to answer teacher's question. So, I decided to buy some reference books to improve myself. To make myself ready for the questions, I will do some revision every night."

2. Jee, female, Chinese, average group

"I enjoyed answering questions from teacher in the class. I felt very proud if I got the answers right. Answering teacher's questions makes me understand better and it helps to prevent wrong concepts. Furthermore, I become eager to know more about the topic. That is why I always come out with a lot of funny questions. I hope teacher do not mind."

3. Tan, male, Chinese, average group

"I never thought that Science subject can be taught in such an interesting way. I like the lesson to be conducted this way rather than just sit down and listen only. To make sure I can answer teacher's questions, I will force myself to concentrate fully throughout the whole lesson. I really gain a lot of knowledge by answering and asking questions."

Most of my pupils enjoyed answering questions posed in the class. They were eager to know more by asking more and more questions. They like the lesson to be conducted this way. Feedback from the pupils in the interviews showed that they never thought that Science lesson could be conducted in such an interesting way. This shows how much they like the lesson after AAA approach was implemented. Besides, very surprisingly, some of the pupils even started to read more about Science through reference books, magazines and others just for one reason, that is, to answer the teacher's question in the next lesson.

REFLECTION

On looking back after the completion of this study, I have realized the importance of asking questions in the class during lesson and also inviting questions from the pupils. Before this, I thought that giving a lesson is just going into the class and do some teaching. Only now I know that the most important part in teaching is how much the pupils gain from our lessons and what a teacher could do to help the pupils know what they are supposed to know.

Through this action research, I managed to come out with AAA approach. As proven through this action research study, this approach really helps in enhancing Year 6 pupils' interest towards learning Science. A significant difference in the result of the second test compared to the first one is one of the indicators. There was a remarkable increase in the result of the second test after the implementation of the AAA approach. Anyway, there are still 7 of them who still failed the second test. If possible, I would like to do another research study to find out the best way to help them in future.

Based on the findings, the following conclusion could be drawn.

- 1) The more frequent my pupil gets the chance to answer questions from me, the higher the level of interest towards learning Science.
- 2) My pupils enjoy answering questions from teachers rather than just sitting down and listening.
- 3) Answering and asking questions help the pupils to concentrate fully and participate more in the teaching and learning activities. This is followed by a better understanding towards the topic being taught by the teacher.
- 4) Questions given during the lessons encourage the pupils to ready themselves by reading more from reference books, magazines and others on their own. This not only helps to widen their knowledge but also enhance the smoothness of the teaching and learning processes in the classroom.
- 5) Pupils actually learn best in a supportive classroom environment where their contributions are valued. The types of questions given by the teachers, the responses given by the pupils, and the way the pupils ask questions actually affect both the self-esteem of the pupils and their participation in the classroom.

After I completed my action research, the first thing I would like to do is to implement this AAA approach in my every day teaching to make my teaching more interesting and livelier. Of course, I also would like to share the results of my action research with other Science teachers who are facing the same problem. Hopefully with this, every teacher will realize the importance of action research in

improving their teaching in school. Not forgetting to underline also the importance of AAA approach in enhancing the interest of pupils towards certain subject and not necessarily Science subject only.

BIBLIOGRAPHY

- Altrichter, H., Posch, P. & Somekh, B. (1993). *Teachers investigate their work: An introduction to the methods of action research*. London: Routledge.
- Arhar, J.M., Holly, M.L., & Kasten, W.C. (2001). *Action research for teachers: Travelling the yellow brick road* (pp 248-251). NJ: Prentice-Hall Inc.
- Atan Long. (1983). *Pedagogi kaedah am mengajar*. Petaling Jaya: Penerbit Fajar Bakti Sdn Bhd.
- Bahagian Pendidikan Guru. (2001). *Garis panduan kursus penyelidikan tindakan untuk maktab/ institut perguruan Malaysia*. Kuala Lumpur: Kementerian Pendidikan Malaysia.
- Gan Teck Hock. (1999). Mencari titik perseimbangan di antara keunggulan teori dan kenyataan praktis: satu kes pelaksanaan pembelajaran koperatif dalam pengajaran matematik sekolah rendah. *Jurnal Penyelidikan Pendidikan Maktab Perguruan Sarawak*, Jilid 2, No 1, 68-85.
- Jeffery anak Menggu. (2003). "Aya Du." Dalam *Prosiding Seminar Kajian Tindakan 2003, 8-9 Oktober 2003*. Terbitan bersama Maktab Perguruan Tun Abdul Razak, Samarahan dan Jabatan Pendidikan Bahagian Sri Aman, 133-147.
- Johnson, Nancy L. (1990). *Questioning makes the difference*. Melbourne: Hawker Brownlow.
- Wilson, Jeni & Jan, Lesley Wing. (1993). *Thinking for themselves: Developing strategies for effective learning*. Armadale: Eleanor Curtain Publishing.

Ringkasan Sesi

Soalan 1: What particular topic did you teach the pupils in Science subject using AAA? How long did you do your research? (Pn. Chuah)

Jawapan: The topic is Preservation of Food and involved 6 months of research (Cikgu Eileen).

Soalan 2: What is your evidence in your case? (Pn. Chuah)

Jawapan: The test results, that is, pre and post test (Cikgu Eileen).

Soalan 3: You claimed in your presentation that the pupils enjoyed your class. Where is your data? Do you have pictures or interview transcripts/ data? (Pn. Chuah)

Jawapan: The pupils always came out with lots of funny question (Cikgu Eileen).

Soalan 4: Do you keep the test paper after the test? (Cikgu Michael)

Jawapan: Yes. I gave again as post test after the implementation of AAA (Cikgu Aileen).

Komen: The questions are posed here as in AR, it is important to provide context or data as evidence or supportive evidence (Pn. Chuah)

Dilaporkan oleh:

Cikgu Serina James
Sek. Keb. Nanga Menyebat