SEREAD REPORT

Preamble from Julie Hall, Chair of SEREAD

The workshop was very successful with a very positive response from both teachers and Ministry of Education. As a result of feedback from the teachers and science advisors the resource material will be updated early in the new year and will be ready for a new round of teacher workshops in other countries. The science advisor in the Cook Islands has also agreed to detail the curriculum links for the resource for the Cook Islands which will be a valuable reference for the teachers using the material. This is something we should aim to do for each country if at all possible and will require identifying a person in each country who is willing to assist us with this task.

I would like to take this opportunity to say a very big thank you to Keith Hartle and Carol Young. They both put in a great deal of time and effort this year to produce a set of teaching resources for the SEREAD programme. Without their skills, time and dedication SEREAD would not be where it is today, with resource material that has been very well received by teachers and a significant number of teachers in the Cook Island keen to implement the SEREAD programme in their schools. We also have significant support for the programme in the Ministry of Education in the Cook Islands, which we hope will sustain the SEREAD programme in the schools. The SEREAD programme has come a very long way this year thanks to the huge effort that Keith and Carol have put in.

It is now time to start planning to take the SEREAD programme to other countries and to complete the lower secondary schools resource material. Keith will be going back to classroom teaching early in the New Year but has offered to complete the lower secondary schools resource material in his own time and also to update the primary school material when feedback from the Rarotonga teachers is received. This will put the SEREAD programme in a very strong position to go forward into other countries in the Pacific.

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REPORT of SEREAD Teacher Training Workshop:

Held: 4th and 5th December 2002

Venue: Edgewater Resort and University of South Pacific, Rarotonga, Cook Islands.

Participants:

Director of Curriculum for Ministry of Education, Rarotonga
Science Adviser, Secondary Schools, Rarotonga
Curriculum Facilitator for Primary Schools, Rarotonga
8 Practising Teachers from Public and Church Schools
2 Trainee Teachers from Training College, Rarotonga.

Workshop Facilitators:

Carol Young
Keith Hartle

Overview:

A very successful workshop to introduce primary school teachers to SEREAD was held in December in Rarotonga. The workshop comprised four sessions, over 1.5 days. The sessions included material on the nature of “Argo” project, teaching background and practical teaching activities related to Argo (Refer to Appendix 1).

The first session on the evening of the 4th concentrated on the Argo project and the role Argo will play in monitoring and predicting climate. This helped to introduce the role the oceans play in climate, and the reasons why scientists are monitoring physical ocean characteristics such as temperature and salinity.

Following a vocabulary activity designed to introduce participants to thinking about their own ideas associated with climate and weather, the SEREAD concept and the accompanying resource books were introduced. The aims of the workshop were presented and discussed with the participants.

The session finished with questions and discussion, and was followed by a dinner for the participants.

The following day was devoted to covering the concepts and activities presented in the resource books.

The sessions were split into a mix of teaching concept, activities and discussion.

The first session concentrated on the water cycle and the key ideas that children at a lower primary level should understand. After looking at the overview, some of the theoretical science ideas that children of this age would be expected to learn were discussed and the participants undertook some of the activities presented in the
resource material. Both drama and observation were used as methods for developing an understanding.

The post morning tea session continued with further activities and discussion centred on the lower primary resource material. This included adding the role of heat energy plays in the water cycle, and developing these ideas and observations to relate them to the weather. Further opportunities were taken to trail activities and discuss learning outcomes and the additional knowledge teachers require for teaching the material successfully.

The final session concentrated on the upper primary resource material. After a brief discussion, the equipment kits (see Appendix 2) that were provided for the teachers to use in their classrooms were tested. Teachers had the opportunity to trial some of the activities in the resource for use with students, for example measuring and recording weather data. Subsequent discussion developed ideas on the variety of ways students could record their own data, and the links with other curriculum areas.

Finally discussion centred briefly on the nature of science concepts that could be introduced at this level and where Argo fitted in the learning programme.

During the day a reporter form the local TV station interviewed the facilitators of the workshop and filmed the participants working on various activities. The report was broadcast on the national news that night.

**Response of Participants.**

Overall the feedback from the workshop was extremely positive. A combination of factors ensured a successful outcome with perhaps the most evident one being a willingness of teachers to want to understand climate and climate change, and how to relate it to children they teach. Being able to provide the big picture as well as the curriculum perspective was well received.

The comments below were selected as typical of the responses we received from the participants. A summary of the evaluations is given in Appendix 3.

**The Understanding of Weather and Climate:**
“The first day of the workshop was quite complicated for me but I managed to ask questions and listened carefully to explanations. I thank God that I’m selected to attend the workshop. I’ve learned a lot and really enjoyed the workshop. Thank you.”….Riri

**The Resource Material:**
“It’s simple and easy to follow.”….Tatari

“Personally I would say the that the concepts and the content of the work presented in a way where I as a teacher understood about the language used as well as the layout of the activities.”…..Teina
**The Most Valuable Aspect:**
“Doing/trying/experimenting things and of course having fun actually doing it.”….Kerry

**How useful will the equipment kits be in your classes?**
“We have used some of the equipment during our session so we can still use it at school”…Pare
“Easy, light and most them are available right here.”….Tatari

The only negative aspect to come form the workshop was the length of time allocated. Another day would have been useful.

It is worth noting that a it is a policy of many schools in the Cook Islands, that teachers who have been away on professional development workshops will share this information with their colleagues on returning to their schools.

**Recommendations for Future Workshops**

- Allow 2 days for each workshop.
- Provide for a range of experiences and allow for multi level teaching in schools.
- Using feedback, allow for the provision of follow up workshops and updating of materials.

**SEREAD resource materials.**

- The Science Adviser in the Cook Islands will provide curriculum links for the resources, to be used in revising the draft lower Primary and upper Primary resources.
- The Lower Secondary Teaching Resource is in a draft form and is with the Cook Islands Science Adviser for review and assessment of curriculum links.
- The SEREAD primary schools resource material will be updated by March after feedback from teachers in Rarotonga and the lower secondary schools resource will be ready for use by May.
APPENDIX 1

WORKSHOP AGENDA

Day 1.

4.00 – 7.00 pm

1. Introduction to the concept of Argo and monitoring the oceans

Session included:
What is Argo?
What information does Argo aim to provide scientists with and why.

2. What is SEREAD?

Introduction to SEREAD as the educational arm of the Argo

3. The Teaching Units

Session to include:
- Cluster Activity to allow teachers to assess their own ideas about weather (Based on classroom literacy exercise)
- An overview of the units and how these link towards a spiralling learning
- Concept for Year 2 to Year 13 students.
- The layout of the units at the various levels.
- The links between the teaching concepts and Argo.

Allow teachers the opportunity to look through the units and familiarise themselves with the layout and content.

Dinner

Day 2

9.00 – 10.15 am

Teaching Unit for Lower Primary Level in detail

- Discussion on the importance of the water in weather.
- Teachers complete the Water cycle story and sample of practical activities related to evaporation.

Question and Answer Session

10.15 to 10.35 am

Morning Tea

10.35 - 11.00 am
A mix and match activity designed to allow teachers to assess their own knowledge associated with weather science with regard to:

- Terms
- Definitions
- Symbols

11.00 – 11.30 am

- Review discussion on the role of the sun and heat energy in the water cycle.
- Discussion of the relationship between Sun and Ocean in establishing tropical weather patterns.
- What changes could occur in these weather patterns through global warming?

Question and Answer Session

11.30 – 12. 30 pm

- The science concepts associated with changes of state of water.
- Children’s ideas and misconceptions.
- Carry out activities to illustrate changes of state, including an activity that illustrate energy requirements for state changes, and making clouds.

12.30 - 1.15 pm Lunch

1.15 – 2.15 pm

**Teaching Unit for Upper Primary Level in detail**

- Brief overview of unit concepts and key idea.
- Carry activities involving making and using weather station equipment using the equipment kits provided for the teachers for use in their schools.

2.15 – 2.45pm

- Discussion of the science concepts associated with heat energy transfer.
- Carry out activity demonstrating principle of convection currents.

2.45 – 3.00 pm

- Discussion and evaluation
Appendix 2: Resource Kits provided for teachers

Equipment Kits:

1 large sealable plastic bag.
3 medium size sealable bags.
3 small candles.
Sheet of card (A4 Size).
Sheet of coverseal for card.
1 length of 10mm dowel (200 mm )
2 small plastic test tubes (12mm diameter) to fit dowel
1 small plastic test tube (10 mm diameter) for Cartesian Diver
2 lightweight plastic cups
2 plastic alkay containers
4 balloons
20 drinking straws
2 strips of Blu Tack
1 Outdoor Thermometer (McGregor m23 – plastic mount)
Appendix 3. Evaluation of the SEREAD Workshop

**SEREAD: Summary of Teacher Workshop Evaluations**

**DATE:** 4 and 5th December 2002

**GROUP:** Primary Year 1 -8  
**VENUE:** Rarotonga: Cook Islands

**Total of 11 respondents.**

1. How much has your understanding of weather and climate improved as a result of the SEREAD workshop?

   | **Greatly** | **None** |
   | 8         | 3       | 0 | 0 | 0 |

   **Comments:**
   - The workshop was a great learning experience. It provided new ideas and knowledge that can be passed on to the children.
   - For some teachers, skills such as reading the symbols on weather maps, looking at weather patterns and climate change were improved, as well as the water cycle concept.
   - Having up to date information about what was happening and the research being carried out was invaluable.

2. How do you rate the quality of the teacher handbooks?

   | **Excellent** | **Good** | **Poor** |
   | 9         | 2       | 0 | 0 | 0 |

   **Comments:**
   - The books were seen simple and easy to read.
   - Layout was good and information was concise.
   - The language was understandable and provided quality and relevant information. Illustrations with explanations were valuable.
   - Great activities.
   - “Number 10!”

3. How useful do you think the teacher handbooks will be to your classes?

   | **Excellent** | **Useful** | **No use** |
   | 8         | 1       | 0 | 0 | 0 |

   **Comments:**
   - For teachers the books were easy to follow and very helpful for lesson planning and
   - The activities were adaptable as well as being “quality” activities.
   - It was thought that brighter children could read the material (activities) leaving the teacher to help the slower children.
   - The books were recommended to other teachers and especially the value of the statement at the end of the activities: “What we want children to learn”.

4. How useful do you think the equipment kits will be in your classes?

   | **Excellent** | **Useful** | **Poor** |
   | 8         | 1       | 0 | 0 | 0 |

   **Comments:**
   - The materials were seen as useable in schools, light and readily obtainable.
• They were a great resource for planning the activities

If there is anything we have left out of the kits that you would find useful please list them below.
• Felts
• Rulers
• Coloured pins.
• Possibly more than one kit per school.

5. How confident do you feel about using these activities in your school?

Comment: (10 respondents)
• The activities will enable teachers to teach science in their schools.
• Teachers being able to do the activities in the workshop was invaluable, and will enable planning science activities to be integrated into programmes.
• The activities were seen as suiting student abilities and were actual “doing” activities.
• One teacher commented that they would make their own equipment.

6. Will the Resource material be used in your Teaching Programme next Year?

Comment: (10 respondents).
• In many cases the teachers attending the course will be running workshops for other teachers in their schools.

7. How valuable has the workshop been?

What aspects of the workshop did you find most valuable and why?
• Teachers found doing the experiments invaluable and having fun doing them.
• Learning new concepts, the theory and skills involved.
• The tutoring to understand what is going on.
• The sharing of knowledge that can be passed onto children.
• Explanations that linked examples and activities that suited the topic.

What aspect of the workshop did you find least valuable and why?
• For one teacher the detail involved in the water cycle
• A general statement made, there was not enough days!

8. What further assistance do you think would help you bring this programme into your school?

The comments included:
• Follow up workshop would be invaluable.
• Updates on this topic and current issues that are written in a useable language and format and sent to schools.
• More booklets for the schools.
• Having more than one teacher per school attending.
• Visit the schools to help teachers implement the programme.
Other comments

- Follow up workshop was seen by many of the group as being invaluable.
- Part of the reason for this as one teacher put it is that he would like more time to develop a fuller understanding of the relationship between SEREAD, weather and climate. Others wanted more time to work through the activities sand see the links between concepts and activities.
- The team presentation was enjoyable.
- Come back!

General conclusion.

The course was attended by a mix of Practising Primary Teachers (8), Training College Students (2), and Facilitator for curriculum change in Primary Schools, and for part of the time, the Science Advisor and the Education Department’s Director of Curriculum. (Unfortunately two other teachers originally attending were unable to do so).

The response to the programme was comprehensively positive and enjoyable not only to the participants but also the presenters. As the course progressed the questioning by the participants became more active in an effort to gain an understanding of not only the nature of the weather and the Argo project, but also other related issues.

The reception we received and the thanks shown at the end was indicative of the positive value placed on the workshop by the participants.

The outcome that science education is enhanced and the Argo project introduced to teachers has been successful. The Resource materials should help the teachers maintain and implement the programme into their schools in a way that is ongoing and self-reliant. Updates and supplements will be useful though.

We asked the teachers to feedback to us their own thoughts and additions as hey use the material in the classrooms so that improvement can be made. Indications are that this will happen.

The workshop also received coverage on Cook Islands National TV news, with one of the workshop presenters being interviewed and the teachers involved being filmed completing one of the workbook tasks.