

Beacon Media
**Professional development for
teachers**

Research skills

The Power Point presentation can be found at:
www.beaconmedia.com.au – Key topics for
Christian teachers

Research Skills

What Are Research Skills?

- Research skills are the skills we need to find out about a particular topic. In this session we will be talking about topics covered in Science, Social Studies and Health.
- When researching a topic, student make use of:
 - written information: books, media, the internet
 - verbal information: conduct interviews, listen to speakers
 - visual information: perform experiments, make observations
- Students then report on information they have found.
- For the Primary school child, research usually involves presenting a project or writing a report on a topic.

Why should we teach students to research?

Student will:

- develop skills for life long learning
- be able to find out information for themselves
- be inspired to learn as they answer their own questions
- become independent learners

Information in, information out

- Student researching has become a key element in modern education
- There is a move away from the teacher pouring information while the students sit passively and listen. (This is not necessarily a good thing because children who live in a highly technical society have lost the ability to sit and listen.)
- No longer does the teacher write chunks of information on the blackboard and ask the children to literally copy it down.

Is there creative thinking involved?

- There is a move towards getting the child to think.
- There is a move towards the students conducting their own research and presenting a report.
- Why? The explosion of information technology

Technology explosion

- The gap between rich and poor is becoming greater. In Australia for example, most students have access to computers or ipads in the classroom. There are interactive whiteboards where the teacher can go on to the internet and Google anything at any time and show the information on the white board.
- More money is being spent on school libraries making available a huge range of reference books at the child's level.
- How does this compare to Fijian Primary schools? Most schools would have few reference books and no access to computers during class time.

What if you do not have a computer or the internet?

- People in the past have learned to read, write and think without the internet.
- There are many geniuses throughout history who made great discoveries without the internet.
- The internet is a bottomless pit of information of all kinds, presented by all types of people, many without Biblical standards.
- How difficult it is becoming to steer students in the right direction.
- We CAN present cutting edge education with little money and few facilities. We have to use creative thinking and be creative in making resources.
- The *Beacon Media* website is an attempt to provide free educational resources. But only free if you can access the internet.
- For those who can't, CDs have been provided. Schools can take the documents on the CD to printing/photocopying services. With a little money you can pay for some print-outs.
- Many schools have received *Beacon Media* CDs. By using the CD you do not have to go on the internet, which saves you money.
- But having enough print-outs or photocopies for all your students will be expensive.
- Instead of printing out enough copies for a whole class, print out and laminate a few copies that can be shared around. Have your students work in groups so that they are not all on the same activity at the same time.

What if you don't have access to a photocopier or library books?

- A good idea is to make your own research cards. You can make these by hand and laminate them.
- You can use the *Beacon Media* resources to make enough cards for a group. One group works on the research cards while the rest of the class is doing another activity.

Example of a research card: reptiles

Prepare a list of questions on the topic.

Provide answers to the questions in dot points – not whole sentences. (This discourages children from copying chunks of information. They have to think about how to construct a sentence from the question and dot points.)

You can still present quality education

- The key is creativity
- The Holy Spirit guides us
- Jesus is the Teacher
- You are His instrument – where there is no money you can create resources in other ways – be resourceful

If you want better results, try something new

Inquiry-based learning

- Inquiry-based learning is where students want to find out about topics of interest. The teacher helps them find out.
1. Teacher finds out what the students want to know. The students present questions.
 2. How do they find out? – observation, experiments, books, photographs, human resources. The teacher sets up a situation where the students can find out answers to their questions.
 3. How do they present the information? Reports, projects, class talks

Where does inquiry-based learning start?

The preschool environment

Learning environments are set up where children:

- notice, wonder, play
- explore, observe, question
- gather, sort, compare
- reflect, share findings with others

What is the pre-school teacher's role?

- To set up the learning environment by providing a rich variety of materials and resources
- To guide the children by asking open-ended questions
- To listens to the children and help them make connections

Examples of play-based learning experiences:

(These notes correspond to the slides on the Power Point presentation)

1. Using elements from the natural environment, e.g. making a flower arrangement – children learn about shapes, colours and textures of plants.
2. Using elements from the natural environment mock cooking with mud/soil/sand and water – children learn about solids and liquids and the way substances mix together.
3. Shells for sorting into shapes and sizes; using an egg carton for one-to-one correspondence
4. Plants: Before this table was set up, the children had been learning about how plants grow by planting their own bean seeds into empty yoghurt containers. We placed some of the children's plants on a light table for them to monitor the growth. We provided a magnifying glass to encourage the children to observe their plants closely, and paper and art materials for the children to draw or paint a representation of their plant at different stages. The children were encouraged to re-visit the table each day and notice the development of their plant. We also stuck up information pictures to allow the children to extend their knowledge.
5. Magnets: This is a space where children can investigate what attracts to a magnet and what doesn't. We set up the activity in a tray of sand and placed various materials in the sand – some magnetic, and some not. We provided magnets for children to use to test the different

- objects, and then encouraged the children to sort the objects into the bowls labeled 'magnetic' and 'not magnetic'.
6. Spiders: This was set up as a spider investigation table. Children were free to play and explore the tray filled with bark, leaves, stones and plastic spiders to provoke their curiosity and imagination. We also provided books for the children to look through or read with the teacher to enable the children to make new discoveries.
 7. Senses: Here we have a table for children to investigate the senses. For the sense of sight there is a tray of coloured beads for children to sort according to colour, as well as an 'Eye spy' book. For the sense of hearing we have plastic bottles filled with different materials such as rice, sand and bells so that each makes a different sound. We also encouraged the children to identify and match the sounds that are the same. For the sense of touch there is a 'feelie' bag with different objects placed inside for children to feel and guess the what the object is. And for the sense of smell there are bottles filled with different aromas such as rosemary leaves, lemon, toothpaste and fragrance flowers.
 8. Hospital dramatic play: This area was set up as a 'hospital dramatic play space, where children could take on the roles of doctors, nurses and patients. On the table we provided pretend doctors' instruments and costumes to further encourage the children's imagination. Dramatic play helps the children to express themselves and practice life skills. It helps enhance social development and provides children with the opportunity to further develop- their language skills. Children's numeracy and literacy skills were also encouraged in the experience. We set up a 'waiting area' with number cards for children to take while waiting to be seen by a doctor and provided drawing and writing materials for the children to use in their play. As teachers we take a very active role in the children's play. We take opportunities to join in with the children as they play, engage in conversations and ask questions to encourage them to learn new things.

How can children find out?

- Exploring
- Observing
- Excursions
- Science experiments
- Speakers
- Books, information cards and computers
- Demonstrations

Primary students can learn research skills by doing projects

Steps:

- Choose a topic – whole class or individual
- Make a list of questions – ask who, what, when, where, why, how
- These questions can become headings for the project.
- Sort the information and organize it under the headings.

Guidelines for teachers in introducing the topic

- Student research on a topic is an extension to *your* input on the topic.
- You will introduce the topic and place God at the centre of the topic.

Examples:

- *Living things and God is Creator*
- *Food and God is Provider*
- *Shelter and God is Protector*

It is not wrong to teach by talking and reading stories or information. Students need to learn to respect a speaker and listen attentively. But it's important that there are opportunities for active learning as well. Research is an example of active learning.

Guidelines for teachers in setting up research material

In setting up research material for students you will need to:

- Screen the material for humanistic and evolutionary viewpoints
- Are there any references to “millions of years”?
- Is there anything that goes against the Bible?

Skills to master

Tips for children when doing research:

First draft:

- When reading information look for the main ideas. Write these ideas as dot points under your headings.
- Do not write whole sentences.

Skills to master

Second draft:

- Expand the dot points into whole sentences.
- Organize the sentences into paragraphs.
- Have it checked for mistakes.

Third draft:

This is your final. Add drawings and coloured headings.
Include references.

What else can be used?

- maps
- charts
- posters
- photographs
- objects

Use example of Tim's archeology dig in the sandpit

Storage of resources

- The tub – one tub per class. Store in the staffroom or office.
- Laminate cards or pages and use them over and over again
- In Australia we are a wasteful throw-away society.
- This is not so in Fiji. Make sure you keep it this way.
- In Australia we photocopy worksheets for students to write on. They get thrown away after use.
- Working in exercise books or on separate pieces of paper is far more economical.

Group work

- Also called “collaborative learning”
- Face to face interaction with each other
- They learn from each other, not just with each other
- They work in groups or 4 to 6

Roles of group members

Each group member can have a specific role:

- Leader (Gets things started and makes decisions along the way)
- Encourager (asks questions – what do we already know? What do we want to find out?)
- Scribe (takes rough notes)

Start with brainstorming

Dividing the work

Then the group leader might divide the group:

- Two can work on answering one question while another two work on a different question.
- Then they share with each other what they have found out.
- The leader assigns jobs for the final presentation – headings, written information, illustrations.

What is the teacher’s role?

- Teacher moves around the groups making sure that all are participating
- Helps out where needed
- Inspires

Presentation of projects

- Posters
- 3D Models
- Hand made books
- Class talks

Self-assessment of a project

- The following questions can be presented to the students BEFORE doing their project so they know where they should be heading.
- The students can use the questions at the END of the project to see how well they have done.

- Have I explained how God is involved in this topic?
- Have I written in my own words and not just copied slabs of text?
- Have I written in full sentences?
- Have I used paragraphs?
- Have I included any of my own original ideas or opinions?

- Have I thought about whether the information is actually true? Or does it include some untruths such as evolution?
- Would any part of this information be against what the Bible has to say?
- Is the project interesting, neat, clear and well designed?
- Does it include pictures / diagrams / graphs?

A summary of what to present in a written research project

- Topic title
- Questions and answers (who, what, when, where, why, how)
- OR main idea headings with information set out under headings
- A sentence or paragraph about God and the topic
- A Scripture to support this
- Diagrams, drawings or photographs
- A list of references