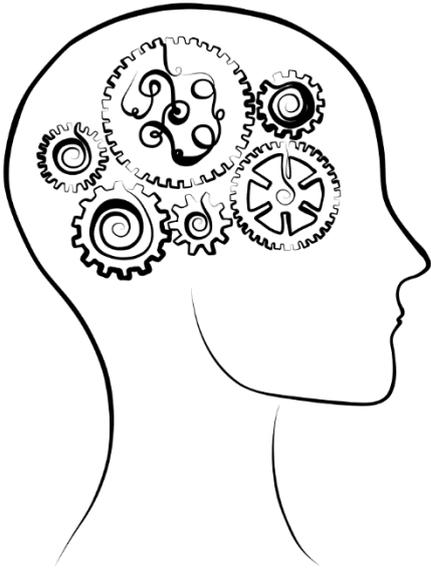


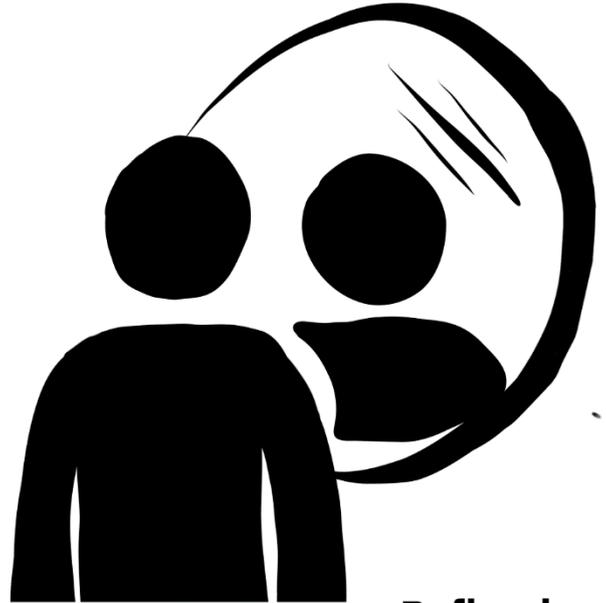
Modern Teaching Methods 2

Advanced methods



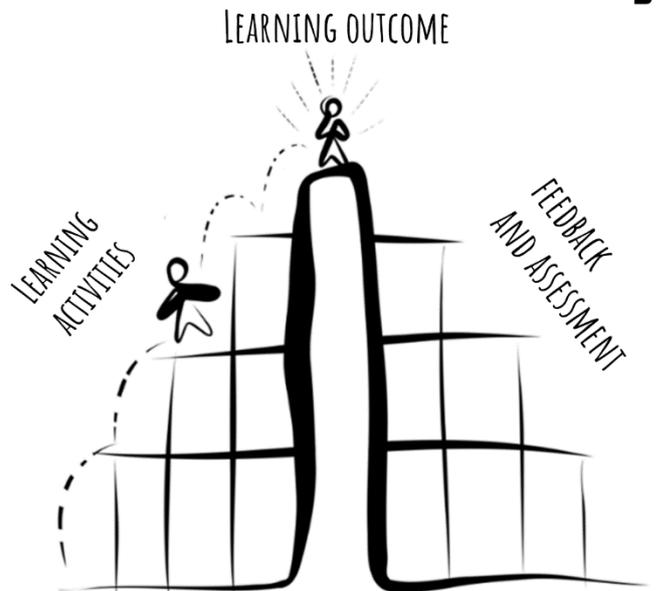
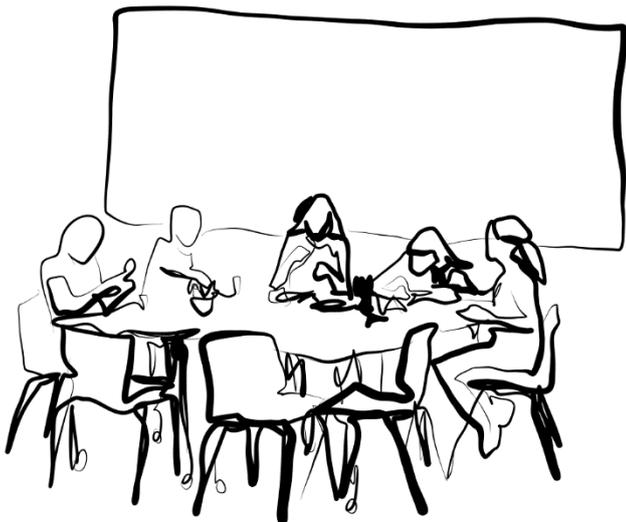
Critical thinking

Active learning



Reflection

Scaffolding



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Introduction

I wrote this book as a companion to the 'Modern Teaching Methods 2' course. The main aims of this book are:

- To develop the skills of self-evaluation and self-reflection required to improve as a practitioner.
- To teach critical thinking skills.
- To suggest more active learning strategies for the classroom.

The book is for teachers in Madagascar. It focuses on teaching methods that work for large classes with limited resources. However, many of these techniques will work in classrooms anywhere.

Copyright

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Thanks

Thanks to everyone involved in the teacher training project who has encouraged me to keep going.

In particular:

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- Lara Dikha, who wrote much of the thinking hats chapter.
- The Christian God who sustained and provided for me as I work on this project.

About the author

Robert has a 1st Class honours degree and a Postgraduate Diploma in Education from Edinburgh University, Scotland. He has worked in education since 2006, including time at top schools such as Jerudong International School, Brunei, Brighton College, England, and St Leonards School, Scotland.

In the 2015–2016 academic year, Robert taught science to students on board a hospital ship run by Mercy Ships in Madagascar. Then he worked for a year in Tamatave before moving to Antananarivo to work at the British school. During this time, Robert developed a very successful Malagasy teacher training programme sensitive to Madagascar’s challenges and opportunities. He also trained teacher trainers to deliver the courses.

He now lives in Scotland, teaching Physics and managing the training project in Madagascar. Robert enjoys mountain biking, cooking, his Christian faith, and spending time with friends.

Get in touch

I’d love to hear if this book was helpful. Contact me via <http://mada-enseignants.org> or via the Facebook page “Centre de formation d’enseignants Robert MacGregor” <https://www.facebook.com/madaenseignants/>. I can communicate well in French and English.

This book is dedicated to teachers in Madagascar.

1. Reflecting on teaching

When a student is stuck or has some things they need to improve, a few words of advice from a skilled teacher can quickly solve their problem.

However, when teachers are stuck or have things they need to improve, they may not have an expert on hand to offer them advice.

Reflection is when one thinks about things that have happened and how to improve them.

Reflecting on teaching involves thinking about how one teaches and identifying areas to improve. Then one can work on ways to improve those areas.

This chapter examines the ways teachers can improve or solve their problems.

- 1) Reflecting on lessons
- 2) Self-evaluation
- 3) Lesson observations
- 4) Student questionnaires

Once areas to improve are identified, the solution is sometimes obvious. If lessons always start late because you arrive late to class, you should change your routine to be on time.

Sometimes the solution is harder to spot. In this case:

- Talk to colleagues about how to solve the problem.
- Read about the topic that needs improvement.
- Think deeply about how to solve the problem

For example, I was struggling to find good homework for my troisième (year 10) class. Once I realised this was a problem, I chatted to my colleague. He suggested a couple of good sources for class homework.

1. Reflecting on lessons

To improve teaching, think about what is successful and what could be improved in lessons.

For each lesson you teach, think of some things that went well and some things to improve. Try not to be too critical; make sure you identify some positives.

For example, when I reflect on a lesson I taught to teachers on language and learning, I could say:

Positives:

- + Persuaded teachers that they are language teachers
- + The activity where we connect words in Dutch with words in French works well
- + Class consensus that language causes problems in teaching
- + Fady was fun

To improve:

-Reading the list of items teachers could do to teach languages from the book was somewhat didactic. It would be better to give teachers a copy of the list of things they could do. Then ask them to pick out and share their favourite ones.

-Should have done thumbs at the end to see if teachers found the lesson helpful

Some questions you could ask when reflecting on a lesson:

Lesson reflection questions

Before the lesson - preparation:

- 1) Was I prepared for the lesson?
- 2) Do I know what I want the students to learn? Did I share the learning objectives with the students?
- 3) Do I have a lesson plan?
- 4) Did I bring all the right resources?

Welcome

- 5) Did I smile and say hello to students and make them feel welcome?
- 6) Did I challenge those who were late?

Starting the lesson

- 7) Did the lesson start on time?
- 8) Did I do something to engage the students at the start?

The lesson

- 9) Was the presentation of the lesson clear?
- 10) Did I assess the students? Do the students know what they got right and wrong?
- 11) Were the students active in the lesson?
- 12) Were the student notes clear?
- 13) Was the lesson linked to the curriculum?
- 14) Do I have a good relationship with the students?
- 15) Do I have the language skills to teach the lesson well?
- 16) Do I have the subject knowledge to teach the lesson well?
- 17) Are students well behaved? If not, did I deal with discipline issues correctly?
- 18) Are students interested and motivated in the lesson? If not, how could I have motivated them?
- 19) Is the lesson differentiated?
- 20) Are students with learning difficulties supported?
- 21) Did I teach any language required for the lesson?
- 22) Did I use an activity from a higher level of Bloom's taxonomy?
- 23) Am I enthusiastic?
- 24) What activities worked well?
- 25) What activities should be improved? How?
- 26) Did I give students practise questions?
- 27) Did I include ideas from the Extra Curriculum if possible?

At the end of the lesson

- 28) Did I finish the lesson with a review?

29) Did the lesson finish on time?

2. Self-evaluation questionnaire

A self-evaluation questionnaire could help you identify things to improve.

Below is one such questionnaire. You might identify many areas to improve. If so, focus on one or two areas at a time.

Self-evaluation

What do I do well? Where do I need to improve?

Activity:

1. Mark each item on the checklist with a number from 1 to 5. '1' is 'strongly agree' and '5' is 'strongly disagree'. '1' or '2' means you are good at this area.
2. Read through the questions a second time. For each question, ask yourself: 'What *evidence* do you have for your answer'. For example, if you think you have excellent subject knowledge, the evidence could be that your students succeed in the examinations.
3. In small groups, discuss *why* you chose the number you did. Do not be critical of anyone – we all have many things to learn.
4. Identify **three** areas (max) that you will work to improve in your teaching.
5. Think and discuss how you will improve in the three areas from Q4.

The Checklist

Subject knowledge

- a) ___ I have excellent subject knowledge.
- b) ___ I know what students need to learn for the curriculum or their examinations.
- c) ___ I know the most effective ways to teach my subject.
- d) ___ My language skills are strong enough for what I teach.

Planning

- a) ___ I plan my lessons.
- b) ___ I plan a variety of different types of activities into lessons to motivate and encourage students.
- c) ___ I actively involve **all** students in lessons.
- d) ___ I have a plan for how the course will fit into the teaching year.
- e) ___ I am creative when planning and make new interesting activities.
- f) ___ I and my classroom are well organised.

Theory of education

- a) ___ I understand how students learn.
- b) ___ I can explain why some activities are more successful or useful than others.
- c) ___ I know about learning difficulties and can support students who have these difficulties.

Classroom teaching

- a) ___ I engage, motivate, and enthuse students.
- b) ___ I am enthusiastic about the subject I teach (and act enthusiastic if I find a topic dull).

- c) ___ I communicate clearly to students in a way that they understand.
- d) ___ I can make lessons enjoyable for students.
- e) ___ My lessons are well differentiated.
- f) ___ My classroom is well managed, and any behaviour problems dealt with firmly and fairly.
- g) ___ I know how to prepare students well for any important exams.
- h) ___ I share learning objectives at the start of each lesson.
- i) ___ Students discuss and share their ideas in class.
- j) ___ In lessons, students can check their answers and correct their mistakes.
- k) ___ Lessons are varied. They comprise of several activities including individual, group and whole class work.
- l) ___ We review what was learnt to ensure it stays in long term memory.
- m) ___ I know the names of my students, as well as a little more about them and their interests.
- n) ___ I am confident and assertive in front of a class.
- o) ___ Classes are often fun.
- p) ___ I teach students to think and learn for themselves
- q) ___ I include activities from various levels of Bloom's Taxonomy.
- r) ___ Students in my class know how well they are doing and how they can improve.
- s) ___ I teach more than the examined curriculum in my classes.
- t) ___ Students have goals.
- u) ___ My students know that I have high expectations of them.
- v) ___ I know how to teach the language requirements of my subject effectively.
- w) ___ I am patient with my students.
- x) ___ I have a good relationship with my students.
- y) ___ homework is relevant and a helpful review for students.
- z) ___ Student books are marked by me, with comments on what they do well and how to improve.
- aa) ___ All students are busy most of the time.
- bb) ___ The work given is at an appropriate level for all the students.
- cc) ___ Lessons start on time.

School and community

- a) ___ I involve the parents and community in education
- b) ___ I know how to protect students from those who wish to abuse them.
- c) ___ My classroom is clean and attractive with some lovely wall displays.

Assessment

- a) ___ I use formative assessment in most lessons to determine whether the students learnt the lesson objectives and give them feedback.
- b) ___ I have a record of how well each student is doing.
- c) ___ I work with students who are not meeting their potential. I help them improve by giving helpful comments or providing extra support.

Working as a team

- a) ___ I share thoughts, ideas, and resources openly with other staff and schools.
- b) ___ I am comfortable asking for help when I don't know something.
- c) ___ I work with parents to help them improve the education of their children.

Personal values

- a) ____ I seek out professional development and am always learning. (Probably '1' because you are reading this)
- b) ____ I have a high degree of integrity and honesty and avoid corrupt practice.
- c) ____ I am committed to teaching and doing whatever I can to ensure my students' best education.
- d) ____ I have a good work-life balance.
- e) ____ I think about lessons that I taught had and consider how they could have been better.

3. Lesson observations

Having another teacher attend your lesson to make notes and give you feedback is an excellent way of improving your teaching. Observations should only be carried out with teachers who are willing to receive helpful criticism.

Giving feedback to teachers is difficult. Not all teachers have the skills to offer helpful feedback. I have been observed and received great feedback. Other lesson observations have been a waste of time.

Sometimes, the teacher being observed may ask the observer to focus on a particular area they find difficult, e.g. behaviour management.

Introducing the observation to teachers

If you are an observer, when introducing the lesson observation, you might say:

- The observation is confidential unless I am concerned about the safety of children.
- The observation is non-judgemental. I want to help you make some improvements in your lessons.
- Try to relax and treat it as a regular lesson.

Sometimes, school management may observe lessons to assess the performance of teachers. Teachers should be told when they will be evaluated by management.

Carrying out the observation:

- Usually, one hour is plenty to observe and provide feedback.
- Arrive slightly early for the lesson, so you can see if the teacher and students start on time.
- Observe for 30-40 minutes.
- Arrange a time to give feedback – either straight after the observation or later in the day.
- Use an observation checklist to help you.
- Talk to a few students in the class. Ask questions to see if the students are following the lesson. E.g. for a lesson teaching division, you might ask: 'Can you show me how to divide two numbers?' 'What are the important points from the lesson so far?' In language lessons, ask questions to find out if the children understand the text or lesson content.
- Walk around the class and observe what individual students are doing. Look at how the weakest and strongest students are doing and look through a few student books.
- However good or bad the teacher is, identify one or two key areas the teacher should improve. **Identifying areas to improve is the hardest part of the observation.** The checklist will help you identify one or two areas to improve. A weak teacher will score poorly in all categories, so choose a couple of the most critical areas to improve.

- Ask yourself, 'how would I teach this lesson better myself?' – this could help you with your feedback.
- Sometimes you will find little wrong with a lesson. In this case, encourage the teacher that they are doing very well.

Observation checklist

The following checklist has is annotated to explain all the parts. Annotations are in *italics*. A blank form for you to copy is in Appendix 1.

Teacher Observation checklist

Name of teacher: _____ School: _____

Name of observer: _____

Class: _____ Date: _____ Time: _____

Number of students: _____

1. Organisation

Area	Score (0-5, 5 is good!)
Pre-planned	<i>Is there evidence of lesson planning?</i>
Lesson plan present	<i>Has the teacher used a written lesson plan? Not essential, but if the lesson is poor, you might want to discuss planning.</i>
Clear aims and objectives	<i>Is it clear to the students what they are to learn?</i>
Resources pre-prepared	<i>Has the teacher prepared any of the required resources before the lesson? (if resources required)</i>
Lesson starts/finishes on time	<i>Does the lesson start/finish on time?</i>

2. Student outcomes – this section is essential!

Area	Score (0-5, 5 is good!)
Are all students being challenged?	<i>Are all the students (weak, average and strong) being appropriately challenged? That means they are pushed to do things they find challenging but not impossible.</i>
Are all students making progress?	<i>Are all students learning? Consider the weak, average and strong students. You might find chatting to a few students will help you with this.</i>
Are all students engaged, and at best inspired?	<i>Are all students engaged in the lesson and taking part? Or are one or two students engaged at a time, say the student who is writing on the board or answering a question?</i>

3. Lesson content

Area	Score (0-5, 5 is good!)
Clear board work	<i>Are the board contents readable and easy to understand?</i>
Clear presentation and explanations	<i>Is what the teacher says clear?</i>

Students are active in their learning	<i>Are students active in their learning or passive? Very important.</i>
Learning difficulties are catered for	<i>Do students with learning difficulties receive help that is appropriate to their needs? This box will often be left blank as it can be hard to know in 40min.</i>
Teacher knows students	<i>Does the teacher know their individual students? Do they know which students are strong and weak? Do they know who needs encouragement, and who can be left to work on their own?</i>
Teacher language skills	<i>Is the teacher competent in the language of instruction?</i>
Students understood the lesson?	<i>Did the students understand the lesson? Talk to a few students and ask questions to see if they understood?</i>
Differentiation	<i>Is the lesson designed for students of all abilities?</i>
The level is appropriate for the students	<i>Is the lesson too easy/hard? Or at the right level?</i>
Good classroom management	<i>Are the class engaged and attentive? Or messing around and not doing what they should?</i>
Teacher subject knowledge	<i>Does the teacher have enough subject knowledge?</i>
The teacher has high expectations of students	<i>Does the teacher expect enough of <u>all</u> the students? While some students may be weak, others can achieve more.</i>

3. Assessment

Area	Score (0-5, 5 is good!)
The teacher assesses what students have learnt.	<i>By the end of the lesson, does the teacher know what students have learned and what they found difficult? You may need to ask the teacher what they plan to do at the end of the lesson if you don't have time to observe the whole lesson.</i>
Does the teacher use what they know of the students to help them progress?	<i>Does the teacher use their knowledge of the students' strengths and weaknesses to support their learning?</i>
Student work is marked with feedback	<i>Check the exercise books – is there teacher marking and feedback?</i>
Students know how to improve	<i>Do students know how to improve? Ask them!</i>

4. Other

Area	Score (0-5, 5 is good!)
A great relationship between teacher and students	<i>Do the students and teacher get on well?</i>
Teacher encourages students	<i>Does the teacher ever praise the students?</i>
Mutual support - students help each other	<i>Do students help each other?</i>

Teacher is enthusiastic	<i>Does the teacher show enthusiasm for what they are doing?</i>
-------------------------	--

Comments/notes:

Giving feedback after the observation

When giving feedback, share some positives from the lesson and give constructive criticism. Often a feedback session might look like this:

1. Ask the teacher, 'What did you like about your lesson? What could you have done better?'. Most Malagasy teachers struggle with answering this type of question. However, it is good to encourage self-reflection.
2. Talk about what you saw during the lesson and ask questions about parts you were unsure of, 'why did you decide to do ...?'
3. Share a few things (at least two or three) that you liked about the lesson. Even simple things such as the class were quiet when you talked; you started on time; your board work was clear. I sometimes find it hard to find positive things to say about lessons.
4. Share some ideas, no more than three, of what they could improve. The suggestions must be achievable.

Do **not** share your notes with the teacher or say tell them how they compare with other teachers. Every teacher has different training and ability. A weak teacher may not have a strong education, and that may not be their fault.

After the observation, the headteacher often wants feedback. If you are observing an individual teacher, explain you cannot discuss individual teachers. Otherwise, teachers may be afraid of the observation rendering it not so useful. However, you could make some general points about how to improve the whole school.

In some cases, the purpose of the observations might be to evaluate teachers. If this is the case, be clear to the teachers why you are observing them. Say that you will be discussing their lesson with the headteacher. Evaluative observations are much more stressful for everyone involved and are less useful to improve teaching.

4. Student questionnaire

Giving students a questionnaire can show teachers lessons from a student's perspective. It is a great way to identify areas that are good and areas for improvement. I sometimes give questionnaires anonymously so students feel they can be honest.

A selection of questions you might use follow – you might add some of your own.

- What do you like about the lessons?
- How could the lessons be improved?
- What are some of your favourite moments in class in the last year?
- What are some things you found challenging in class in the last year?
- What advice would you offer to a student planning on taking the class?

- What parts of the course did you find hard to understand?
- What parts of the course were straightforward?
- How much did you enjoy the lessons (1=did not enjoy, 5= enjoyed a lot)
1 2 3 4 5
- How hard did you find the course (1=very easy, 5=very hard)
1 2 3 4 5
- How confident do you feel about the subject (1=not confident, 5=very confident)
1 2 3 4 5

Enjoyment of learning is essential, but it is rare for students to circle '5'. Some students will always find courses easy or hard. If the whole class finds the lessons difficult, teaching the lesson content differently might make it more understandable.

Activities

1. Complete the self-assessment checklist.
2. Pick some areas from the self-assessment to work on improving. Read one of my textbooks about the area of teaching you want to improve or do some other research.
3. Arrange to observe the lesson of a willing colleague and provide feedback.
4. Find someone you respect who has read this book. Ask them to observe one of your lessons and provide feedback.
5. Give your students a questionnaire and try to act on what you learn from their responses.

2. More active learning strategies

“Passively listening to a lecture can be useful at promoting learning at the lower end of a taxonomy of learning such as – to ‘remember’ and ‘understand’ – but is not as good at promoting higher-level skills like ‘apply’, ‘analyse’ and ‘evaluate’” Jess Gifkins, Lecturer, University of Manchester

In my first book, I shared several active learning strategies. A few more simple yet effective strategies follow:

No hands up

When asking questions, often teachers pick the students who put their hand up. In this strategy, students are asked not to raise their hands. Instead, the teacher decides who is going to speak. All students or groups should contribute over a few lessons. Some teachers tick off the students they have asked questions to ensure they don't miss anyone out.

An example:

Teacher: What is 45×10 ? [pause] Dinah – how will you work that out?

Dinah: [long pause]

Teacher: Josianne, can you help Dinah out?

Josianne: Multiplying an integer by 10, you can add a zero on the end; 450 is the answer.

Teacher: Bravo!

No hands up encourages students to become more confident when giving verbal answers. Students will be more focused because they expect to be questioned. However, don't embarrass students and allow them to pass if they don't know the answer. Choose questions that are appropriate to the student's level and give students a few seconds to think of the answer.

Beat the teacher

In this activity, the teacher carries out a task and includes some deliberate errors. The teacher asks the students to spot as many errors as they can.

For example, in a French lesson, the teacher could:

- 1) Write up the following:

Je m'appelle Robert. Je suis professeur de science. J'habite en Toamasina depuis un ans demi. Mon premier travail etait professeur avec MercyShips. Maintenant J'ai un ecole de formation d'enseignants ici

- 2) Ask the students to Think Pair Square Share to spot the mistakes
- 3) Ask one group to share one mistake. Everyone in the class then votes (thumbs up/thumbs down) if the group were correct. Then another group has an attempt
- 4) Finally, everyone writes down the 'corrections'.

Some ideas about where 'Beat the teacher' can be used:

Languages: Pronunciation, syntax, tenses, spelling.

Technical writing: Spot where the teacher could have used a technical word but didn't. Find errors or omissions in a technical description.

Science: Miss some things out of an experiment description.

Maths: Make some mistakes when solving a problem that students have to spot. E.g.:

$$5-10:2 = -5:2 = -2.5 \quad (\text{correct answer} - \text{do the division first: } 5-10:2 = 5-5 = 0)$$

History/RE/Literature: The teacher pretends to be a character in the story but makes some deliberate mistakes.

Students find *Beat the Teacher* highly engaging.

Practice problems

Practice problems may seem an obvious activity to do with students. However, in Madagascar, I rarely see teachers making the most of practice problems.

Often, I see a lesson like this:

- a) The teacher writes questions up on board.
- b) The teacher watches the class while they work.
- c) A student writes what might be the correct answers up on the board with no explanation.

This type of lesson is full of missed opportunities. A much better way to do it is:

- a) The teacher writes the questions up on board - no change
- b) The teacher walks around the class and hurries the students who haven't got started saying: 'come on, Jack, let's get started'...or similar.
- c) Once all students have started, the teacher goes around the classroom and marks some students work and helping them where they got stuck. The teacher may focus on struggling or weak students by supporting them to do the problems. In a large class, a teacher *cannot* mark everyone's book in a lesson. Students say that personal input from a teacher is very motivational.
- d) **The teacher** writes up the answers and *explains* them as they write. The explanation helps the students who didn't know how to solve the problem.

Alternatively, a student writes the answers on the board while the class are working instead of in their book. Once everyone has completed some questions, the teacher leads a class discussion to decide if the student's answers are right or wrong. Choose a confident student who is not always right to do this! Be nice to them; don't choose someone to embarrass.

Remember, when choosing the questions, you should differentiate. The first few questions should be easy. After that, the questions should get more complicated. I would expect only a few students to finish the most challenging problems in a lesson.

Using practice problems effectively can make a massive difference to the motivation and achievement of students.

3. Abstract and Concrete thinking

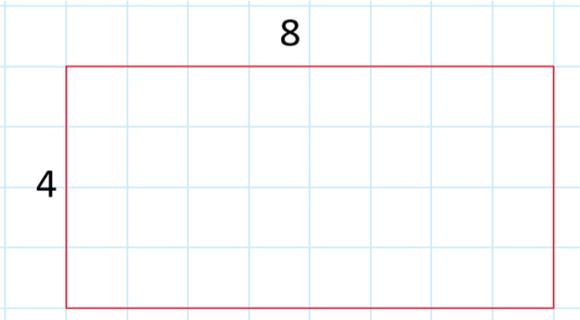
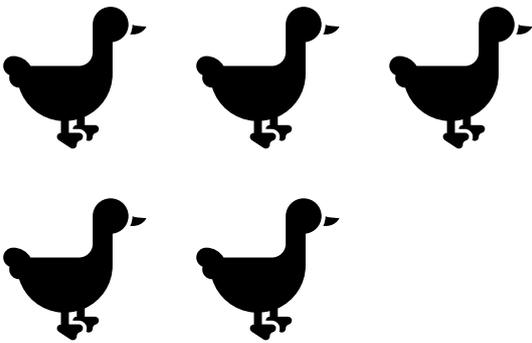
“I knew the theory, but now I know how to implement it in a classroom” Comment from one of our trainees

Our trainee knew the **abstract** pedagogy from university. He didn’t know the **concrete** ways to put it into practise until he completed our course.

Students have similar problems in the classroom. Things can be challenging to learn when taught in an abstract with no real-life application.

Table 3.1 below has two columns. The first column gives the abstract idea, and the second a concrete example of it.

Table 3.1

Abstract	Concrete
The area of a rectangle is length x breadth	Find the area of this rectangle by counting the squares it contains (or for older students by multiplying the side length) 
There are five ducks	Count the ducks:  <p>NB for small children, numbers are abstract ideas. For older people, numbers aren’t abstract.</p>
The music has the form of ABAB.	Listen to the music and point out how the structure is verse, chorus, verse, chorus.
For over 1000 years, before science, philosophers liked abstract ideas. They thought that men had more teeth than women because men are bigger than women. Nobody thought to count the number of teeth. They were purely abstract thinkers!	Counting the number of teeth that men and women have and finding out they usually have the same number

Describing an active learning strategy to some teachers.	Demonstrating the active learning strategy.
The wood in the trees could build a boat	I see some trees.
When a switch in a circuit is closed, current can flow.	Turning on the light switch turns on the light.
The concept of freedom.	Acting, speaking or thinking as you want.
Verb, Noun, Adjective	The words: Singing; Bicycle; colourful.
An exothermic reaction is one where heat is released in the reaction.	A fire.
If I have n egg-laying chickens, I will have $20n$ eggs per month (note, algebra is abstract)	A chicken will lay around 20 eggs in a month. So if I have 20 chickens, I will have $20 \times 10 = 200$ eggs a month.
Ariary = British pounds \times 4500	10 British pounds is 45,000 Ariary
The concept of international communication.	Showing a model showing how messages travel around the world via undersea cables and satellites.
To make the plural of many nouns in English, add an 's' on the end. This rule does not always work.	Room \rightarrow Rooms; Chair \rightarrow Chairs; Boat \rightarrow Boat but Sheep \rightarrow Sheep!

Abstract thoughts are **more general** and apply to a broader variety of cases. **Concrete** thoughts are specific and can be seen by students and often touched.

For example, the concept of a verb is **general** and applies to everyone. The words: dancing, running, playing are much more **concrete** as examples of the general idea.

A physics equation is abstract. An example of the application of an equation is concrete.

Children’s brains develop as they grow older. Children develop the skills of abstract thought around the ages of 9-14. This doesn’t mean they can’t have any abstract thoughts before 9. Most curricula don’t teach abstract ideas to younger children. They focus on concrete ideas with younger children.

How do you teach abstract ideas?

In the ‘Bloom’s Taxonomy’ chapter of ‘Modern Teaching Methods’, I was careful to introduce concrete examples of activities before discussing more abstract examples. I did this because it is much easier to think in concrete terms before teaching the abstract idea.

Example 1:

A **concrete** example of how to teach something, in this case floating and sinking:

1. Carry out experiments to see what floats and sink. Place different objects in a container full of water. Observe which ones float or sink.
2. Compare the density of the objects with water (which has a density of 1.0g/cm^3):

Material	Density (g/cm^3)	Float/sink?
Wood	0.84	Float
Plastic	0.76	Float
Steel	8.0	Sink
Aluminium	2.7	Sink

3. Point out that the materials with a density higher than water sink, and the materials with a density lower than water float. This statement is an abstract idea.
4. Revisit the experiment and check the conclusion is correct: 'Wood has a density of 0.84 g/cm^3 . 0.84 g/cm^3 is less than water, so wood should float - it does. Aluminium has a density of 2.7 g/cm^3 . 2.7 g/cm^3 is more than water, so it should sink - it does.'

Writing **abstractly**, you can do the following:

- a) Give at least three concrete examples of something.
- b) Introduce the abstract connection.
- c) Show how the examples you used fit the abstract connection.
- d) Repeat the abstract idea and get students to use the abstract idea to answer questions.

Example 2:

A **concrete** example of how to teach how to convert between Ariary and Franc:

a) – concrete examples

1. Start with a lesson where students multiply large numbers by 5:
 - i) $5000 \times 5 =$
 - ii) $1000 \times 5 =$
 - iii) $200 \times 5 =$

You might teach the trick of multiplying by ten then dividing by 2.

2. Explain this is what you do converting Ariary to Franc – multiply by 5. Students try the following:

- i) 100 Ar in franc is:
- ii) 2000 Ar in Franc is:
- iii) 500Ar in franc is:

b) – introduce the abstract connection

3. Teach the formular: $Fr = Ar \times 5$

c) – showing how the examples fit in the formula

4. Go back and show how you can substitute the Ariary value into the formula:
 - i) $Fr = Ar \times 5 = 100 \times 5 = 500 \text{ Fr}$
 - ii) $Fr = Ar \times 5 = 2000 \times 5 = 10\,000 \text{ Fr}$
 - iii) $Fr = Ar \times 5 = 500 \times 5 = 2500 \text{ Fr}$

d) – Give students some problems to solve.

Activity

1. Identify several abstract ideas in your subject that you will teach soon.
2. Plan how you will teach these abstract ideas in your subject.

Further reading

"Abstract and Concrete." Wikipedia, Wikimedia Foundation, 30 Jan. 2021, en.wikipedia.org/wiki/Abstract_and_concrete#Concrete_and_abstract_thinking.

"Concrete versus Abstract Thinking." *Meaningful Learning*, 23 May 2015, annezachryonlearning.wordpress.com/2010/07/07/concrete-versus-abstract-thinking.

4. Open and closed questions

Date night is much better knowing the difference between open and closed questions

There are two types of questions: open and closed.

Table 4.1 lists some **closed questions** and a related **open question**. Read the table row by row. Don't think about the answer to the question. Instead, think about how the question is phrased and the type of responses that are possible.

Table 4.1

Closed questions	Open questions
What is 5x10?	Give me an example of a multiplication sum with the answer.
What did you eat for breakfast?	Tell me about your favourite breakfast foods.
Are people from the countryside more at risk of Plague than those from the cities?	Why do some areas of Madagascar have more cases of Plague than others?
Do you think the current President is doing a good job?	What is good and bad about the current President?
When did you get your first bicycle?	What do you remember about your first bicycle?
What students do you find challenging?	Tell me about your challenging students.
What is the name of this plant?	Tell me about this plant.
Are you happy?	How are you feeling?
Where is Madagascar located? ¹	
What is an acid?	What do you think will happen if we add acid to this solution?
What does the word 'jump' mean?	Guess what the word 'incomplete' means ²
What does 'climate change' mean?	What do you think the effects of climate change in Madagascar will be?

Discuss

Discuss what you think the difference between **open** and **closed** questions.

Closed questions require a little thought. You will get short answers which are either right or wrong. Closed questions require recall of information.

Open questions require more thought and result in longer, more descriptive answers. The respondent has a much wider choice of response. Open questions promote thinking at higher levels of Bloom's taxonomy. Open questions are harder to mark because there may be a variety of correct answers. Open questions give students a chance to: think and reflect, offer opinions and feelings, and give some control of the conversation to the respondent.

Discuss

1. Write some closed questions. Discuss with others to see if you are right.

¹ Malagasy students learn a standard answer to this question which is tested in national examinations.

² In many languages, looking at the word carefully can help the reader work out what the word means, even if they don't know the word. For example: 'incomplete' can be split up into 'in' = not and 'complete', so the word means not complete. Some words can't be guessed, asking for the meaning of those would be recall, a closed question.

2. Write some open questions. Discuss with others to see if you are right.

In class, teachers mostly ask closed questions. This is not always bad – knowledge is a key part of learning. However, asking open questions makes students think deeply about your lessons. A good teacher will ask a variety of open and closed questions in their lessons.

Wait time

When questioning, teachers usually know the answer in advance. Often teachers ask a question and expect an immediate response. However, the students need time to think carefully about the answer. This time is called thinking time. When asking a question, slowly count to five before expecting an answer. Difficult or open questions require much longer. You might also use think pair square share to help improve the quality of responses.

Allowing enough thinking time means students will give higher quality answers.

Questions

A list of questions follows. **Don't answer the questions.** Instead, work out if each question is open or closed—answers at the end.

1. What is the name of the black and white lemur?
2. Do you meet your friends at the weekend?
3. What are the main differences between Antananarivo and Tamatave?
4. How do you feel about the different religious beliefs in Madagascar?
5. What colour does universal indicator turn in an acid?
6. What are the main styles of music in Madagascar?
7. What are the colours of the rainbow?
8. What recent news have you found interesting?

Answers: 1.closed 2.closed 3.open 4.open 5.closed 6.closed 7.closed 8.open

Activity

Develop open questions for your subject and use them in class. Reflect on which questions were helpful for learning.

5. Six Thinking hats®

Adapted from an original text by Lara Dikha

“Thinking hats gives me different types of thinking questions that I can ask when I am doing my work.”, student⁴

Edward de Bono, a famous thinker, developed the technique of thinking hats.³ Thinking hats are a child-friendly way to talk about different ways of thinking and understanding.

Different coloured ‘hats’ can be used as a questioning technique to help understand what is being studied.

There are six different coloured ‘hats’. Each hat represents a way of thinking, asking a particular type of question.

The six hats are:

- **White hat: Facts hat** – asks questions about the facts surrounding the subject of discussion.
- **Red hat: Feelings hat** – asks questions about how people feel about the subject of discussion.
- **Green hat: Creativity hat** – asks questions to generate new ideas about the subject of discussion.
- **Blue hat: Big picture hat** – asks questions that put the subject of discussion in the big picture.
- **Yellow hat: Benefits hat** – what good things are there around the subject we are discussing.
- **Black hat: Negatives hat** – what negatives are there around the subject we are discussing.

Younger children love pretending to put on a hat and do activities or answer questions that go with that hat. Older children and adults find different ways of approaching a situation very helpful.

The order that thinking hats are used is not fixed – you can change it as is necessary.

Table 5.1 below provides a guide of the different types of questions each hat asks. The questions in the table are written for a book that the students are reading. You will need to adapt them for your context.

³ Bono, De Edward. *Six Thinking Hats*. Penguin Life, an Imprint of Penguin Books, 2017.

Table 5.1

<u>Hat Name</u>	<u>Hat Colour</u>	<u>Possible Activities or Questions</u>
Facts Hat (Related to gaining knowledge)	White Hat	<ul style="list-style-type: none"> • What do I know? • What do I want to know? • How am I going to find it out? • What are the facts? • What information do I have already? • Make a mind map of the facts so far.
Feelings Hat (Reactions to reading)	Red Hat	<ul style="list-style-type: none"> • How did my feelings change while reading? • How did the character's feelings change during the story? • How did I feel before I knew this information? • How do I feel now that I know this information? • How will my life be different because of what I have learnt? • What do I like about it? • What don't I like about it? • Do I believe this is true? • Is it a good example?
Creativity Hat (Spark imagination and explore new ideas)	Green Hat	<ul style="list-style-type: none"> • How could we solve the problem in the story? • Use this information to make something like a poster, a letter, a drawing, or a story? • How could we do this differently? • What is my idea? • Write a new ending for the story. • Can I create something new? What new ideas are possible?
Process Hat (To do with planning and what is needed)	Blue Hat	<ul style="list-style-type: none"> • What thinking is needed? • What have we read so far? • What can we do next? • Where can we go from here? • Why is this worth reading or doing? • What are the good features or points? • How can this be done? • How can I make this work? • Why is this is a good thing?

Benefits Hat Focusing upon the positive)	Yellow Hat	<ul style="list-style-type: none"> • Find all the positive pieces of information in the book. • Talk about the best parts of the story. • Talk about your favourite characters from the story. • Talk about what you can learn from the story and why it is valuable. • Talk about the lessons that can be learnt from the story.
Cautious Hat (Focusing upon the negative)	Black Hat	<ul style="list-style-type: none"> • Find all the unhelpful information that didn't need to be included. • Talk about your least favourite parts of the story. • Talks about the characters you liked the least and why you liked them the least. • Are there bad examples so we could learn not to be like certain characters in the story? • Can this be done? • What could go wrong? • Is this the best solution? • Is this information true? • How do we know this information is true? • What are the weaknesses?

Thinking Hats are great because they focus thought on one aspect of a topic. As a result, the quality of thinking and ideas hugely improves.

Using the six thinking hats® in a primary reading lesson

Once the children have read the story (or you have read the story to them), you might ask questions like:

'We are going to put on our imaginary white hat and thinking about what we know happened in the story. Solofo, what do you remember about what happened?'

'We are going to put on our imaginary black hat and ask if the information is true. Rotsy, do you think the information is true and why?'

Finding answers in a text

Sometimes the answers to questions are written in the text. For example, we could have a text containing: 'The big black dog was chasing the fluffy white cat.' You could ask the question 'What colour was the dog? Let's put on our white hat and find the answer in the words on the page.'

Sometimes answers to questions are hidden in the book, and students need to look at clues like the pictures to find the answers. For example, the book might have a picture of a fluffy white cat looking very scared. You could ask the question: 'how does the cat feel while the dog is chasing him? How do you know? Let's put on our red hat and find the answer by looking at the words on the page and the pictures of the cat to see how he might be feeling.'

Sometimes the answer to questions is found by thinking, and students need to use their knowledge to find the answers. For example, 'Why do you think the cat is running away from the dog? Let's put on our blue hat to think. What do we already know about cats? What do we already know about dogs? Will that help us understand what is happening?'

Other lessons you you could use thinking hats

Thinking hats can be used for more than literature subjects. They are also useful in pastoral discussions to discuss a student's behaviour or difficulties with learning.

Some examples of where teachers have used thinking hats successfully⁴:

- In Mathematics, students take turns to share their thoughts and ideas about fractions. When wearing the red hat, one student said they were scared about sharing the answer. A student with the black hat on said they were anxious about the sign used in a problem.
- When self-assessing work, students used the following hats:
 - Yellow Hat – What have I done correctly? (checking their work against the mark scheme)
 - Black hat – What have I done wrong?
 - Green hat – Could I have approached the task differently and done better?
 - Blue hat – What will I do in future to enable greater success?

Activity

1. Choose a topic that you think would suit a class discussion using thinking hats.
2. Develop some questions to use with your class.
3. Try the lesson out. Reflect on what was good and bad and how you can improve it.

⁴ "UKEdMag: Implementing Thinking Hats Effectively In The Classroom by @JMckay1972." UKEdChat, 13 May 2019, ukedchat.com/2019/05/13/thinking-hats/.

6. True or not?

In my three years living in Madagascar, I heard many claims from many people about what is true. Some were true; Some were very convincing but false; Others were clearly false. Many of the false claims were very harmful.

Debating what is true and not helps students think critically about ideas. Questioning and understanding different perspectives on truth is essential. It can make the difference between success and failure in life.

These strategies would work particularly well in College or Lycée and could be simplified for primary schools.

Strategy 1: Claim, Support, Question

This strategy works as follows:

1. Present the claim – a statement that might be true or false.
2. Think about what supports the claim.
3. Think about what does not support the claim.
4. Use this information to decide whether the claim is true, partially true, or false.

The following example is of a class discussion in a religious studies class. The statement to discuss is: 'All religions believe in the same God.'

1. Tell the class 'Today, we will be discussing this claim: 'All religions believe in the same God.'
2. Ask the students to come up with ideas that support the claim.
3. Ask the students to come up with questions about the claim or things that do not support the claim.
4. Ask the students to consider what their own opinion is and how they came to that opinion.

Note: it can be challenging to run debates like this unless you know the discussion subject very well. I recommend you stick to a topic you know or do a lot of research first.

Some possible answers you might get from the class:

Things that support the claim	Questions about the claim/Things that do not support the claim
My friends changed religion, and they said that nothing much changed, just the building they were in	Different people have different characters. Other religions paint a different picture of the character of God.
All the religions I know say that God created the world	Some religions believe in many gods.
My pastor says all religions are the same	Many religious leaders say that different religions have different gods.
Islam and Christianity believe in one God	The Christian God is more forgiving than other Gods who need sacrifices or perfection.

If you notice students are missing some important points, it is OK for you to add some.

The purpose of a discussion like this is to consider the viewpoints for and against the argument. Once the views have been heard, an individual or group conclusion can be made.

Strategy 2: True for who?

Most of the time, something is 'true' or 'false', partially true. However, there are times where people have different opinions with good reason.

For example, a mining company thinks it is a great idea to build a mine next to a town. They will extract valuable minerals, create lots of local jobs and make money. Some locals think this is an excellent idea because they have a well-paid job with the company. Other locals believe this is a terrible idea as the mine will be on their land and will force them to move to a new house.

In this example, there are three different perspectives on the project:

1. The mining company.
2. The locals who benefit.
3. The locals who have to move.

'True for who' considers the different opinions people might have about something. Considering different views helps students to understand things more fully.

It works like this:

1. **Share** a statement that might be controversial with the group.
2. **Discuss** the following questions:
 - a. Who might have made the statement?
 - b. What were the interests and goals of people making the statement?
 - c. What was at stake – what will be lost if people disagree with the statement?
3. **Brainstorm** and think about the statement from different points of view.
4. **Dramatise.** Choose one of the points of view and imagine what that person would think. Would (s)he think the claim is true? False? Uncertain? Why? Go around the circle and speak, acting as one of the people. Try to be balanced by dramatising some people who have different points of view, even if you disagree with them. Being balanced will help you understand why some people think differently:
 - a. I am ...
 - b. My viewpoint is ...
 - c. I think this claim is true/false/uncertain because...
 - d. What would convince me to change my mind is...
5. **Stand back.** Forget your character from the dramatising step. Think instead about the opinions given by all the characters. Now you have thought about them all:
 - a. What do you now think about the statement?
 - b. What new ideas or questions do you have?

Example:

1. Share a statement with the group. I deliberately chose a controversial one in 2021 that is likely to provoke a vigorous debate:

Madagascar should never lockdown due to COVID. The effects of lockdown are worse than the impact of COVID.
2. Discuss the following questions:
 - a. Who might have made the statement?

Sometimes this is difficult to guess. In this case, many people in Madagascar might have made this statement.

- b. What were the interests and goals of people making the statement?

The goals could be selfish. Maybe their livelihoods were disrupted by the lockdown. Perhaps the government or NGO cares about the economic success of the country.

- c. What was at stake – what will be lost if people disagree with the statement?

Many livelihoods may be lost. Also, many lives may be lost if people were to starve due to lack of income. (of course, many lives could be lost if people did not take care to prevent COVID-19!)

3. Brainstorm the people who might have different points of view. Possible answers (there will be many more):

- *Teachers*
- *Bus drivers*
- *Doctors*
- *Public health officials*
- *Young people*
- *Old people*
- *Government*
- *Religious*

4. **Dramatise.** For each person write sentences starting with:

- a. I am ...
- b. My viewpoint is ...
- c. I think this claim is true/false/uncertain because...
- d. What would convince me to change my mind is...

Some examples:

- *I am a bus driver. My viewpoint is I don't think we should lockdown. I think this because now I have no work and can't feed my family, we are starving, and I am worried some might die of hunger. I might change my mind if the government could pay me some support*
- *I am a doctor. I have seen people dying from COVID-19. My viewpoint is If we don't lockdown, we won't be able to treat sick people. I might change my mind if I knew that COVID-19 cases were decreasing or we had a treatment or vaccine.*
- *I am a young person. My viewpoint is: why should my life be ruined by something which won't even affect me? I might change my mind if I saw other young people dying or having a long-term illness with COVID-19.*
- *I am a young person. My viewpoint is that we should lockdown, so my older friends and relatives are kept safe from the virus. I might change my mind if older people were vaccinated. **Note how two people from the same 'category' can have different views'.***
- *I am an old person. My viewpoint is I think we should lockdown as it is very likely I would die if I caught COVID-19. I would change my mind if I were vaccinated.*
- *I am a religious leader. My viewpoint is that God requires communal worship so I don't support the lockdown.*
- *I am a religious leader. My viewpoint is that lockdown is essential because we have already had some COVID-19 deaths in the church. I want to prevent any more of the congregation from dying. I would change my mind if there were very few cases of COVID.*

5. Stand back.

- a. What do you now think about the statement?
- b. What new ideas or questions do you have?

Some examples of thoughts:

- *I now think we should lockdown as I don't want older people to get sick and perhaps die.*
- *I think we shouldn't lockdown because if we do, many people won't be able to feed their families and will die from hunger.*
- *I'm not sure we don't want people to die of hunger, but we don't want older people to die.*
- *What will happen in the long term? If we lockdown, won't COVID return when we stop the lockdown?*

A challenging part of the running of this activity is coming up with an initial statement. It should affect a wide range of people and be controversial enough that people hold different viewpoints. Looking at the current issues in local, national, and international news might help.

Strategy 3: Asking questions about a statement

When someone makes a significant statement, the following questions can be asked about the statement:

1. Is it a sensible statement - could it be true?
2. What evidence do I have that could support this statement?
3. What evidence do I have that could oppose this statement?
4. What advantage could the statement bring to the person who was saying the statement? Do they have a *vested interest* in the statement?
5. What precedent is there for this statement being true? Has something like this happened before?

Try these questions with some of the following statements. I heard them during my time in Madagascar:

- a) The President's election campaign is paid for by some wealthy businessmen who control much of Madagascar.
- b) Mercy Ships stole 20 tons of Gold, and there is clear evidence of this.
- c) The government controls the weather.
- d) Vote for our political party, and we will transform the economy and bring jobs for everyone.
- e) 5000Ar Mineral water from France is excellent to spray on yourself when you are hot.
- f) All mining companies are here for something other than what they tell us. Ambatovy claims to be about nickel and cobalt but are mining something more valuable.
- g) We should never work for the government, the police, the army, or the state hospitals because they are corrupt.
- h) I need you to pay now for your unfinished printing because the boss is going to La Reunion tomorrow. He needs money even though we haven't finished your work.

Important note: I am sure that b), c), d), e), f)) and g) are false. h) was true in my experience. a) seems false but I don't have enough evidence to be sure.

It is important to teach how to critically consider statements and not believe everything one hears.

Read more

This website has many thinking tool routines in English. You could use <https://translate.google.com> to translate it into French.

“Project Zero’s Thinking Routine Toolbox.” *PZ’s Thinking Routines Toolbox* | Project Zero,
<http://pz.harvard.edu/thinking-routines>

Activity

Try these techniques out in your lessons. Reflect on how useful the activity was and how you could improve how you run it.

7. Teaching stories

“We no longer look at stories just as stories, but we are able to pick out the deeper meaning for our lives” – user of this method

Teaching children to read and think about stories is an essential part of education. The technique in this chapter can teach any type of story. It was initially developed to teach Bible stories. It fits well with the moralistic story genre, though it could be adapted to other genres.

Christian primary schools in Madagascar might use a French children’s Bible. Or you could simplify words in the Malagasy Bible.

A unique feature of this chapter’s method is that listeners or readers work out their conclusions about the story.

We will follow an example lesson studying the story of Zacchaeus from the Bible.

Text in *italics* is instructions; plain text is what you might say.

a) Introduce the passage.

In this section, you set the background context for the part of the story you will tell. Tell the class you will ask someone to retell the story after you’ve read it.

“We are going to read the story of Zacchaeus (Luke 19). Jesus has been telling his disciples he must go to Jerusalem to die. He is on the way to Jerusalem, and this story happens. Jericho is about 30km from Jerusalem.

I’m going to read the story and then ask someone in the class to try and retell the story.

19 Jesus went on into Jericho and was passing through. ² There was a chief tax collector there named Zacchaeus, who was rich. ³ He was trying to see who Jesus was, but he was a little man and could not see Jesus because of the crowd. ⁴ So he ran ahead of the crowd and climbed a sycamore tree to see Jesus, who was going to pass that way. ⁵ When Jesus came to that place, he looked up and said to Zacchaeus, “Hurry down, Zacchaeus, because I must stay in your house today.”

⁶ Zacchaeus hurried down and welcomed him with great joy. ⁷ All the people who saw it started grumbling, “This man has gone as a guest to the home of a sinner!”

⁸ Zacchaeus stood up and said to the Lord, “Listen, sir! I will give half my belongings to the poor, and if I have cheated anyone, I will pay back four times as much.”

⁹ Jesus said to him, “Salvation has come to this house today, for this man, also, is a descendant of Abraham. ¹⁰ The Son of Man came to seek and to save the lost.”

b) Retell the story

Ask a student to retell the story from memory. Help them out when they get a little stuck or get things in the wrong order – ensure the story is clearly told.

c) Retell the story again

Retell the story again, this time asking different people in the class to share one part of the story using the questions: 'what happened first?...then?'. Give hints when they get stuck.

*At this point, most people should have a good knowledge of the story. The important part now is for the audience to think deeply about the story. Asking appropriate open questions will help them think about the story. **Do not teach your understanding of the story. Trust that the Bible (or story you are reading) will speak for itself. You will be surprised by how successful this is!***

d) Ask questions about the story

Give people time to think about the more challenging questions. Think Pair Square Share⁵ could be used. Some common questions you could ask are:

1) Characters

- a) Who were they?
- b) How did they feel?
- c) What is their spiritual condition? (omit for non-religious stories – you could ask 'what is their situation?' instead)

2) Choices

- a) What choices did each character make?
- b) What was the result of each choice?
- d) What other choices could have been made?

3) God (omit for non-religious stories)

- a) What does the story show us about Jesus/God? (characteristics/attributes)
- b) What was he teaching
- c) What were the people's responses to Jesus/God?
- d) What were Jesus/God's responses to the people?

4) Application

- a) Have I or someone I know been in a similar situation?
- b) Which character am I like?
- c) Which character would I like to be?
- d) What can I learn from each character?
- e) What different choices can I begin making in my words, attitudes, thoughts or actions? (you may omit for non-moralistic stories)
- f) What can I learn from God about his character? (omit for non-religious stories).

Often the students will come up with good ideas that you had not thought of before. Remember, you are helping students to learn and discover for themselves. You are not telling them what they should think.

To recap

- a) Introduce the passage and tell the story.

⁵ MacGregor, Robert. *Modern Teaching Methods*. n.d. < <https://mada-enseignants.org/modern-teaching-methods/> >.

- b) Ask a brave listener to try and retell the story, help them out to get it right.
- c) Retell the story a third time, asking different people in the audience to tell bits of the story.
- d) Ask questions about the story, which help people to understand the story better for themselves.

Further reading

The ideas in this chapter were developed using Simply the Story. Some more training and resources are available by following these web links::

Simply The Story website. <http://simplythestory.org>

Simply the story Guide (French). <http://simplythestory.org/downloads/PDFs/AA-Handbook%20STS%20French%205th%20Edition%20for%20webposting%2012-24-12.pdf>

Simply the story resources.

http://simplythestory.org/oralbiblestories/index.php?option=com_content&view=article&id=52&Itemid=109

Activity

1. Try this activity out with your class.
2. Develop more open questions to use with the stories you use in class.

8. Ideas for Christian schools

I have worked in Christian schools with a variety of denominations. This chapter shares a few ideas from this experience.

I am a Christian

When I say, "I am a Christian"
I'm not shouting, "I've been saved!"
I'm whispering, "I get lost sometimes"
That's why I chose this way"

When I say, "I am a Christian"
I don't speak with human pride
I'm confessing that I stumble –
needing God to be my guide

When I say, "I am a Christian"
I'm not trying to be strong
I'm professing that I'm weak
and pray for strength to carry on

When I say, "I am a Christian"
I'm not bragging of success
I'm admitting that I've failed
and cannot ever pay the debt

When I say, "I am a Christian"
I don't think I know it all
I submit to my confusion
asking humbly to be taught

When I say, "I am a Christian"
I'm not claiming to be perfect
My flaws are far too visible
but God believes I'm worth it

When I say, "I am a Christian"
I still feel the sting of pain
I have my share of heartache
which is why I seek God's name

When I say, "I am a Christian"
I do not wish to judge
I have no authority
I only know I'm loved

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Discuss

1. What do you agree with about the above poem?
2. What do you disagree with?
3. How does this differ from the Christianity we see in Madagascar?
4. What features should a Christian school have that a secular school does not?

Some ideas for Christian schools

I taught in protestant, catholic and independent Christian schools. In these ideas, I've tried to be sensitive to the whole range of schools.

1. Christian schools need high-quality Christian input.
2. The best Christian schools allow children free choice to choose Jesus or not. Children are not pressured. Instead, they are allowed to be attracted to Jesus and choose to follow him.
3. A great Christian school is grace-centred. That means that they know it is human nature to sin and mess up, but also that God's forgiveness covers our sin and messing up – he loves us despite this.
4. Excellent Christian schools will teach strong morals and discipline. Proverbs 22:6 Teach your children right from wrong, and when they are old, they will still do right. (paraphrased, CEV)
5. Jesus ate with tax collectors. He healed the children of a soldier. He forgave a prostitute. He forgave his disciples when they denied knowing him. Based on this model, how can our schools love those who aren't like the 'good Christians'?
6. School should direct children on how to have a living, personal relationship with God. This direction might include:
 - Being thankful for what we have
 - Reading the Bible and asking God to open our eyes to what it says
 - Praying
 - Listening to the Holy Spirit
 - Discussing spiritual things with other Christians
 - Focusing on what is in the heart, not the material things.
 - Choosing God's way, not their way.
7. Christian schools will help children avoid some of the religious traps:
 - Individual churches who say they are the only true church are usually mistaken.
 - Churches that teach the 'prosperity gospel' should be avoided. If it were true, then Madagascar would be the wealthiest francophone nation in the world.
 - Mixing religions doesn't work – ancestor worship and Christianity don't mix.
8. Great Christian schools care about their staff's spiritual well-being and seek to support staff to have a strong faith.
9. Wise Christian schools realise that children are especially special to God. They know that children can have deep spiritual insights and walk with God. Some children will be wise enough to be able to lead devotional sessions at times.
10. Good Christian schools help children understand how Christianity compares with other religions and teaches them to love people with different beliefs.

Discuss

1. Which of the points stood out to you?
2. Are there any points you think are missing? What are they?

9. Reading lessons

I observed many lessons in Madagascar. Often teachers would be teaching primary students to read in lessons called 'lecture'⁶. Usually, they involve a text being written on the blackboard. Then children read the text aloud, one by one, in front of the class. Reading one by one helps students pronounce words, but there many missed opportunities.

In a different country, I observed a Muslim religious education lesson. The students were learning to read the Quran. The students could read it very well. However, when I asked what the text meant, they explained, sadly, they didn't know. The text was in Arabic, and the students could make the Arabic sounds perfectly. However, they didn't know the meaning of the words.

Discuss

1. What are the problems with these types of reading lesson?
2. How could these types of reading lesson be improved?

I saw two main problems with these types of lesson:

- a) The children read one by one, which means most students were only active for a small part of the lesson.
- b) Both lessons taught students to decode the language. Decoding is when students see the words written on paper and make the correct sounds for those words. But they didn't teach comprehension – an understanding of what the words mean.

A better reading lesson

The text we are will use as an example was chosen carefully. It starts very simply. Then the language becomes harder. The text is differentiated.

It is essential to choose a text that is at the correct level for students. It should not be too easy, nor should it be too hard. I have observed teachers using texts they don't understand themselves. Teachers must do their homework and understand the texts they use entirely. There is no shame in consulting a dictionary, even in front of students, modelling what the best students should do.

As usual, a teacher could write the text on the board:

My name is Ben.

My name is Ben. I come from Australia. I am 24 years old. I live in a small town called Branton.

My job is cleaning shop windows. I am not married, but I live with my very beautiful girlfriend, Maria. We don't have any children...maybe next year.

I normally get up at eight o'clock, but on Thursday I get up at six o'clock because that is the day I go running in the park.

Once the text has been written up or given to students, a teacher could:

⁶ French for 'reading'.

1. Before reading the text, introduce any unfamiliar words. Explain their meaning as well as helping the class to pronounce the words correctly. You could get the entire class to 'shout out' the words because it is easier to learn the meaning of words that students can pronounce. This activity will increase the confidence of students reading the text.
2. If appropriate, remind students of the context (what happened before) the text.
3. Ask the students to read the text quietly. Quiet reading time gives students time to process the words and think about how to pronounce them.
4. Read the text aloud to the class. This helps the students to hear how the words should be pronounced. You may need to do some homework to learn how to pronounce some words.
5. Ask students to read it in groups and discuss what it means. I suggest mixed-ability groups so that students can learn from each other. Alternatively, group students by ability. Sit with the weakest groups and help them.
6. Ask questions about the text. The questions should highlight the meaning of the text so at the end of the activity students know what the text means. Examples for the above text, with difficulty noted:
 - a) Easy: What is the name of the man in the text?
 - b) Easy: What is the name of the woman in the text?
 - c) Easy: What does 'I am 24 years old' mean?
 - d) Medium: Where do they live?
 - e) Medium: What job does Ben have?
 - f) Medium: What does 'We don't have any children...maybe next year' mean?
 - g) Difficult: What is different about Ben's routine on Thursday?
 - h) Difficult: What does it mean 'that is the day I go running in the park'? – point out the word 'that' refers back to 'on Thursday'.
7. Read the passage aloud together as a whole class, with everyone speaking at once. By now, students should have a good understanding of what the text means and read it reasonably well. Listen carefully for words that some students mispronounce.
8. Help the class with the words that some students find hard to pronounce.

Discuss

1. How was this lesson differentiated?
2. What makes this lesson better than a traditional reading lesson?
3. Work out how to apply these ideas to a reading lesson that you teach.
4. Can you think of any other improvements to your reading lessons?

10. Scaffolding lessons

“I can’t believe what the students managed to do in that lesson” Observer commenting on a scaffolded lesson

Scaffolding in a lesson helps students to do things they wouldn’t otherwise be able to do. Some straightforward examples of scaffolding from everyday life follow:

1. Putting scaffolding on a building allows people to climb and work in places they wouldn’t otherwise be able to.
2. A restaurant menu with pictures helps people choose dishes that they haven’t tried or don’t know the name of.
3. A map helps people to find their way in an unfamiliar place.
4. Examples of completed forms can help people fill out a form correctly.

In lessons, scaffolding helps students go further than without the assistance. Some examples:

- In a lesson reading a text containing unfamiliar words, the teacher discusses those words’ meaning *before* reading the text.
- In a primary writing lesson, focus on a grammar feature. For example, every sentence starts with a capital letter and ends with a full stop.
- You could help Early primary spell words without spelling in full. E.g. “the last letter in the word is a ‘y’.”
- When writing an essay, help students with the structure. For example, the essay should contain:
 - An introduction – enough information to excite the reader about the essay.
 - A main section – where you discuss the ideas
 - A conclusion – where you write a summary of the essay
- Advise students to write the main section before the introduction and conclusion.
- When students complete a large piece of work, such as an essay, give examples of similar good quality work. Examples will help the students know what to do.
- In a Physics or Mathematics lesson, when introducing a new mathematical technique or equation, give examples of how to carry out calculations. Then ask the students to work through a set of questions.
- Give students ideas of how to revise for a test, for example:
 - Read through your notes on the *Forces* topic.
 - Work through the checklist of everything you need to know for the topic.
 - Do the practice questions I gave you, and check your answers against the answer sheet.
 - Discuss anything you are unsure of with a friend and ask me if you are still puzzled.
- Reactivate prior knowledge. Students often need a reminder of things they learned in the past before using that knowledge again. When planning your lessons think about what prior knowledge students need. Then at the start of the lesson, include an activity to remind them of that knowledge.
- Visual aids can make a big difference. Showing a picture of the thing that you are talking about connects your words with the real thing.

- A man pushes a cart along a hilly road. Occasionally he will get stuck on a steep hill and need an extra push. When students complete a task, they often get 'stuck' and cannot do any more. A few words of advice from their teacher can help them get over the 'steep hill' and solve the problem. Suppose a student is struggling with a Physics problem. You could show the student how to solve the problem. But it is much better to help the student think through the problem with you. For example:

Teacher: What does the question tell us?

Student: The force...er...that's 5 Newtons. The weight, no the mass, that's 10kg.

Teacher: What does the question want us to work out?

Student: The acceleration.

Teacher: What is the equation that links force mass and acceleration?

Student: $F=ma$. OK I can do it now!

Give the student just enough help to get over the obstacle that is before them.

- If you give students an assignment, make sure they know what they need to do to succeed. A checklist helps students ensure they have included everything necessary.
- For weaker students, you might ask them to fill in the blanks. E.g:

_____ is a great way to help children to complete _____ which are harder than they could do _____. Doing this allows their subject _____ to increase very quickly.

Word bank: tasks themselves skills scaffolding

Fading

Good scaffolding boosts the self-confidence of students. Students find themselves completing complex tasks they thought impossible.

As the students grow in their ability to do the tasks, they will need less scaffolding – the teacher can take away the student's supports. Reducing support is called fading – the assistance fades out.

11. Animating lessons

'I can think of nothing an audience won't understand. The only problem is to interest them; once they are interested they understand anything in the world.' Orson Welles

Discuss

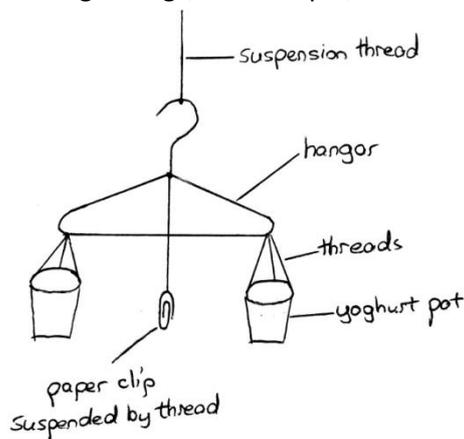
1. Think about the classes you have attended. Which lessons do you remember most clearly?
2. Why do you think these lessons were memorable?
3. How could these lessons inform your teaching?

Students who enjoy class tend to learn well. The brain is good at remembering things that it finds interesting. As a result, if students enjoy lessons, they will learn well.

One way of improving your lessons is 'animating' them. Animating often uses didactic teaching materials⁷.

There are 9 questions you can ask to animate lessons:

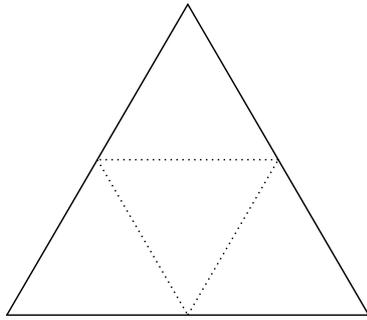
1. Can you show a picture (or video) of it?
 - Draw a picture or diagram on the board.
 - Print an image at the local cyber and pass it around the class.
 - Show a picture in a book.
2. Can you make it? Often this involves making a model of the real thing. Best if students can make it. Examples are:
 - Make a simple balance to weigh things, for example, one I made to teach science⁸:



- Make Egyptian masks out of papier-mache.
- Make a model of tectonic plates with paper
- Make 3D shapes from the shape nets e.g.:

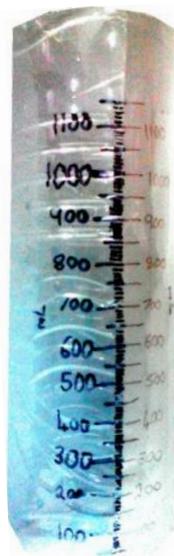
⁷ This is a French term for objects or materials we bring into our lesson. It covers most teaching materials including experiments, worksheets, textbooks, pictures, costumes etc...

⁸ MacGregor, Robert. *Practical Physics and Chemistry for 6e*. < <https://mada-enseignants.org/practical-science-book/> >.



(source: https://commons.wikimedia.org/wiki/File:Geometric_Net_of_a_regular_tetrahedron.svg)

- Young students could take a selection of letters on pieces of paper and reorganise them into words.
 - Young students could take a selection of words on pieces of paper and reorganise them into sentences.
 - Make a model explaining day and night using a torch and a ball in a dark room. The ball is the earth; the torch is the sun. Point the torch at the ball and observe one side is light and the other side is dark.
3. Can you demonstrate it?
- Demonstrate the use of a balance.
 - When teaching grammar, give lots of examples of a grammar feature before teaching the grammar rule.
 - Discuss the content from local newspapers.
 - The teacher or student demonstrates angles with their arms. E.g. show me an obtuse angle. Show me a plane angle.
 - The electron circuit model from my first book is another example of a demonstration
 - The teacher works through some questions on the board, demonstrating how to work things out.
4. Can students do it?
- Students use a measuring cylinder made from a bottle (or a real measuring cylinder) to measure the volume of something:



- Students talk in groups to practise the words they used in the lesson.
 - Students go to a cyber and try out what they are learning about computers.
 - Any active learning activity.
 - Cut up a heart or lungs from a cow or pig to explore how they work.
 - Learn basic mathematics using beans to help with counting.
 - Work in the community to improve the environment: planting flowers or cleaning up rubbish.
 - Students answer a selection of questions.
 - Students build some simple electrical circuits using motorcycle components.
5. Can you take students to see it? This works best when taking students to see something outside their daily experience. Examples in your communities could be:
- Take students to see a farm. Small children will love to see the animals and baby animals.
 - Take students to see medical facilities. Perhaps children could x-ray their toys.
 - When learning about geography, take students to see geographical features that are nearby.
 - When learning about rivers in geography, visit a river and point out the geographical features.
 - Visiting the fokotany, church, police, fire brigade, or mosque is much better than learning about them in the classroom.
 - If you are lucky enough to have parents who have various professions, ask them to visit and share with the class about what their jobs involve.
6. Can you act it out?
- Students act out a historical story.
 - Students act like hot and cold molecules/atoms. A cold molecule in a solid vibrates a little without changing its location. A hot molecule in a solid vibrates much more without changing its location.
 - Hot seating – one student pretends to be the character from a book, and other students ask them questions about the character.
7. Can you use a computer simulation of it?
- If you are lucky enough to have access to technology, there are great simulations of many things available online. Many are available on smartphones as well. One of my favourite science simulation sites is PhET (<https://phet.colorado.edu/fr/>)
8. Can you make a model of it?
- Hold a model election in your school to teach children about democracy.
 - Make a model of lungs with a diaphragm. A simpler version would have only one balloon inside)



From <https://www.wikihow.com/Build-a-Model-Lung>

- Make an electric circuit model⁹
9. Can students find out about it themselves?
- Students carry out an experiment to find out something, for example, what conducts electricity?
 - Students read a book to find out about something.
 - Students use the internet to research something.
 - Students research something and make a poster/presentation.

I encourage you to be creative and think of ideas that fit your classroom and subject.

Activity

Try including the ideas from this chapter in your teaching. What worked? What didn't work?

⁹ See the active learning chapter in: MacGregor, Robert. *Modern Teaching Methods*. <<https://mada-enseignant.org/modern-teaching-methods/>>.

12. Lesson planning issues

This chapter addresses three issues with lesson planning.

1. I don't have enough time to teach the course

The Malagasy curriculum contains less content than the French curriculum. Teachers in France complete their curriculum, so it must be possible. A few ideas for how to 'make' time:

- I observed a lot of time gets wasted in lessons. E.g. when one student is writing on the board or speaking to the class, all the other students have nothing to do. Or when most of the class are idle while waiting for a few students to finish some work.
Instead, plan activities where all the students are engaged. For example, ask students in groups to write sentences about a topic. Then ask each group to write their sentences on the board *at the same time*. Finally, discuss each sentence with the class.
- Differentiate lessons. Some teachers wait until the slowest student has understood everything before moving on. Instead, have different expectations for students of different abilities. Not all students will learn the most complex ideas; hopefully, all students learn the basics. The slowest students may complete a few questions while the quicker students complete more, including challenging questions.
- Some students waste a lot of time getting started on class tasks. Encourage students to start work quickly, reminding individual students who are slow to start what they should do.

2. I have too much time for the course

Occasionally you will have too much time - an excellent opportunity to do extra-curricular activities. Play learning games, teach challenging ideas in your subject that students will struggle with next year. You can teach *more* than the curriculum.

3. I don't have any good resources.

The internet contains lots of great free resources if you know where to look. Some of my favourite websites are available here: <https://mada-enseignants.org/websites/> There are many more – let me know if you have any favourites to add.

French textbooks are available on secondhand bookstalls to use as resources. It is worth spending some money on good resources. Remember that French textbooks are written for a more challenging curriculum.

Connect with a group of teachers who teach your subject and share resources. Many of the best resources that I have come from other teachers.

13. Teaching resources and ideas

Many topics are not covered in detail in my books. Great teachers are always working to improve the knowledge and understanding of their subject. This chapter gives a few ideas of where you can find out more.

Links to resources on the internet

I have a website and a Facebook page with lots of great resources that will help your teaching:

- Website: <http://www.mada-enseignants.org>
- Facebook page: 'Centre de formation d'enseignants Robert MacGregor' (<https://www.facebook.com/madaenseignants>)

The online resources include:

- All the books we have written for Madagascar for free download
 - Modern Teaching Methods
 - This book
 - Modern primary and preschool teaching methods.
 - Practical Physics and Chemistry for 6e
- Links to resources for your phone or computer.

If you are unfamiliar with the internet, go to any cyber and ask the staff to help you.

Books

Keep an eye out in secondhand markets for books that may help you or your students.

Societies

Consider forming a local group of teachers who work to develop teaching materials for your subject.

Training courses

We offer a variety of training courses. Sponsorship is available for needy schools who unable to pay the course fees.

Modern teaching Methods one

A 10 session, 15-hour course studying the fundamental skills of teaching. It is based on the content in the 'Modern Teaching Methods' book.

The course is designed for all teachers at all stages of education.

A course textbook and a completion certificate is included in the price.

Modern teaching Methods two

A 10 session, 15-hour course that helps teachers to apply ideas from the first course. It also contains modules that are based on the 'Modern Teaching Methods 2 book.

A course textbook and a completion certificate is included in the price.

Modern teaching in the primary school

A five session, 7.5-hour course which covers the content of the 'Modern preschool and primary teaching' book.

A course textbook and a completion certificate is included in the price.

Trainers course

This course trains teachers to deliver the Modern Teaching Methods 1 course. The course is 21 hours long (14 sessions) and is free of charge. It includes a trainer's guide. Trainers must have completed Modern Teaching Methods 1 and 2 before enrolling in this course.

Practical Physics and Chemistry for College

We have developed very affordable practical work for science teachers. For example, we have developed a course where a 6e teacher can spend 15,000Ar on experimental resources for their class for an entire year. We run a one day (6 hour) course introducing some of the experimental work.

A course textbook and a completion certificate is included in the price.

Course bookings

For bookings and information, please contact:

Antananarivo (outside teaching hours please): Tahina – 034 887 5540 or Josianne - 034 961 5036

Tamatave (outside working hours please): Lili: 032 580 3630 or 034 13 762 04

Or you can contact us online:

Use the form on the website: <https://mada-enseignants.org>

Use the Facebook page: 'Centre de formation d'enseignants Robert MacGregor'
<https://www.facebook.com/madaenseignants>

Appendix 1: Blank lesson observation checklist

Name of teacher:

School:

Class:

Date:

Time:

Number of students:

1. Organisation

<u>Area</u>	<u>Score (0-5, 5 is good!)</u>
Pre-planned	
Lesson plan present	
Clear aims and objectives	
Resources pre-prepared	
Lesson starts/finishes on time	

2. Student outcomes

<u>Area</u>	<u>Score (0-5, 5 is good!)</u>
Are all students being challenged?	
Are all students making progress?	
Are all students engaged, and at best inspired?	

3. Lesson content

<u>Area</u>	<u>Score (0-5, 5 is good!)</u>
Clear board work	
Clear presentation and explanations	
Students are active in their learning	
Learning difficulties are catered for	
Teacher knows students	
Teacher language skills	
Students understood the lesson?	
Differentiation	
Level is appropriate for the students	
Good classroom management	
Teacher subject knowledge	
Teacher has high expectations of students	

3. Assessment

<u>Area</u>	<u>Score (0-5, 5 is good!)</u>
Teacher assesses what students have learnt.	
Does the teacher use what they know of the students to help them progress?	
Student work is marked with feedback	
Students know how to improve	

4. Other

<u>Area</u>	<u>Score (0-5, 5 is good!)</u>
Great relationship between teacher and students	
Teacher encourages students	
Mutual support - students help each other	
Teacher is enthusiastic	

Comments/notes:

Signed:

Date: