

Innovation and OBE at Acclaim Primary School

Reconciling a tried and tested science curriculum with the practices of an OBE science curriculum

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with

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For reasons of confidentiality and research practice, the names of the principal, teachers and learners have been changed. The principal and teachers have a version of this report in which their real names are used throughout. It is their right to distribute copies of that version.

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1 The purpose of the story

Acclaim Primary School is one of three participating schools that took up invitations to try out **some** aspects of Curriculum 2005 and its OBE policy¹ before its introduction to all learning areas (or subjects). The purpose of this story is to describe the way that the science teacher in particular is adapting his lessons to the demands of the new style of assessment, and how the principal is adapting the manner of reporting to parents.

The purpose goes further, of course: the aim of the project is to understand what is involved for other schools which change from content-based education (CBE) to outcomes-based education (OBE), and to get ideas for training teachers in OBE assessment methods. And then the aim is to enable Acclaim Primary to prepare for the introduction of Curriculum 2005.

The story is unfinished. It is the school's story, and the school's teachers and principal are the main actors. They will decide what will happen in the further chapters of the story. More about this in Section 12.1, on page 14.

Can outsiders write about insiders? This story has been written in consultation with the science teacher and principal. This means that they have pointed out errors, omissions and other perspectives to the writers and researchers.

The story is not the same as if the teachers and principal had written it themselves. Their story would be different, because they are *insiders* in the school. The project staff are *outsiders* in the school, and they bring perspectives which are different to those of *insiders*.

It is the role of the outsiders to try to understand *the insiders' perspective* and then understand the reasons why the school does things in particular ways. But the *outsiders* have another role: they must interpret the way things are done in Acclaim School in terms of a theory of OBE teaching and assessment. So the outsiders must both identify with the teacher in order to see things from his perspective, and must relate his perspective to ideas about OBE assessment.

2 The Science for All Assessment project and the school

Peter Moodie had been involved in some curriculum work with Patrick and Mr Mphahlele previously, so there was an existing relationship before the school decided to come onto the project. Dimakatso Mabitsele came from a college and NGO background in teacher training in mathematics and assessment.

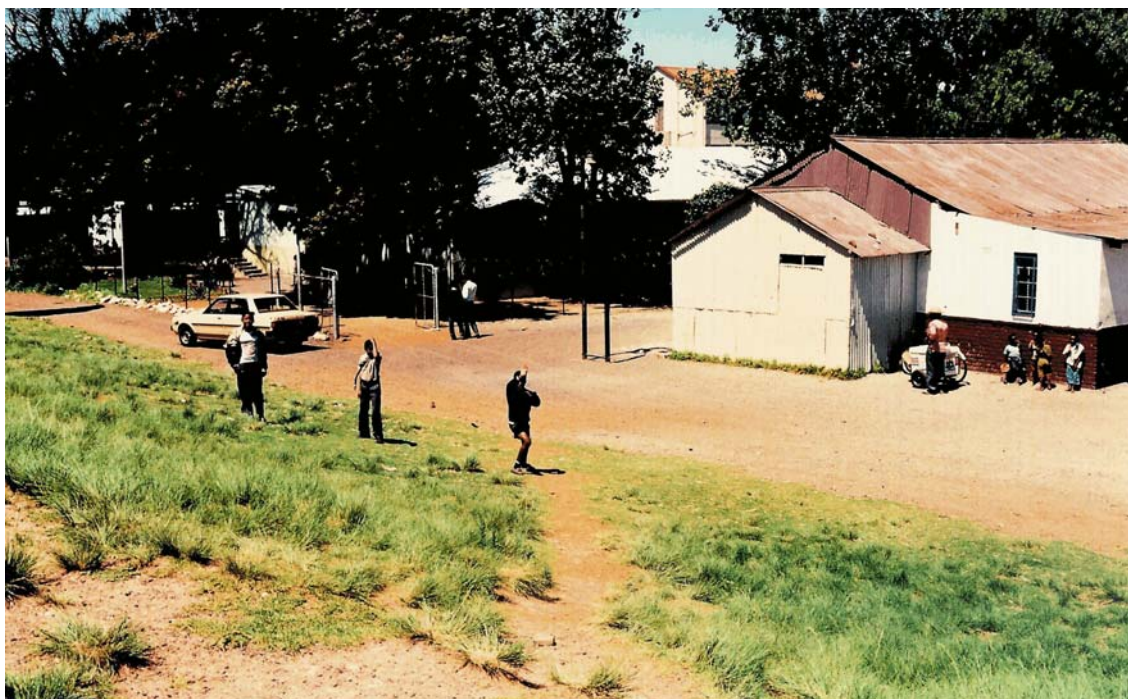
¹ The words "Curriculum 2005" are not equal in meaning to "OBE" - OBE is an education movement or philosophy based on certain principles. Curriculum 2005 is a particular interpretation of those principles. There is still debate over how those principles will be applied in practice, so, for the purposes of the project, SfAA staff have selected certain basic features of an OBE curriculum to stand for Curriculum 2005.

There is a mini-story about the roles which Dimakatso and Peter and Patrick had in the work, and in the different expectations the three of us held about the project. For example, Peter and Dimakatso wanted to be with Patrick as he tried out new methods, in order to learn how they work. However, Patrick expected more direct support from Peter and Dimakatso, because "... *it is a new thing we are trying ... I was trying to get the new information [because] it is a new thing that has come.*" Peter and Dimakatso gave ideas but did not want to urge Patrick to do things in a particular way, because "*the new thing*" is new in so many ways that they did not have the confidence to say "*This is the best way to do it.*" This is still a simplification of what really happened, and so there is more detail about this on page 24.

3 An introduction to the school

Acclaim Primary School is an old school which was once on the outskirts of Johannesburg. In more recent times it has been surrounded by new developments like office parks and construction companies, but a visitor may still notice remains of massive ironwork and the corrugated iron church nearby, and recognise the signs of old Johannesburg

Figure 1 *Acclaim Primary School.*



On the fence near the entrance, the children have formed the words OBE and OUTCOMES in soft-drink cans; the cans have been pushed into the diamond-mesh fence, and painted red and white.

The principal, Mr. Mphahlele, has been at the school since 1956, and has been its principal for 27 years. He is a career educator with definite views on his profession. He has a real affection for the

young children in his school, and often reflects with some regret on his own schooling, which was systematic but formal and with little connection to reality. For example, he has several times told Dimakatso and Peter this story:

My teacher would go on and on talking about this strange thing called a perimeter. We were never sure what it was but we studied hard and we knew that you must multiply a length by two and a breadth by two and then you add those two numbers together. If you were careful you got the answer right. If you were not diligent, then you got the answer wrong, and then it was the stick for you.

I was in Standard Eight before I realised what this strange thing of a perimeter was. If only that teacher had said, "Look, children, there is a fence outside, around the yard, that is the perimeter, go and find out how long it is". Now it is up to us to improve the education of these children. I want to see that before I retire.

Figure 3 *Children have used drinks cans to make the words OBE and OUTCOMES in the fence.*

PHOTO

Discipline at the school is consistent for both children and teachers, and absenteeism is low. If teachers are away from school, it is generally for INSET workshops, illness or maternity leave. *"I have always told my teachers that if they wish to protest [.....], they must arrange to do it in the holidays, not in the time when they are supposed to be caring for these children; my teachers know where I stand."*

So the culture of learning and teaching is alive and well at Acclaim Primary School. Lessons take place as timetabled, children arrive on time, the walls of classrooms have on them interesting posters and children's work. Teachers and children may be found repairing desks or laying second-hand carpet tiles in the classrooms. A library has been growing steadily over a period of 3 years. The school has a working photocopier as well as a VCR and colour monitor for showing videotapes, donated by Rand Mines Properties. The science room has a selection of science apparatus

provided by a non-governmental INSET programme, with cupboard or box storage for it.

The children are all African and do not come from well-to-do families: they come from townships and rural areas as well as from the inner city and suburbs of Johannesburg.

Parent days take place several times a year and prize-giving ceremonies happen with parents and children seated under the large pepper-trees between the classrooms.

The school's language policy is to begin instruction in English as early as possible. As a visitor one notices the wide disparity between the children's abilities to express themselves in English. Some children speak it as though it is a first language, while others speak hardly any English at all. The principal explains this disparity: children who began at Acclaim Primary in Grade 1 speak good English, but many children come from other schools in Grades 4, 5, 6 or 7.

Some of the children who speak minimal English are in Grades 4 to 7, and they must cope with a great deal of content knowledge in English. Our impression is that some do not cope well, though they have plenty of ideas and become animated in discussion when they can use their most fluent languages.

However, there is an atmosphere of care for children which one feels in the pleasant interactions between teachers and pupils in and out of classrooms, in the confident way that children greet visitors and teachers, in the apparent absence of harsh disciplinary methods, in the positive attitudes of the teachers towards the children and in the kindly philosophy of childhood which the principal often expresses.

4 The practice of assessment in the school and the principal's views on assessment

The school collects **internal marks** through tests, and **external marks** through twice-yearly examinations. In some subjects, these exams are set externally, marked with assistance from the teachers, and moderated by the GDE. The principal values these external exams, which are written in common with other schools, because they help him maintain a standard. He asks his teachers to set internal papers too, and their internal results are used to check parity with the external standard.

Internal and examination marks are not combined when assessing pupil performance: promotion depends almost entirely on the marks gained at mid-year and year-end examinations. Internal marks from snap tests are used for checking on how much of a lesson children have grasped, and more formal written tests produce marks which go toward a term mark in the first and third terms. These term marks serve as a check on pupils' progress

toward the second- and fourth-term marks which will determine promotion.

However, the principal's approach to assessment is by no means limited to mark-based decisions. He believes that teachers should get to know the personal and home circumstances of each child, and teachers should take this knowledge of the child into account when allocating a mark.

He also believes that there are many important qualities which pupils should develop and which ought to be assessed in some way: the mark-based system in which the school finds itself makes it hard to see how to reflect a child's sense of responsibility, honesty, perseverance or initiative, and yet he feels that if marks must be given, then something like 25% of the total mark should be set aside for evaluating such qualities. He speaks of "evaluating the child *in toto*."

5 The project teachers

Patrick, the science teacher, teaches a number of other subjects besides science. His colleague, Mbokodo, teaches mathematics, and was involved in Phase 1 of the Science for All Assessment project. His quick insights were valuable in developing the assessment tasks in Phase 1. However, the project has not yet involved him in Phase 2.

There are over 70 children in Grade 5, with about 45 each in Grades 6 and 7. The school has lost one teaching post so the two Grade 5 classes are taught science together in a room more suitable for a class of 30. In this class Patrick uses pieces of masonite to bridge gaps between the tables; this increases the amount of writing area the children have.

6 Patrick's patterns of teaching and assessment in science

Patrick's teaching follows a scheme of work which sets out what should be covered week by week through the year. This ensures that all his Grades 4-7 pupils complete the syllabus. A further incentive to regular teaching is that they write common exams, in which over 100 schools participate twice a year. Tests for Grade 7 happen weekly or every 2 weeks.

Like all teachers, Patrick has developed a teaching style and pattern of lessons. The three phases below are only a generalisation; Patrick in fact has variations on this general pattern, and the phases are not always separate but instead they often overlap with each other.

*** The information phase**

In this phase Patrick provides information and explanations of the lesson topic. The information comes from different sources: from

him, from books which he asks the children to read, from printed material he supplies them, and from children talking about their own experiences. Patrick may demonstrate a part of the lesson, for example, by boiling a kettle of water and holding a plate above the steam to show how water drops collect on the plate.

While Patrick determines course of the lesson, the children often provide plenty of related information and stories. The classes show enthusiasm about telling their stories, because they know from past experience that the teacher will give them the opportunity to contribute to the lesson. Sometimes the children's contributions make demands on Patrick to keep the lesson focused. For example, in a Grade 6 lesson on static electricity, Patrick had to respond to children's stories and questions about sparks from a car exhaust-pipe dragging on a tar road, witch-doctors who send lightning to people and volcanoes which send fire into the air. However, he manages to bring the lesson back to its planned course without making the children feel that their ideas are not welcome.

Another example, in a Grade 5 lesson on reproduction in mammals:

Boy: *"Is it true that cats have seven lives?"*

Teacher: *"What do other students here think?"*

Now another boy tells a frightful story of how he and a friend threw a cat into a fire, but the cat ran away and was alright. Patrick does not react with condemnation but quietly says *"We must remember that all animals are important and it very cruel to kill an animal. Animals are important, as people are important. Now who can tell us how cats are important?"*

Boy: *"Cats kill rats and ..."*

Teacher: *"Yes, cats kill rats and rats are harmful animals which carry diseases."*

Instantly a boy's hand goes up: *"Teacher, how does a cat hunt with its whiskers?"*

- a call for quick thinking by his teacher!

During this phase Patrick writes, on the board, short reminders or headings for sections of the lesson. For example, the board may look as in the box at right:

The children usually sit at desks, arranged to fit the available space in the over-crowded room. The teacher moves between the front and the back of the room.

The children do write the chalkboard summary into their books but we have not observed classes copying extensive notes from the board; most of the lesson time is spent in talk, either by children or teacher. We have no analysis of the percentage of time the teacher or the class spends talking, but we have observed few times when children silently copy notes.

Reproduction of cat (mammal)

- 1 Importance
 - 2 Need
 - 3 Steps: courtship - mating
 - 4 Seasons
- etc.

In preparation for the next phase, Patrick may ask the class to discuss the summary points from the lesson which are on the board. We were interested to observe that the children really do discuss these points with seat-mates or groups.

*** A summarising and informal assessment phase**

Patrick calls some children, perhaps three, sometimes more, to the front of the room and asks them summarise the lesson orally, repeating the main points to the class. This stage in the lesson is assessment (as well as providing an opportunity for some children to consolidate the information by speaking or hearing it again). The teacher can assess their recall as well as their speaking skills, while the children get an opportunity to check how much of the lesson they remember. Because this phase is a well-known pattern, the children know during the lesson that they could be called upon to summarise and this motivates them to pay attention.

*** A consolidating phase**

All children usually do written tasks in the form of a series of questions based on the lesson notes. The teacher sometimes takes in this written work and reads it as informal assessment, but usually he does not give or record marks. In this action and the pupils re-telling aspects of the lesson, we see two examples of the quick informal checks which the principal referred to in Section 4, on page 7 above.

These checks are feedback to the teacher to indicate whether or not he can move on to the next lesson-topic. However, in large classes of about 45, the feedback is more useful to the teacher than to the learners, because he cannot discover or respond to the deferring needs of individuals or small groups.

7 The logic of the type of exam set at Acclaim Primary

While Patrick has been trying out alternative kinds of assessment in Science for All Assessment, the normal science exams in the school are based firmly on factual knowledge of the syllabus topics. There are good reasons for this.

It is important to the pupils that Patrick does a good job in covering the syllabus and preparing them for these exams, because success may open doors to future opportunities. Grade 6 pupils at Acclaim Primary are able to win up to 5 Grade 7 scholarships to a selective primary school in Johannesburg, which offers enriched and accelerated course into secondary education. Though these selectors do not disclose details of their selection criteria to Acclaim Primary, the Acclaim teachers might well believe that systematic syllabus coverage is important in giving Grade 6 children a good chance of selection.

Mr Mphahlele explains why the school is always visited by the selectors: *"This school does well because we always cover the syllabus. The children know that from Grade 1 to Grade 6 they will be taught and tested. When we*

tell the children they are going to be tested, the children know we will follow up on all our promises."

Patrick takes a slightly different angle, as he points out that the school is not simply preparing children to pass exams in the school: *"We are preparing them for life. They must go on from us prepared to cope with high school."*

As SfAA is brought into this situation, one can see that Patrick has a difficult balancing act. He wants both to teach the normal curriculum and syllabus well **and** teach lessons which use OBE methods. Patrick's ability to manage these two intentions is a major theme of the story.

8 Some necessary background about the project

Science for All Assessment is designed to run in three phases:

Phase 1 began in September 1997 with a workshop for teachers and principals from all 3 schools, where the ideals of OBE and Curriculum 2005 were presented and discussed. The natural sciences outcomes were discussed and the group did activities which illustrated the use of process skills in science. For the purposes of SfAA, we chose to focus on Specific Outcomes 1 to 3. These are:

1: Learners use process skills to investigate phenomena related to the Natural Sciences

2: Learners demonstrate an understanding of concepts and principles and acquired knowledge in the Natural Sciences

3: Learners apply scientific knowledge and skills to problems which are unfamiliar to the learners.

A central question for the project is: **Will teachers be able to help their pupils to attain these three outcomes in Curriculum 2005, and will they be able to assess the attainment?** We will attempt to answer this question for Acclaim Primary in Section 12.

During the rest of Phase 1 teachers were given the opportunity to become familiar with skills-based assessment tasks, working with "focus groups" of six children. These children were selected by their teachers from the middle of the ability range. During September and October staff and teachers met and gave the skills-based tasks to the focus-group children. As far as possible, staff did the same work as the teachers. Patrick, Mbokodo, Dimakatso and Peter would meet after such sessions and discuss how things had gone in each of their groups. These meetings often led to changes in the task and to us revising our approach with the children.

Phase 1 ended in late November 1997 with a workshop in which we reported on the focus group children's performance in 8 skills-based tasks. It was clear from the children's written work that most of them could do the tasks reasonably successfully. The question now was whether these and similar tasks could be used in teaching and assessing a whole class.

In Phase 2, the project asked teachers to use these tasks and similar assessment tasks to assess children under more realistic conditions i.e. about 45 children per class. Phase 2 began with a two-day workshop in which staff and teachers together planned a pilot unit of work. This unit was based on plant life processes, and was based on the core syllabus. In this Phase, each of the schools conducted its project work according to circumstances.

At Acclaim Primary, Patrick's project lessons were taught to Grade 5 and 6 classes. What follows is a sample of his lessons during the period January to March:

- The children germinated a variety of seeds as part of the Downward roots activity (developed during the Phase 2 workshop), which involves testing ideas about how roots "know" that they should grow downwards, and a number of lessons were based on these growing seeds
- they did a task from a worksheet on plant life cycles, and
- they did several practical and group-discussion activities based on the Phase One task, *How much water does the tree give out?*, which involves measuring transpiration water from some leaves and extrapolating the amount to the whole of a small tree.

Based on discussions at the workshop, SfAA staff drew up a record-sheet to capture notes of children's performance in 12 process skills. This is discussed further on page 21.

During Phase 2 there was a special meeting with principals and teachers from all three schools in which we discussed the production of a new kind of outcomes-based report-card to parents. The follow-on from this will be described on page 15.

Phase 3, which we have not yet reached, will aim at institutionalising some OBE practices, and at enabling teachers to adapt or create materials for use as OBE assessment tasks. We hope that the project teachers will feel equipped to take a leading role in workshops organised for other schools.

9 The relationship of the project staff to the teachers

Science for All Assessment is not designed as a training programme in assessment; instead, it seeks to understand what is likely to happen when Curriculum 2001 is introduced to schools. If we can gain this understanding then we will be able to plan assessment training in a way that matches the concerns of the schools. So the regular staff of SfAA (Dimakatso, Peter, Sekhoho, Ray) did not offer specific training to project teachers. Rather,

teachers and staff looked at the issues involved in OBE and together we tried out some ideas to see how they would work in the classroom. SfAA staff realise that the issues are complicated. The staff do not yet want to train teachers and rather want teachers to say, "Well, this is what I think about the activity ... about this kind of assessment ..."

However, teachers did see staff as trainers and experts, so there was some misunderstanding that resulted from different ways of seeing each other. We discuss this further on page 24.

In the following section, we try to give the reader a look into the science classroom as Patrick incorporates project ideas into his lessons. It is not meant to be a balanced evaluation (remember, we did not observe in order to evaluate but in order to understand), rather it is a picture which we chose to illustrate some of the interaction between teacher, children and project staff.

10 Some scenes from science lessons at Acclaim Primary

A Grade 6 lesson on plant life processes We visit the Grade 6 class for a lesson after the lunch break. On the windowsills and other places there are containers with seeds germinating in them. The learners are arranged in pairs, each pair to share a table throughout the lesson.

The teacher hands out textbooks, two books to a pair. He asks them to read information about three plant life processes: photosynthesis, transpiration and the transportation of food and water in plants. They must read the relevant text and then discuss the text with their partner. He tells them that they will do classwork later, based on what they have read.

They begin; each learner reads either silently or aloud but mostly they do not discuss anything with their partners. Then the teacher gives them classwork. Here are a few of the questions:

1. *What do you think makes the green colour of the plant?*
3. *What do you think the plant needs to grow? (Give four reasons)*
5. *How do plants get their food?*
6. *Which gases are exchanged in the plant?*

The learners may be able to find the answers in the books, but these questions deal with difficult concepts. The learners write answers, and the teacher then asks the class what their answers are. They direct their answers straight to the teacher, and mark their classwork without sharing information with each other.

A second look at Grade 6, two weeks later.

We visit the Grade 6 class again, about two weeks later. Dimakatso and Patrick have not met since the last lesson. Today, the learners are seated in groups of four to five. Patrick explains that in this lesson the children will be marking other children's work, because he wants them to think for themselves.

The class has previously done a written activity on transpiration from a tree, called *How much water does the tree give out?* They wrote on the worksheets for this activity. Today, the teacher hands out copies of three completed worksheets to the learners. The worksheets were completed by pupils in this class.

The teacher sets the task. He says, *Read the given worksheets and find out what is good, fair and bad about their responses. Check on the spelling, it is very, very important. Try to make comments about how the bad things could be improved. If something is good, write about it.*

Classify the worksheets into one of the following three categories of learning: Good, Fair and Weak.

The teacher is asking them to decide on **their criteria** for judging a response as good, fair or weak. The learners evaluate their peers' work and they tell the class why they place each worksheet within a particular category of performance. The teacher rotates from one table to the next finding out if learners are experiencing difficulty with choosing their criteria. Learners within a group discuss the peers' responses, and the teacher comments on their ideas. However, he does not interfere with their decisions.

Next, the group summarises their ideas and the scribe member writes them down. The other learners then copy the scribe's report and they all submit their reports to the teacher. The lesson ends at this point.

For a sample of how the groups assessed a classmate's work, see Appendix 1.

A comparison of the two lessons.

In the first lesson, when the teacher asked the learners to discuss what they had read about plants, very little discussion happened. It seems that the learners knew that discussion in pairs was not really needed, because the content would be dealt with from the front of the room. Also, the content was not something they could really discuss, because the textbook had spoken the final word. The actual task was to spot the information they needed to answer the classwork questions. Dimakatso had the feeling that the learners were not co-operating in answering the questions but in fact they were competing against each other in giving the teacher the answer he was hoping for.

Now look at his second lesson. Here, there was real discussion. This was not the textbook speaking from the page, it was the ideas of classmates on the page. The task which Patrick had set them

was interesting because each learner could compare his or her own worksheet answers (of the previous week) against the answers which the group was now assessing. Dimakatso's impression was that the learners were really co-operating in drawing up criteria for assessing the sample worksheets.

The teacher's intention in the lesson.

In discussion afterwards, Patrick explained that he wanted the learners to **learn to think for themselves**. He felt that this was often lacking in the way they did their usual work in class.

This is a fairly common statement by teachers, that they want their learners to “think for themselves”. However, this statement often means that the learners should be able to **recall** what the teacher told them, without being reminded by the teacher.

The difference here was that Patrick's lesson provided a situation in which learners were genuinely **thinking for themselves** and creating their own outputs (i.e. criteria for rating a classmate's work). Patrick did not interfere with this process, but helped the learners to improve their outputs.

There are several important things to note about this lesson:

- Patrick stepped back and handed a certain amount of control to the pupils. He allowed them to produce something of their own making, and he was not in control of what they produced. This was essential in allowing them to think for themselves.
- The lesson was based on an idea which had been briefly discussed at a project workshop, but neither Dimakatso nor Peter had planned such a lesson with Patrick. He was carrying out his own enquiry into a new method of his own making. Dimakatso suggested to him that his method was leading to a method of assessment-by-peers, but we cannot be sure because the lesson-time ended before the class could apply their outputs to their own work, and before Patrick could evaluate what they had learned.
- He was trying the new technique bit by bit. There are several further steps to take in order to consolidate the learning from this lesson². For example, a further step would be to present all the criteria from the groups on the board and ask the class to rank them from most important to least important, and give their reasons. (One group in fact went far beyond criteria for spelling; instead they pointed out that the sample worksheet had not actually solved the problem, *"We needed the amount of water which the tree loese a day."* See Appendix 1)

² After the writing of this account, Patrick pointed out why he had taken such a hands-off role in this lesson. See the postscript on page 24.

Looking at the lesson in the broader perspective of Curriculum 2005 Critical Outcomes. One of these critical outcomes is that *learners reflect on and explore a variety of strategies to learn more effectively*. Patrick's second lesson sets him on a path to this outcome. The learners are beginning to consider how a person decides the difference between high and low quality work. If the criteria are made clear, they might use them to evaluate their own work.

What is needed now is to draw out their criteria for good work, discuss the criteria, clarify them and write them down as a product of the class's thinking. If these criteria were placed and left on the wall, they could become a part of the learners' and teacher's normal discussion about how to get good marks.

However, Patrick was trying a bit of “the new thing” and so we should not expect to see all the aspects of peer assessment in one lesson. The important question is whether he will have good reason to push on and develop this assessment-and-teaching method, and whether we should expect him to do it entirely alone, or whether he will go further if he is in a dialogue with other educators.

11 Ideas of OBE co-exist with CBE (content-based education) in the school

This story tells only a little of the many ways Patrick and the school have tried out “the new thing” of assessment. We have chosen the two lessons above to give one illustration of what we have learned from watching a much greater number of lessons, and from many hours of discussions with Patrick and each other.

However, out of our records we can make some statements about how the teacher and principal see the OBE assessment innovation. These statements have been tested in discussion between the insiders (Patrick and Mr Mphahlele) and the outsiders (Dimakatso and Peter).

The way we see it, teacher and principal have come to a position in the project where

- (a) Patrick is dedicated to doing a good job of teaching the core syllabus and preparing his pupils for examinations.
- (b) He feels strong reasons both to maintain “the old methods which teachers have been taught” which meet the needs of content-based education, and to press forward in trying the “new thing which has come” - outcomes-based education.
- (c) He is resourceful in trying OBE approaches **and** in maintaining CBE. However, the two kinds of teaching cannot really be held separate, and there are many points of compromise and ongoing tension. The compromises mean that neither “the old methods” nor “the new thing” can truly be done to the full.
- (d) The present situation creates a difficult dilemma for him: the message of Curriculum 2005 and the education department is

that teachers must embrace new methods of teaching and assessment. However, in practice teachers are still judged by their success in the old methods of teaching and assessment.

- (e) The principal feels that it is important to embrace the ideals of the new curriculum; the school's involvement in the SfAA assessment project has given it a piloting role in Curriculum 2005 and that he is aware of this. *"It gives the children a better scope for understanding."*

At the same time, he values consistent teaching of the conventional kind; he feels that it gives stability to children and the school. He is concerned about the complexity of the Curriculum 2005 policy, and wonders whether it will offer that atmosphere of reliable, stable teaching that he has built up. In particular he believes that semi-automatic promotion will affect the discipline and commitment of both teachers and learners. Both will feel that what is not accomplished in this year can be left over for another year and for another teacher to worry about. Far better to ensure that a child is ready to proceed before sending her up to the next grade. The way to ensure that she stays with her age-group is to maintain firm standards and bring in support services, such as school psychologists, if that were needed.

12 Shifts toward OBE in the school

Now we must look at change in more detail. During the 12 months of the school's involvement with Science for All Assessment, there have been movements in the way science is taught and assessed. We cannot assume that all these movements or shifts have been directly caused by SfAA, because we are part of a much larger environment of curriculum change. There are posters around the school promoting the ideals of Curriculum 2005. But these shifts are significant for OBE assessment, and so we must comment on them in this story.

12.1 The readiness of key people in the school to try OBE methods and assessment

In its invitation to schools to join, Science for All Assessment presented the broad intentions of OBE in a positive light, and the workshops have pointed out reasons why the ideals of Curriculum 2005 should be followed. However, SfAA has also made it clear to schools that Curriculum 2005 must be treated as an untested idea, and the aim of the schools' involvement has always been to test it and try it in practice to experience its implications. Acclaim Primary and SfAA have tried to go beyond the Curriculum 2005 rhetoric and the generalised statements, and turn the ideals into real lessons and assessment of outcomes.

Movement towards OBE

- (a) Our numerous conversations with Mr Mphahlele, Mbokodo Skosana and Patrick Monareng leave us in no doubt that they support the intentions of the Government to change the curriculum from CBE to OBE. They are impatient to move away from the bad history of apartheid education.
- (b) The principal supports the change to OBE but he does not forget that Acclaim Primary School comes from a history of apartheid education; it must emerge from it with dignity and in fellowship with other schools who share the same history. The school has a sense of solidarity with other neighbouring Black schools. It is important to change in agreement with them, and in pace with them. If Acclaim Primary were to change hastily, it would be walking away from its history. A hasty scramble to move over to OBE could leave the school disconnected. The principal knows that the former "Model-Cs" in the area might seek to change quickly, but then they have the resources and a different history.

Comments, and possible next steps

- (a) The project has involved just one subject, General Science, as a trial case. There are unanswered questions about how OBE will affect the school if all subjects are involved. It might be time for the school to have a series of discussions involving the science team (Patrick, Dimakatso, Peter) and other teachers, to explore some of the issues which are emerging from the project in General Science. (This document tries to lift up some issues for discussion).
- (b) It is still early days for OBE at Acclaim Primary. The work has raised many questions. Yet every school will have to go through this stage, and so it is not too early for the school to tell what it has done and discuss the issues with other schools.
- (c) There is another possibility: the school might wait and see whether the education department follows through with its implementation plans. However, the school has taken an initiative and there are signs that staff are ready to move into the free space created by the coming of change. Those are potentials which should be developed.

12.2 The development of a new form of reporting to parents

SfAA has urged each project school to develop a trial report-card for parents, in terms of science outcomes, in order to experience the difference between norm-referenced and criterion-referenced reports.

Conventional school report-cards show children's achievement in terms of percentages for each subject; each child is assessed with reference to the marks which other children achieve, because the teacher knows what is normal for that Grade. Tests usually are

planned so that a class's marks are not too high or too low with reference to the normal marks for that Grade in past years. In a particular exam, there will normally be a large group of children with marks around the average, a smaller group with low marks, and a small group with high marks. OBE assessment, which SfAA promotes, is criterion-referenced. That means that the teacher gives children ratings with reference to a criterion or description of what they must be able to do. If all children can do that thing, then the whole class gets the "pass" rating. It all depends on an accurate description of what the children are expected to do³. Thus far, we have been working with a process-skills record sheet, to record children's use of process skills which together are needed for the Specific Outcomes. More on this in Section 12.6.2 (a) on page 20.

Now, what is a reasonable and accurate description of how children deal with the outcome, for example, *SO3: Learner applies scientific knowledge and skills to solve unfamiliar problems?* In its next Phase, the project wants to work with teachers to establish such reasonable descriptions or criteria for judging children's work.

Movement towards OBE

Acclaim Primary School report-cards in Grades 4 - 7 were of the usual kind, namely, a percentage for each subject with a space for comment by the teacher. However, the report-cards issued in July 1998 show a marked break with the past. A draft new report-card was issued in late May; children's performance in languages and mathematics were reported in four areas. Language reported on reading, speech, reading skills, writing skills; maths reported on number concept, problem-solving, written application, basic operation. General Science, however, reported only a mark for effort, and an exam mark. Mr Mphahlele confirmed that the new report-cards showed that the school *"aimed to speak to parents in more detail"*. However, during the meetings to discuss the new report-card, the work done on science had not been brought into the discussion. Mr Mphahlele explained that in his view science is really mathematics, and in the next report-card the school would report using the four maths categories listed above. Dimakatso questioned this, because she, Peter and Patrick had been using a comprehensive record-sheet which reports on children's use of 12 process skills. In mid-July, then, a revised version of the report-card was used: it is the same as the May version, but science now reports on Specific Outcomes 1 and 3 (combined, and in 10 skill categories) and Specific Outcome 2 as content knowledge. See Appendix 2 for the old, draft and new report-cards.

³ In terms of the level descriptors which the GDE is developing for each outcome, the teacher would have a document in which the performance is already described. The teacher would make a judgement, based on several pieces of a child's work, about what level a child is on. So the criterion works like this: *"I want to get Aaron onto Level Three in doing investigations: is he there yet?"*

Comments, and possible next steps

- (b) We lack some information on why the May report-card was drawn up without reference to the science process skills. However, it may be that there was a meeting of staff in which it was felt that science had been receiving more than its fair share of attention, and it was time to put other subjects to the front of the stage. (This is just speculation, but such concerns commonly arise in schools where one subject has been a focus of attention.) If so, perhaps the school is ready to extend the introduction of OBE methods into all subjects. The try-out of OBE methods in Science was not done for its own sake but General Science is a test case for other subjects. Clearly, Languages and Mathematics teachers are discussing similar issues already. The comments in this part of the story are meant to apply to other subjects as well as Science.
- (c) At the time of writing Peter and Dimakatso have not yet seen the filled-in July report-cards. The Science report-card indicates to parents and school staff what the OBE curriculum intends children to do; at present, the teaching is still in the try-out stages and it is difficult to report much about an individual's skill in predicting, raising questions, and so on.
- (d) Mr Mphahlele warns that in the long run teachers will not want detailed report-cards requiring reports on many skills and outcomes: with large numbers of children to report on, they will not have the time to collect, consider and write so many comments or scores.
- (e) Ultimately, the Science report-card might be simplified to fewer categories, but at this stage, the concept of process skills must be built up in the school's curriculum and the detail has a useful function: it reminds teachers, learners and parents of the difference between Science in CBE and OBE.
- (f) We need to follow on Patrick's initiative in meeting with parents to discuss his new approaches (He met some Grade 5 parents and showed them the practical work their children had been doing).

12.3 Timetabling of lessons

OBE requires a new approach to school management and timetabling. The school previously had 30-minute periods for all subjects. The SfAA project did not promote a specific timetabling policy; it just asked for double periods for science.

Movement toward OBE

Almost all subjects in Grades 4-7, not only science, now have double periods (60 minutes). This enables teachers to plan for the many forms of group-work which are needed for OBE, and it seems that the teachers and principal could now draw in

resource people to design a (not too ambitious) pilot OBE curriculum for several Grades for 1999.

Comment, and possible next steps

- (a) Some OBE lessons might need longer than 60 minutes, and the timetabling may need to become more flexible in the Grade 4-7 part of the school.
- (b) The longer times for each lesson place an onus on teachers in all subjects to provide a variety of interesting tasks for learners. 60-minute lessons of the traditional teacher-talk kind may show lower learning gains than expected.

12.4 The development of materials in the school

OBE requires children to use more materials and a greater variety of materials than in traditional classrooms, because they can then demonstrate a much greater range of outputs. Some materials will come from commercial publishers and non-profit NGOs, but it will remain important for schools to develop their own materials also.

Movement towards OBE

The Grades 5, 6 and 7 children have indeed used a greater variety of materials during Phases 1 and 2 of SfAA, and teachers have joined in creative improvements to materials. For example, during Phase 1, Patrick and Mbokodo each pointed out solutions to problems in the original version of the *Water rise* activity (water rising up tissue paper; see Appendix 3). This was a new kind of activity, which involved measuring two variables (height of the water, and time).

Peter had assumed that squared paper and bar graphs would be the easiest way for the children to represent their data. After using the task, Patrick reported that the children preferred not to estimate fractions of centimetres but recorded the height to the nearest whole centimetre. This resulted in a bar graph with misleading, horizontal sections.

Mbokodo pointed out that the paper stretched when wet, which made the heights unreliable anyway - his suggestion was to use a plastic ruler with millimetre divisions on it, and we soon saw that if the tissue-paper was clamped between two rulers it would (a) not stretch and (b) the children would have a reliable scale for reading off height to the nearest millimetre. Patrick pointed out that Grade 5 geography texts use line graphs, so the children might cope with drawing them in this situation, so we decided to abandon centimetre-squared paper and change to millimetre-squared graph paper.

The *Water rise* task was used in this improved form at Carlow Road Primary School, and it worked extremely well and produced some new insights into science assessment.

This materials-development incident is included in the story to illustrate an important point: this kind of teacher-to-teacher discussion will be essential if the whole school is to make a success of OBE. Similar discussions will be needed in geography, history, mathematics and all the other subjects/learning areas. The talk will hinge on two questions: *What outcome do we wish to see in the children?* and *How do we design activities for them which allows them to do those things?*

This issue of school-based materials development is so important that we are now going to set out some aspects of the discussion around the *Water Rise* task:

- (a) There was a new kind of activity, based on process skills.
- (b) We made the opportunity to try the activity with children.
- (c) We knew that this was a first trial and we knew the activity might need rewriting; we could take the risk that it might not work well the first time.
- (d) We made a time in the day for us to discuss what had happened.
- (e) We arranged it so that two and more teachers observed the same activity, and evaluated the way the children coped with it, and discussed ways to improve it.
- (f) There was the opportunity and willingness to rewrite it, and try it again.

These aspects, (a) to (f) above, mean that teachers' time will need to be structured differently. Schools will have to review the way timetables are written. Curriculum 2005 / OBE timetables should allow for periods in which teachers can discuss, for example, materials development and assessment. It also seems clear that Curriculum 2005 means that teachers will meet much more often out of class times to develop materials and co-ordinate lessons around the integrated learning programmes which Curriculum 2005 calls for.

Comments and possible next steps

- (a) At this stage, the school principal and the science teacher have been quite flexible with timetabled periods and private time. For example, when Peter was introducing a task to Grade 7 class, the principal simply ordered the bell-ringing pupil not to ring the bell so that Peter would have as much time as he wanted! Patrick is always willing to make arrangements to enable us to work after school, and to work at school during the holidays.
- (b) These arrangements by Patrick and Mr Mphahlele reflect their personal commitment to SfAA and to trying "the new way"; however, in the longer run, personal commitment needs to be extended into policy changes which affect the whole school.

- (c) For example, the school might have to re-plan its weekly schedule for teachers so that it can create times for the essential teacher-to-teacher discussion and the use of outside "stimulus people" in all Grades and all subjects/learning areas. Those times will need to be 30 to 60 minutes long, if teachers are to grapple with the deeper meanings of an OBE curriculum.

12.5 Practical work and its assessment

Before the school's involvement with SfAA, practical assessment was not a regular feature of lessons, and indeed there are still difficulties in doing and assessing practical work with classes of 45 children.

Movement towards OBE

Compared with last year, each of the classes this year has had more practical experiences with science which can be assessed. Here follow a few examples of assessed practical work from Grades 5 - 7:

- (a) In the Grade 5 class of 70 children, we tried a circus-of-activities method in which each child did 3 activities in measurement of volume and area, and this was completed in a time of 80 minutes. These activities were opportunities to do some problem-solving, and were not simply a matter of following instructions. We felt quite proud of this achievement, as we had wondered whether it was possible to do meaningful practical work with such a large class⁴.
- (b) In Grade 6 the children germinated seeds and recorded the changes which occurred, while trying to answer the question, What makes the roots grow downward?

In the fourth term, they will do a construction project in electricity. Patrick has set this task previously, in 1996 and 1997.

- (c) In Grade 7, the children constructed a wind-up toy tractor as an example of a system which stores potential energy and releases it as kinetic energy. They did an investigation in which they measured the angle of the steepest hill the toy could climb, and produced two written reports on their investigation.

Comments, and possible next steps

- (a) Practical work in science is time-consuming. It is also an essential part of OBE. This sets up tensions with syllabus coverage. At Acclaim Primary, Patrick has had to be resourceful to deal with that tension.

⁴ This lesson has been written up in the booklet *Water from leaves - practical measurements*. There are descriptions of the classroom organisation, apparatus, the way we set the assessment criteria, and the results for the class.

In the case of extended practical work by the Grade 6 and 7 learners, he has found it better to set tasks which can be done at home rather than as part of the lessons. For example, the Grade 7 class investigated their wind-up tractors' hill-climb abilities at home; they wrote their reports outside of class time.

- (b) However, managing practical tasks in this way cuts down the amount of useful questioning that the teacher can do, and the amount of assessment he can get from the task (apart from assessing written work, of course). The children do work together on tasks, but the teacher cannot observe or assess them as they learn to work with others.
- (c) We think that his Grade 6 and 7 pupils have learned a great deal from the integrative projects he has set them (e.g. electric circuits in Grade 6, tractor-investigation in Grade 7). These tasks represent children attaining outcomes. The children need to integrate a variety of skills to do them. These tasks, once Patrick has assessed them, will be a valid item to report on under *Specific Outcome 3: Learners use science skills and concepts to solve unfamiliar problems*.
- (d) We have not yet (working as a group) developed criteria for assessing the integrative projects; this is the next job that awaits us.
- (e) Note that OBE extends the meaning of the word "project." Over the years, "project" has come to mean that children copy information from sources, and glue their text onto chart paper. In OBE, outcomes are big outputs from children, so a "project" might mean a multi-step task such as developing a method for earning money from re-cycling waste material which people discard at the school.
- (f) The circus-of-activities method of practical assessment, which worked for Grade 5, with 70 children, could be repeated. Patrick, Peter and Dimakatso need to go through the syllabus and pick other areas which lend themselves to quick activities.
- (g) The independent work by groups needs development. We need more skill-based worksheets with a clear focus, and the children need practice in working together in this way.

12.6 Methods for assessment of process skills and outcomes

Process skills, which are needed for science outcomes, were not a part of the school's science curriculum before. Science for All Assessment based its science assessment innovation squarely on a framework of process skills and produced a three-page list of them ("the pink pages"). The project staff expected the teachers to become very familiar with that list. These skills are necessary in attaining the Natural Sciences outcomes and indeed a similar lot of skills are needed in attaining maths, history and geography outcomes.

Movement towards OBE

- (a) Beginning from a workshop in January 1998, SfAA staff developed an A3 record-sheet to record children's use of process skills in lessons. See Appendix 4. Patrick has used these record-sheets to record and rate (on a four-point scale) the ability of Grade 5 and 6 children to measure, record and compare information about growing plants and volumes of liquids.
- (b) Mr Mphahlele has commented on the children's surprising ability to produce torches, model houses, cars, fans and boats, all working with batteries. He has stated that Patrick's Grade 6 electricity projects have raised his expectations of what children can do.

Comments, and possible next steps

- (a) We found the A3 record-sheet hard to use during lessons; the interaction between children is too complex to capture in this kind of a record-sheet. However, the record-sheet is useful after the lesson for recording evidence from written work. Patrick changed the project's rating scale to fit with the school's five-point scale. From the A3 record-sheet he transferred the record to the child's report-card.
- (b) The principal sees the value of teaching and assessing skills, but at the same time, he is concerned that it could be a distraction from the present real need to cover the syllabuses. He would like to try an approach in which the content is dealt with thoroughly and then the skills could be taught. The SfAA staff think that the children will not understand how skills work unless they develop them while doing some interesting tasks - and those tasks must be based on some content. The SfAA approach is to develop different sorts of tasks which require both skills and content.
- (c) We have so far worked mostly at the simpler levels of process skills, such as measuring and comparing. We have not yet had any examples of lessons where the children themselves raise questions or plan a way to test an idea to answer a question. Acclaim Primary School might be able to go further along that road.

12.7 The way assessment is used in the school's curriculum

An OBE ideal is that assessment is a teaching method: assessment does not come after the teaching⁵. The Science for All

⁵ One of the writers (P.Moodie) believes it is time to abandon the term "continuous assessment." It has become unhelpful due to the persistent confusion around it. Even some official policy documents on assessment policy reflect the confusion. It would be better to introduce a term such as "assessment-as-teaching," which implies frequent and multi-dimensional assessment. Assessment-as-teaching has many more purposes and many more techniques than traditional assessment, which has mainly one purpose (collecting marks after teaching, usually for summative evaluations) and mainly one

Assessment project promotes certain OBE principles of assessment, for example, that teachers should use three main forms of assessment:

- diagnostic assessment (to find out what the children already can do, and thus to plan the next lessons, or to provide remedial help)
- formative assessment (to find out how well the learners are doing, and whether the lessons are helping them, and to find this out before it is too late to correct things that are going wrong)
- summative assessment (to decide how well the learners have done when they reach the end of a unit. A "unit" can mean the work of a week or a month or a year. The point is that semi-final decisions are made by the teacher, the class moves on to new work and there is less opportunity to go back and improve on the unit that is ended.)

OBE lessons provide an opportunity for learners to produce something, and the teacher assesses the **process**⁶ by which it is produced, or assesses the **product**, depending on what the teacher is interested in.

In C.B.E. it might be seen as unfair to test content which the teacher has not specifically taught the children, but in OBE we seek to develop skills in coping with unfamiliar problems. In OBE the teacher might want pupils to learn how to deal with unfamiliar situations. He can tell the pupils *"This is an unfamiliar problem, so I will give you the information you need. I will assess you on how well you make use of the information in dealing with this unfamiliar problem"*. In OBE, it is thus quite possible and fair to set tasks which the children have never seen before and then to assess the children as they work on the tasks. The assessment is not asking *Does Lydia pass or fail the test?* Instead it is asking, *Has Lydia got better at organising the information which I give her?* and *Does she need more practice at this sort of problem?*

The assessment actions of the teacher give the learners insight into what they must do to perform better. In other words, the teacher tells them quite clearly what he/she expects them to produce; when the work is being assessed, the teacher reminds them what was required and points out differences between what they did and what is required for a good score.

Movement towards OBE

Assessment in science lessons at Acclaim Primary is more regular and systematic than at many other primary schools, and less disruptive to teaching than in some other schools, because the Grade 4 to 6 classes do not have the common

technique (pen-and-paper response to recall questions).

⁶ "Process" means all the cognitive, physical and social skills the learner brings to the task.

"cycle tests" which bring teaching to a halt⁷. The most frequent assessment in science at Acclaim Primary is by quick informal checks on whether the children have been paying attention during the lesson, as described on page 7. Then there is non-marked assessment of written classwork and weekly tests for the senior class. The major focus of assessment is the common exam which children write in June and November. However, we have pointed out in the discussion above on the report-cards (page 16) that teachers and principal are thinking about assessing and reporting on skills in Languages and Mathematics.

Comments, and possible next steps

- (a) The school might want to deepen the discussion around the skills in Mathematics and Languages, using the experiences we have accumulated in General Science. This could be done by using reference people such as Dimakatso, who has school-based experience of Mathematics assessment and general insight into assessment methods. Another approach would be to set up a link with another school which is also interested in examining its assessment methods; such inter-school projects can be very fruitful.
- (b) In Patrick's lessons we have seen many aspects of assessment methods in General Science which we could describe in more detail and which could be developed further. For example, Patrick has a practice of asking pupils to allocate themselves a mark for a piece of work. Sometimes he follows this up with a mark of his own, sometimes he lets the pupil's mark stand. This practice is a close cousin of the peer assessment technique we described on page 12.

To give another example, Patrick tests the Grade 4 to 6 classes approximately once a fortnight. The children write their answers for about 30 minutes and then for 30 minutes Pat discusses the test questions, they mark their own or their classmates' work and they correct the wrong answers. Patrick sees the main use of the test as providing **him** with information about the pupils' progress. However, his tests have great potential for providing each **pupil** with information about how to do better. This already happens of course, but the marking and discussion part of the test could be planned deliberately as a learning event to get the maximum benefit for the pupils. Techniques such as wrong-answer analysis and concept-mapping could be tried.

12.8 The meaning of learners "thinking for themselves"

This phrase which Patrick used (in the lesson described on page 12) captures an essential ideal of OBE. The new curriculum aims to grow learners who have learned how to learn, who can use *critical*

⁷ It seems that cycle tests in some schools are held for discipline purposes as much as for assessment.

and creative thinking (Critical Outcome 1), can ... *collect analyze and critically evaluate information* (Critical Outcome 4).

We must note two meanings of the phrase “learners thinking for themselves”. In OBE the meaning is that the teacher organises tasks for learners so that they can use ideas which come from themselves. The meaning in CBE is usually that learners are “thinking for themselves” when they repeat the more difficult knowledge which the teacher has previously explained to them; in this view, they are “thinking for themselves” when they are recalling knowledge without being reminded by the teacher.

Patrick's phrase touches even deeper philosophical issues, which go beyond CBE or OBE. It touches on the view that educators have of their learners. On one view, the learner is the one-who-does-not-know, and it is the role of the teacher (as the one who knows) to guide the learner through unknown territory, preventing the learner's mistakes as far as possible. Another view is that the learner learns from many sources (teacher, fellow-pupils, parents, media, experimentation) and might produce ideas or solutions or outcomes which the teacher never envisaged. In this view the teacher's role is to help the learner be a self-directed problem solver.

The difference between the two teacher roles is like this: in the first role, the learner is the one-who-does-not-know, and the teacher selects problems and guides the learner, step-by-step, in dealing with those problems. Often, the teacher provides only the information that is needed for dealing with the next step in the problem. The kind of talk which the teacher uses keeps the class together in an atmosphere of togetherness, with the focus on the guiding role of the teacher.

In the second role, the teacher aims to prepare the learner for independent action. So the teacher concentrates on helping him/her to understand the underlying nature of a classroom problem, and describes what a good final solution will look like. The teacher encourages the learner by offering enough information to allow the learner to carry on independently. The classroom atmosphere may also be pleasant, but the kind of talk which the teacher uses focuses the learners on the requirements of the task; teacher-talk has less to do with the class feeling togetherness with the teacher and reliance on her.

Movement towards learners thinking for themselves

Patrick has taught lessons in which he gives the learners the opportunity to think for themselves; we saw an aspect of this in the lesson on page 12. In his extended projects, the learners definitely do their own thinking. We also see the difficulty of reconciling two aims - to cover all the syllabus content very well and to push forward into teaching for skills and outcomes. (We do not imply that Patrick or any other teacher is faced with a choice of either content

or skills - both the content and the skills of science can be taught excellently through the right choice of outcomes.)

Comments, and possible next steps

- (a) The challenge now is to get the pupils thinking for themselves more deeply. For example, Patrick decided to re-arrange the Grade 5 classroom to allow for groupwork, and since then the Grade 5 children have done several groupwork activities. To improve their thinking for themselves, Patrick might have to do two things: firstly, give them some carefully structured tasks with clear questions which can best be answered by group thinking, and secondly, invest some time in teaching groupwork skills.

Another example: Patrick has begun to use a peer-assessment method. In the discussion on page 13, we suggest how to take the method further so that children do deeper thinking for themselves.

- (b) Each of these steps would be relevant to teachers of other subjects also. Each step could benefit from using outsiders who have experience in these skills.
- (c) The quality of children's thinking for themselves depends greatly on the quality of the tasks we give them. Tasks which ask only for recall of right answers don't create opportunities for independent thinking.
- (d) Good tasks can teach - it's not only the teacher who teaches. For example, in science we saw the Grade 5's coping unexpectedly well when we set them an unfamiliar measurement task. They were learning on the task, and they were learning from each other.

The important thing is to structure the task. The teacher can't just give it out and ask the class to get on with it. The teacher must discuss it (as Patrick often does) so that the children understand what is required, and they have an answer to their question, *Why are we doing this, and what are we trying to learn?* Sometimes the written task has structure already, in the form of step-by-step instruction. Other tasks leave it to the teacher to judge the minimum amount of structure or support the children need. We all made some mistakes as we gave the children tasks with less and less structure. We think we have learned from the mistakes.

13 Postscript: The teacher's and the project team's different ways of looking at the change project

This section has been written after Patrick responded to several drafts of the story. It is a difficult section to write, because it is about embarrassment and hurt feelings. We are including it because Patrick helped us to learn important things; these things might be important for other people who work closely with schools.

There was a misunderstanding during much of the project period, which became apparent only near the end of this time. When we (Dimakatso and Peter) engaged with Patrick we saw our role as

- (b) to present some of the innovations which Curriculum 2005 requires, but also
- (c) to accept that Acclaim Primary runs according to its own established practices, and allow the school, and Patrick in particular, to modify what we presented and
- (d) to try to **understand the reasons** why Patrick modified the project methods in the way he did. His **reasons** would give us insight into how the innovation might work in other schools.

Patrick viewed our roles from a different perspective.

First, he saw no distinct shift between the project's Phase 1 and Phase 2. Phase 1's emphasis had been to find out what the children could do with minimal help, and we had used groups of 6 children for this. In Phase 1 we deliberately stood back and avoided teacher-talk as much as we could. Patrick saw Phase 2 as a continuation of Phase 1, except that the group was now a full class. Therefore he still held back from giving support to the classes.

Dimakatso and Peter on the other hand expected Patrick to try out more aspects of mediating an OBE lesson. If you refer back to page 13, you see us note that he could have taken that lesson further. In fact he was taking a hands-off role as we had advised in Phase 1. He felt that he was doing this for us - "*I was experimenting [with OBE] for you*" - and was not doing what he would naturally do. Under other circumstances he would have provided much more support for the children.

Second, Patrick viewed our work as training him in the new curriculum methods: "*You came to show me the new method.*" He was ready to be observed and even to be evaluated, provided that we, Dimakatso and Peter, then told him how he should improve. He is committed to learning the new methods. We however were hesitant to teach new methods, because we did not know which methods were likely to fit with Patrick's ways of seeing teaching. There has been a long history of outsiders telling teachers how to do many new things, without taking account of the reasons why teachers do what they do. We did not want repeat that mistake, and we were willing for Patrick to tell us that our suggestions were unworkable. All we required was that they should be seriously attempted first. However, Patrick did not see us being very hesitant to teach new methods. Rather, he says that we were saying to him "Try this, try that." He rose to the occasion by trying as many of our suggestions as he could, and by being as helpful to us as he could. Therefore he had an unpleasant surprise when he received the first draft of this story and found that we had commented on his lessons. Our comments seemed to say that he had "done it all wrong."

For him, it was like being led into a trap: we had not given him corrective feedback, yet now we seemed to be writing down criticisms of his classroom methods. His response was to say that we were entitled to write what we thought, and that since we were experts in these methods, he was not in a position to argue about our conclusions.

Reflecting on what happened

We think Patrick wanted a clearly defined system of OBE assessment to follow; if we taught him new methods and gave him feedback on how well he was doing it, Patrick would give himself heart and soul to the methods. The difficulty for us (Peter and Dimakatso) was that few people really know how to do OBE assessment yet and few know how to deal with its consequences - we are all three on the edge of the unknown.

However, there are deeper issues at stake. Any training and advice should not undermine Patrick's ability to analyze the Curriculum 2005 assessment policy and judge for himself. Patrick is able to reflect critically on his experience and on the practices of his lessons and his school. A simple trainer-trainee relationship could prevent us learning from Patrick.

Thirdly, there were personal histories. Patrick has, in his head, most of the information about the children and the intentions of his lessons. Peter has a science education background and has been able to offer Patrick specific lesson ideas and lend him apparatus. Dimakatso, on the other hand, comes from a maths education background, and her involvement was much more as a researcher. She and Patrick discussed classroom organisation and assessment methodology, but her role was not to offer direct science lesson support. These differences resulted in Peter appearing to Patrick as the supportive person while Dimakatso (the writer of the first draft of this document) appeared as the critical person. For Patrick, these factors made it difficult to see that Dimakatso and Peter both wanted to learn as much as possible from him..

Appendix 1 Grade 6 pupils' assessment comments on sample work

Appendix 2 The old, draft and new report-cards

Appendix 3 Old and improved versions of the "Water rise" task

Appendix 4 The skills and outcomes record-sheet