

Psp Evaluation: Next steps.

Cliff Malcolm and Lavine Kowlas
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The notes below are part of firming up plans for the PSP Evaluation in 2002. The original plan has five promised components:

1. The general study of a sample of schools, building on last year's study.
2. Detailed, longitudinal classroom studies in three classes
3. Studies of workshop practices and processes
4. Studies of PSP administration, management and activity
5. Evaluation of the published PSP curriculum materials

The Stage 1 study, completed in 2001, has shown that:

- The PSP is generally well managed, thoughtful, creative and committed.
- Teachers and principals highly value PSP and their involvement in it.
- PSP has changed the ways teachers think about learning, assessment, curriculum design and teaching. They report also it has changed their behaviours.
- The teachers in the Stage 1 study generally teach in ways promoted by PSP – their teaching is well organised etc; they work to large extent from the PSP materials; they use activities and groupwork, students are highly engaged. However, classes are widely varied in the attention they give to 'intellectual quality' (higher order thinking, deep learning, problem solving) and connections to local cultural knowledge. We have developed instruments and processes that we can use again to deepen these findings.
- The students did poorly on our tests, in spite of our efforts in test design and administration, in spite of the students being in highly functional, engaging and well organised classrooms, and in spite of students' claims that they enjoy and learn from their science classes.

The next steps of the plan need to:

- Fit with and further the original plan, in both formative and summative ways.
- Build on the picture we already have, deepening our understanding and description of PSP and its effectiveness. This too must have both formative and summative dimensions.
- Pick up on particular problems that we have uncovered – in particular, issues of assessment, and questions about what the students are in fact learning.

We offer the following, for consideration:

The general study:

We should take the Stage 1 findings as an adequate 'general picture' of PSP – especially the general levels of satisfaction that teachers, principals and students have with the programme, and the fact that teachers, in general, can teach in the ways that PSP promotes. Thus, rather than 'rerun' our existing instruments (especially the questionnaires), we should reshape them to go to new levels of insight. For example:

- How do teachers actually modify/adapt PSP modules and why? This could be done by sending out a questionnaire/form in advance, about a particular module they have used, and, during the school visit, talking through with them the changes they made.
- How do teachers actually go about assessment and recording – as part of continuous formative assessment (including assessment of complex performances in context and the use of assessment in further teaching), and as part of summative assessment. This too could be done by having them talk in detail about a module they have taught recently. It would also require discussion of records and students' work.
- What do teachers do to promote deep learning, concept development and connection of learning to students' lives and cultures? This too could be done by discussing a module they have taught recently.

It is imperative also that we redesign our tests, including trials of them with students in the Western Cape, to improve the tests' validity and achieve a greater spread of results. These improvements are critical to:

- The efficacy of the study, and fair reporting of the achievements of PSP. This includes our capacity to seek correlations between teachers' performances and students' performances.
- The formative dimensions of the study, to guide PSP and teachers on ways they can improve students' achievements.

Detailed Classroom Studies:

The detailed classroom studies are intended to augment the general studies through deep insights into why teachers do what they do, and why students do what they do. The classroom observations in the general study focussed on 'opportunities to learn'. The detailed studies need to focus on learning itself.

We have to balance attention to what the teacher does with attention to what the students do. Of course both domains are important: what the students do depends strongly on what the teacher is guiding them to do. However, there are good reasons for giving our primary attention to the students:

- Our tests have shown us what the students cannot do, but we don't know why. Nor do we know what they *can* do or *are* learning. How are they managing language issues? How are they connecting classroom work to their own lives and cultural knowledge? What are the difficulties they are having with concept development and how can these be overcome? If in fact they are *rejecting* the scientific knowledge offered them in the classroom, why are they doing so? What makes, for them, a piece of knowledge acceptable to the point that they are prepared to build it into their own knowledge structures?
- It is not clear how well teachers 'know' their students and their students' interests and purposes, let alone learning styles and learning issues. To bring this kind of knowledge into the arena will be an important contribution, in helping with the selection of contexts for learning, and approaches to concept development etc.

In our attention to teaching, the detailed classroom studies should focus on:

- The development of 'intellectual quality' and connections to cultural knowledges – two areas which our Stage 1 study suggested are relatively weak.
- The design of activities to maximize learning for all students
- Approaches to assessment and the use of assessment within the classroom.
- Students' longer-term development. For this purpose, we should follow the same students from Grade 5 in 2002 to Grade 6 in 2003, even if the teacher changes. (This could be problematic, for example, if the selected group of students whom we focus on in Grade 5 is dispersed in Grade 6).

Methodologically, this is difficult research. It involves:

- Tracking students learning processes and educational development over a two year period. This will require development of strong portfolios of their work and achievements, in a variety of outcomes. The teacher will need to be closely involved.
- Plumbing students' educational interests and purposes, learning strategies, and the criteria they use for the accepting/rejecting ideas. We are working with Grade 5 students whose first language is not English, who are probably shy, and whose family, community and cultural life is outside the researchers' experience. We have little documented research to fall back on.

Our approach must be to involve the teachers and the students as co-researchers; to enable them to not only provide data, but to help shape the methodology and participate in data collection. We will need teachers or others also to take the lead with language and translation. In broad terms, a number of data gathering strategies are possible:

- Work with teachers to plan developing programmes, assessment tasks etc that provide opportunities to map students' educational development over an 18 month period.

- Work with the teachers to develop high quality activities, which they then run with the students. Video tape those segments, paying particular attention to a selected, small number of students within the class. Replay the videotapes with the teacher and each student, asking them to 'think out loud' about why they were doing what they were doing; what they were thinking at the time.
- Interview the selected students about their learning strategies, the ways in which they decide whether a concept is worth pursuing or not, the reasons why they find it difficult or not, the kinds of connections they make to it. This is probably best done in terms of the ideas and activities in the module currently in progress.
- Interview students (or perhaps conduct activities, such as drama, role play, response to story, as a stimulus) about their own beliefs and interests, trying to draw out ways in which their lives outside of school, and their cultural beliefs, enter into their learning.
- Enlist the teacher, as co-researcher, to follow the selected students carefully, talking with them and other students as appropriate, keeping diary notes of insights and observations.
- Meet with some communities/families, perhaps with the teacher present, to get a different perspective on the students' lives and interests, and the families' hopes for the students. This may be difficult to organise.

Curriculum materials:

The evaluation of curriculum materials should have the following components:

- Evaluation by 'curriculum experts', to explore the features of the design, developmental aspects, etc.
- Evaluation by teachers within the PSP, who complete detailed forms (on the ways they used the materials, and the strengths and weaknesses of the materials)
- Evaluation as part of the detailed case studies referred to earlier.

Studies of PSP Administration and Management:

This will continue the work already begun, in observing and talking with staff, and exploring documents, reports, etc from the PSP office.

Evaluation of Workshops:

This will involve:

- 'workshop observations' – perhaps using the same observation schedule used in the classroom observations;
- evaluative reports by attendees
- interviews with workshop leaders, on how the workshops fit into the total programme, ways in which they are seen to be relevant and developmental, etc.

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