

IMPACT EVALUATION OF THE PSP CLUSTER PROJECT: 2007 TO 2009

Summative Report

Prepared for the Western Cape Primary Science Programme
Trust (PSP)

by

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GLOSSARY

CTLI	Cape Teaching and Leadership Institute
HOD	Head of Department
LO	Learning Outcome
NCS	National Curriculum Statement
NS	Natural Sciences
PSP	Western Cape Primary Science Programme Trust
IQMS	Integrated Quality Management System
SAASTE	South African Association of Science and Technology Educators
SMT	School Management Team
WCED	Western Cape Education Department

SUMMARY

1. Introduction

The impact evaluation of the extended PSP Cluster Project sought to provide reliable empirical information about the Project's impact on participant teachers and schools in respect of the following:

- i. School management teams' collaborative production of teaching and assessment plans which met the requirements of the NCS
- ii. Teachers' access to and use of PSP and/or other materials in their planning, teaching and assessing
- iii. The natural sciences teachers' curriculum coverage
- iv. The natural sciences teachers' content knowledge
- v. The natural sciences teachers' assessment strategies.

2. Findings

Overall, the Cluster Project made a significantly positive impact on all sample schools and teachers' performances in relation to the Project objectives. The mean improvement across all areas of professional knowledge and skills by the 20 teachers who participated in both the baseline and the summative assessment was 40%.

The qualitative evaluation findings underlined the fact that the Project was exceptional in respect of the quality of its sustained NS development and support work with teachers. The ongoing manner in which the Project supported the teachers' application of new knowledge in the classroom was an outstanding feature of Cluster Project provision.

The extent of the Project staff's achievement is illustrated by the following specific impacts.¹

i. Attitudes to teaching NS:

The number of sampled teachers who were positive about teaching NS more than doubled between 2006 and 2009.

ii. Attitudes to NS planning:

Over half of the teachers were positive about NS planning in 2009 compared with only three in 2006.

iii. Attitudes to NS assessment:

There was a positive shift in teacher attitudes to assessment but only half of the teachers

¹ These correspond with the Project objectives although the order has been slightly altered to match the presentation of the evaluation findings in Chapters Three and Four.

were entirely positive. This remained the area of most concern to NS teachers.

iv. Teachers' understanding of the Learning Outcomes required by the NCS

In the summative assessment only one teacher lost a mark. She did not understand LO 3 which deals with science in society and the environment.

v. Teachers' Basic Knowledge

The mean improvement in teachers' Basic Knowledge was 39% and the Project made a difference of over 50% to 13 teachers' Basic Knowledge.

vi. Teachers' Scientific Knowledge

The mean improvement in teachers' Scientific Knowledge was an impressive 40% albeit from a low baseline.

vii. Teachers' Knowledge of Applications

The mean improvement on Applications was only 2.5% from a low baseline score of 4%.

viii. Teachers' knowledge of curriculum content across all four strands

The mean improvement in teachers' knowledge of the content of all four curriculum strands was 38%. Despite this general improvement teachers with poor participation records still had inadequate knowledge and understanding of the curriculum.

ix. Individual planning

Teachers' summative scores for appropriate lesson plans were high with a summative mean of 84%. However their scores for appropriate assessment plans were low and too few of these plans were submitted to establish a useful mean score.

x. Schools' phase and assessment plans

The mean summative score for schools' phase plans was 96%. However the mean for schools' assessment plans was 44% which was only one percentage higher than it had been before Project delivery began.

xi. Access to and use of PSP and other NS materials

There was an abundance of evidence to show that the Project teachers had access to quality PSP teacher materials and a range of PSP supplied resources. Teachers appeared to use these materials as well as commercial charts and everyday materials.

Unfortunately few PSP resources have been translated into Afrikaans and isiXhosa. This greatly reduces their effectiveness at schools where the medium of instruction is not

English.

xii. Schools' curriculum coverage

The mean score for curriculum coverage increased by 23%. Unfortunately the range of coverage between different schools was still wide.

In the light of the above achievements, it is disappointing that half of the sample teachers participated in less than 50% of Project provision. Although these teachers' NS knowledge and teaching improved, their knowledge of key NS concepts and curriculum content was still below the appropriate levels required for effective teaching.

The analysis of individual participants' results suggested that the NS teachers who scored highest in the summative assessments had been regular participants on the Project and/or had had CTLI training. In addition, the involvement of an HOD or SMT member in the Cluster Project impacted significantly on the quality of schools' coverage of the curriculum.

3. Recommendations

- The extended implementation of the Cluster Project from one to three years showed limited benefits after the first year because of the instability in the teacher population and the uneven participation rates. Therefore the PSP might usefully review both the length of the Project and the agreement between the Project and its participants.
- In order to facilitate teachers' and learners' understanding and use of key NS concepts and appropriate terminology, all Project materials should be translated and made available in the three official languages of the Western Cape.
- The findings suggest that in the context of the constant change within schools together with the time and effort wasted on getting unmotivated members of subject teams to participate, it might be better to focus more on individual participants than on school teams. If individual teachers were the primary focus for future provision, it might be possible to negotiate a simple system of rewards and sanctions for participation.
- Both the Project staff and the WCED officials should do everything possible to convince principals to resist moving teachers between learning areas and grades when they are or have been, engaged in subject-specific development projects. This practice is wasteful and demoralising for all stakeholders. District Directors should address the school principals in this regard.

→ Project delivery should be weighted so that less time is spent on phase and lesson planning in favour of helping teachers to master the content and the language of the four curriculum strands and the implementation of a matching assessment programme.