

CHAPTER 2

COLLABORATION AND SHARING AS CRUCIAL ELEMENTS OF PROFESSIONAL DEVELOPMENT

Abstract: In this chapter, the notions of collaboration and co-operation are explored in the context of a large-scale project of professional development of mathematics teachers in performance-based assessment. The overall project consisted of series of co-operative workshops in which teachers themselves were employed as facilitators to lead groups of their peers. Although the project was not very successful overall, there were a few successful activities, which occurred during the life of the project. One involved the setting up of a collaborative writing group the purpose of which was to produce a set of *rich assessment tasks*. Reasons for the success of this activity include the high level of collaboration in the group, the sharing of goals by members of the group, and the knowledge and skills of the facilitator. Another successful activity was a series of school-based workshops held over a long period of time in a provincial area, organised by a very competent regional numeracy advisor. The results of the project indicate that many ingredients are necessary for a successful large-scale professional development programme. These ingredients include addressing teachers' beliefs as well as teachers' knowledge; conducting a series of activities over a long period; facilitators having knowledge and skills in co-operative professional development as well as in the content area of the programme; building in support structures for facilitators; and providing opportunities for facilitators to experience success in the classroom implementation of the professional development topic. Key ingredients are the opportunities for close collaboration and the sharing of ideas and experiences.

CONTEXT

Planning a Professional Development Programme

During 1994, in preparation for the implementation of a new state-wide assessment system, the Queensland Association of Mathematics Teachers (QAMT) applied for and received a grant for professional development of mathematics teachers in the area of performance-based assessment and reporting (Bleicher, Cooper, Dole, Nisbet & Warren, 1996). The purposes of the project were (i) to assist mathematics teachers at primary and lower secondary level to implement Student Performance Standards (SPS), the local state version of performance-based assessment outlined in the National Mathematics Profiles (Australian Education Council [AEC], 1994), (a document which promoted a broad range of assessment strategies such as teacher observation, student investigations, project work and writing tasks as well as traditional paper and pencil tests), (ii) to generally broaden the range of mathematics teachers' assessment and reporting practices, and (iii) subsequently to enrich the teachers' mathematics teaching methodology.

A small number of members of the project's management committee were aware of the principles for successful professional development and believed that (i) for teachers to change their assessment practices, there was a need to change their knowledge, beliefs and attitudes to new techniques (Clarke & Hollingsworth, 1994), (ii) teachers' beliefs and attitudes to assessment would change when improvements in students' outcomes occurred (Berliner, 1986), (iii) in professional development programmes, opportunity should be provided for teachers to reflect on the new techniques, and (iv) successful professional development can occur in peer-cooperation situations (Glatthorn, 1987), in which discussion of best assessment practice and sharing of ideas would take place. However, not all members of the project's management committee had the same appreciation of these principles or shared these beliefs. So even though issues relating to the implementation of principles in the project were discussed in meetings of the management committee, it was not possible to gain agreement on considerations such as extent of training and support for facilitators, production of support materials, and structuring series of workshops to ensure a sustained programme of professional development over a period of time.

Nevertheless, it was hoped that there would be regular meetings of teachers, working together as they came to understand performance-based assessment. There was agreement in the project management committee on the idea of peer coaching, with teachers employed as facilitators for groups of their fellow teachers. Classroom teachers and mathematics advisory teachers were recruited to take on the role of facilitator for the professional development of Years 1 to 10 mathematics teachers.

The role of facilitator was crucial in the network of people involved in this professional development project. The role involved conducting workshops for participating classroom teachers on the principles and practices of performance-based assessment and reporting. Facilitators were expected to offer to conduct workshops in their geographical areas for teachers of all school systems (government, catholic, and independent) on relevant topics in mathematics assessment, and after approval by the project officer, prepare and conduct the workshops. A fee of AU\$50 per hour was paid to facilitators for each seminar or workshop, which took on a variety of formats. Some workshops, usually of between two- and three-hours duration, were held during the school week. Others, lasting one or one and a half days, were held at weekends. All workshops were conducted out of school hours, due to restrictions imposed by the federal funding body.

It was envisaged in the initial conceptualisation of the project, that facilitators would not be mere instructors but sharers of their wisdom of practice (Shulman, 1986) in implementing performance-based assessment and reporting in their own classrooms and supporters of groups of teachers who would work together. Ideally, a facilitator would conduct a series of workshops with a group of participating teachers, and over time, the facilitator and the participating teachers would meet to discuss their experiences with the implementation of performance-based assessment and reporting in their own classes and schools. Within the design of the project it was assumed that facilitators would possess the necessary knowledge on assessment and skills to conduct professional development with their peers. Hence, despite the advice of a minority of committee members, minimal support for facilitators was

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planned, especially with regard to developing materials for their use and setting up opportunities for sharing. However, as described later, the reality did not match the ideal very often in that most facilitators did not possess the required knowledge and skills.

EVALUATION OF THE PROFESSIONAL DEVELOPMENT PROGRAMME

The three authors were appointed as evaluators of the programme. The evaluation design was multi-faceted. The data drawn upon included records of meetings of the management committee, discussions with other members of the management committee, feedback sheets from all professional development events, interviews with the project officers, telephone interviews with facilitators and numeracy advisors, and anecdotal records of the evaluators. Numeracy advisors were primary mathematics teachers with special skills and background in mathematics education who were appointed to regions to visit schools to offer advice and support. All facilitators and numeracy advisors were interviewed at least twice throughout the life of the project, once at the beginning and once at the end. The interview questions were devised to ascertain the strengths and weaknesses of the project and suggestions about future directions for successful professional development.

Recruitment, Training and Support for Facilitators

The recruitment of facilitators began during the official project launch, which took the form of a videoconference conducted by satellite across 38 centres in the state of Queensland (a large decentralised state twice the size of Texas, USA, with a population of approximately only three million people). Also, invitations were issued to all members of the professional association of mathematics teachers in the state to volunteer as facilitators for the project. Key people in each region of the state were invited to nominate classroom and advisory teachers who were seen as potential facilitators.

Just weeks after the project launch, facilitator-training events were organised and conducted in Brisbane (the capital and largest centre of the state) and in four other regional centres throughout the state. The programme for these weekend training events included sessions on (i) background to performance-based assessment; (ii) materials available for training events; (iii) planning a professional development activity; and (iv) teaching approaches for mathematics learning. It was planned also that a package of purpose-designed materials to assist facilitators run seminars and workshops be developed and available at the training weekend. However, this did not eventuate.

Approximately 300 potential facilitators attended the training weekend in Brisbane plus 40 in Townsville, 35 in Cairns, 20 in Rockhampton and 20 in Mt Isa, which made a total of over 400 potential facilitators expressing an active interest in the project at that stage. However within six months of the initial training seminars, only 48 of the original volunteers had conducted a course or remained actively interested in being a facilitator.

Collaboration in Teacher Education

Examples from the Context of Mathematics Education

Peter-Koop, A.; Santos-Wagner, V.; Breen, C.; Begg, A.

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