24

Networking educational change: meeting the challenge of systemic school reform

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Abstract

Teachers and schools face unprecedented calls for change which have resulted in a demand for improved teacher education and professional development that cannot be met using established methods. School level interpretation of, and response to, policies and driving factors has produced important answers to the challenge. Computer assisted networking provides a mechanism by which teachers can learn directly from each other and provide peer support in an environment which is enhanced by, but not dependent upon, the participation of teacher trainers and administrators.

Keywords

Professional development, teacher education, innovation, Internet, networks, open learning

1 INTRODUCTION

Calls for educational change are nothing new, but there has probably never been a time when the demands on teachers have come from so many directions or indicated such radical change in content, style and the medium of delivery. Today's educators must not only deal with the call to replace traditional teaching styles with progressive or innovative approaches for pedagogical reasons, but must also address issues such as the fundamental change in the nature of enterprise and employment, declining interest in academic specialities, an increasingly market driven system of education and research, and the pervasive cultural impact of technology and the mass media.

Meeting these challenges will require improved teacher education, both pre- and in-service, an expectation that teachers will accept the responsibility for ongoing professional development and collegial sharing, and that systems will develop a growing sense of professionalism amongst teachers. Based on past experience, it is unlikely that these challenges will be met using traditional approaches alone. Acting

in isolation, faculty boards, curriculum committees and government planners are likely to produce partial solutions at best - policies and plans which rely on the goodwill of teachers and the education community generally for adoption and success. Acting alone, training institutions are generally able to contribute solutions only in specialised areas, which lack a mandate or the capacity to bring about systemic change.

The challenge of systematically educating teachers in any particular field is exacerbated by the length of time taken for the results of research and pilot programs to impact on teacher training and professional development programs. This is particularly the case when the topic is the effective classroom and professional use of technology, a field in which the message and even the medium is changing from year to year.

This paper examines the process of networked educational change in the state of Victoria, Australia, where the government has introduced a new outcomes based Curriculum and Standards Framework (CSF), and where a target has been set to provide professional development for 6,000 teachers per year over four years in the effective classroom and professional use of information technology and telecommunications (IT&T).

2 THE DYNAMICS OF A TEACHING CAREER

A typical teaching career is formed by a series of events, processes and drivers which help teachers to acquire and refine skills and strategies within the prevailing policy environment and the social context of school and surrounding community. The events include pre-service teacher education and in-service professional development, typically involving a training institution. Training institutions typically are also involved with research, the results of which hopefully inform teacher education (see Figure 1).

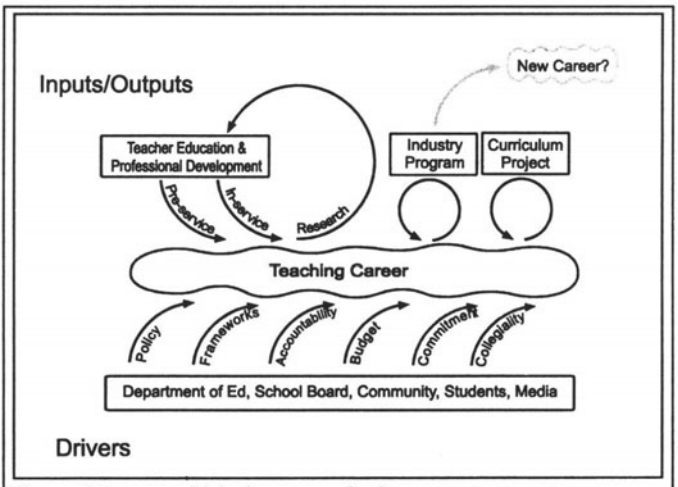

Figure 1 Factors which shape a teacher's career

Many teachers also become involved in curriculum development projects or industry experience programs. Such programs are vital because they not only allow for personal professional growth but also provide an infusion of ideas into the profession generally. Unfortunately for the profession, talented teachers sometimes choose not to return to school after experience in industry, a reminder that school teaching needs to be made as rewarding as alternative professions if the best teachers are to be retained.

The drivers which affect the direction and shape of a teacher's career include factors dictated by the system (policy, curriculum frameworks, accountability and budget) and human factors such as personal commitment and collegiality.

3 SYSTEM WIDE PROFESSIONAL DEVELOPMENT

Is it possible to provide appropriate professional development and support to 40,000 teachers as they implement changes to teaching practice in accordance with a new curriculum and standards framework while simultaneously assisting 6,000 teachers per year to make effective educational use of information technology?

3.1 Limitations of existing models of teacher education

Established models of professional development centre on the development of courses and related materials, and the provision of face-to-face meetings of teachers. The meetings typically take place outside the school setting, requiring replacement of teachers (Figure 2).

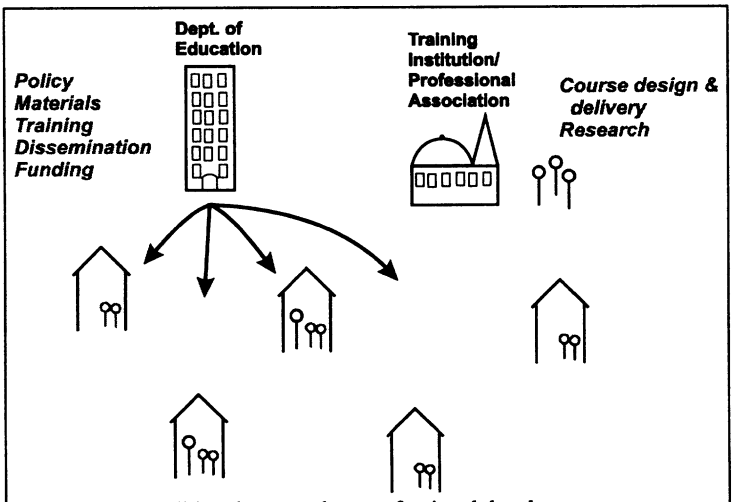

Figure 2 The traditional approach to professional development

Owing to the high level of commitment in schools, it is doubtful that Victoria's professional development targets could be met by conventional face-to-face techniques alone, even if courses and funding were available. Limitations to the

traditional model of professional development for the delivery of rapid systemic professional change are as follows:

- additional workload is always required.
- course content is often peripheral/unrelated to own teaching.
- face-to-face courses are likely to create bottlenecks in delivery under high demand.
- subservience may lead to lack of control.
- it fails to reward teacher initiative.
- it is slow to respond to research and teacher/school innovation.

3.2 A networked model

It is proposed that many component solutions to the training and development dilemma lie in the hands of talented educational practitioners who independently embark on missions aligned with broadscale change agendas. Solutions include examples of best practice from the classrooms which are finding their way onto the Internet through self publishing, or the collection of best practice case studies which are now seen as a valuable aid to professional development and school planning. Another component solution is the improved capacity for teachers and mentors to meet and share views within a busy schedule.

By working with teacher networks and taking advantage of computer mediated communication and information sharing techniques, it should be possible to provide teachers with a suite of tools appropriate to the contemporary educational challenges more quickly and with a greater sense of professional ownership and control than would be possible using traditional approaches.

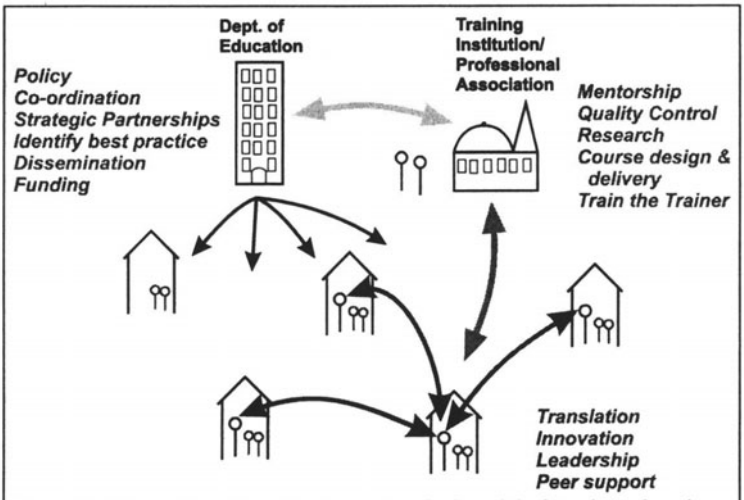

Figure 3 Roles and relationships in a networked model of teacher education

The networked model (Figure 3) includes the players involved in traditional professional development but identifies new roles and the widespread harnessing of school based innovation and expertise which are possible for the first time through the Internet. Using the World Wide Web and the Internet it is possible to draw together in

one virtual space resources including those created by course leaders, related information from other sources, and asynchronous (and possibly synchronous) discussions and activities. Furthermore, these resources are equally accessible from classrooms, offices, homes, professional meetings or any place where computer facilities are available.

Peer supported professional development can take place concurrently with collaborative networked classroom activities in which technology and student focused learning can operate as catalysts for teacher change.

Characteristics of networked professional development are as follows. They:

- harness distributed innovation and leadership.
- emulate best/leading practice in schools.
- can be formal or informal.
- reward teachers for innovation and leadership.
- emphasise practical rather than theoretical solutions.
- remove bottlenecks using open learning/flexible delivery.
- increase ownership and professionalism.
- use open learning techniques to complement face-to-face delivery.
- aggregate diverse support elements.
- link research to best practice.
- create new roles for teachers, teacher educators and education authorities.

A key factor in the development of networked professional development is the support of existing initiatives and human networks. Experience from a range of situations has shown that a functional electronic network does not result from a good idea. There must be an imperative which justifies the time commitment to involvement in that virtual group. Virtual communities work well, on the other hand, when participants have an agreed mission and need for working together. Digital technology is useful in so far as it increases the opportunities for working together or increases the productivity of the group.

3.3 The role of open learning

There is considerable scope for the use of open learning techniques in meeting systemic professional development needs. It may, for example, be cost effective for teachers to undertake specialist courses operated by remote institutions or involving on-line mentors.

In another application, structured materials can be made available via the Internet as well as forming the basis of a face-to-face professional development program. In this case "the course" is available to all on demand and participation in the face-to-face component becomes a social experience in which participants form a self supporting cohort. This model is used in Victoria in a program which helps teachers explore classroom applications of the Internet (*Learning with the Internet* materials accessible through SOFWeb URL: http://www.dse.vic.gov.au). The course is delivered face-to-face by trained teacher tutors in schools around the state. The materials are freely available via the World Wide Web and are updated in response to feedback from tutors and participants. Discussion groups associated with each module of the course provide for peer support and problem solving amongst participants and students.

4 NEW ROLES FOR TEACHERS AND TEACHER EDUCATORS

The model identifies important new roles for each of the established stakeholders:

- Students become learners and leaders in the global classroom.
- Outstanding classroom teachers become teacher-mentors and teacher-researchers.
- Teacher trainers and educational researchers provide quality control for innovative work in schools and stimulate discussion amongst the practitioners. Research is increasingly focused on the operational classroom.
- Professional associations become a resource organisation for all teachers rather than members only.
- Administrators and planners assist in the development of a shared vision, identify compatible policies, projects and initiatives and promote the development of collaborative links.

All of these elements are currently coming together under the 'Classrooms of the Future Program' operated by the Directorate of School Education in Victoria. National and state curriculum agendas are being interpreted and implemented by professional associations and district networks of teachers. The teachers are creating virtual resource centres and meeting places on the World Wide Web. The Directorate is providing limited funding and facilitating linkages between associations, other teacher networks and teacher education institutions.

The Directorate has established also a World Wide Web server known as SOFWeb (Schools of the Future Web URL: http://www.dse.vic.gov) which serves as a directory to exemplary resources and professional development for teachers. SOFWeb is being used to share the results of these efforts and also to support students and teachers in the pursuit of collaborative learning activities. In 1996, at least 500 of the state's 1,740 state funded but self managing schools will be involved in Global Classroom Projects involving the International Education and Resource Network (I*EARN) and a host of other government and non-government organisations in networked student and teacher activities. Every government school is expected to be connected to the Internet by a dial-up modem connection or better by the end of 1996.

Universities in Victoria are becoming increasingly involved with school based curriculum and professional development, either through government funded programs (for example, the National Professional Development Project). It is hoped that through providing mentorship for school based innovation new research interests and opportunities will arise.

4.1 Credit for school based innovation

A key element of the networked professional development model is the possibility for teachers to gain recognition and credit for school based innovation and leadership. This is necessary to validate the additional effort contributed by practising teachers to the professional lives of their colleagues. An important way to reward effort is by the award of University certification or course credits for work done under the specified guidelines. The guidelines may require completion of assignments or mentorship and reporting writing. The quality of work by teacher innovators is likely to be improved by the involvement of a university based mentor. Mentors may also require the

teachers to report and present the work being done, further disseminating the work and raising the professional standing of the teacher. A growing number of certification and mentorship schemes are available through universities in Victoria.

5 CONCLUSIONS

Traditional methods of professional development will not adequately meet the needs of teachers. "Top down" policy development and implementation may even confound and delay broadscale solutions by disenfranchising the people most needed to bring about change in schools, the dedicated teachers who are willing and able to act productively on their own initiative.

The network model does not replace traditional approaches to professional development. The same teacher training institutions will be involved and in most cases will continue to offer established pre- and in-service teacher education courses. It is hoped however, that the content of courses will be more readily updated as a result of close contact with school level innovation and that open and flexible learning techniques will be employed to minimise training bottlenecks.

There are other possible models available for increasing access to professional development, for example the use of self-paced multimedia materials, with and without in-built certification. The networked model uniquely maps onto and strengthens established professional and social structures and processes. This should be the ultimate goal of any professional development program.

6 BIOGRAPHY

Bruce Rigby manages a range of projects for the Victorian Department of Education aimed at improving learning opportunities and outcomes for students through the use of information technology and telecommunication. His experience as a teacher, scientist, technology consultant, curriculum developer and professional developer have enabled him to build links between the different players in the field of teacher education and professional support.