Chapter 1
Virtual Structures and Collaborative Processes to Enhance Teaching and Learning Across Dispersed Sites:
Some Implications for Rural Societies

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EXECUTIVE SUMMARY

This case outlines the development of a pre-internet education initiative in New Zealand that linked eight rural schools, each with declining enrollments, to collaborate through audio technology in sharing specialist high school teachers. The collaborative structure that was formed enabled senior high school students in the intranet to access courses not available on-site, thereby expanding their range of curriculum options. Replication of the New Zealand model in rural Atlantic Canada, enhanced by the Internet, enabled senior students in an intranet to access four Advanced Placement (AP) science subjects, each taught from a participating site. Within the New Zealand and Canadian intranets collaborative teaching and learning has developed. The creation of virtual educational structures that support and enhance traditional classes has expanded the capacity of participating rural schools and reduced the significance of their physical locations. The New Zealand and Canadian initiatives highlight the possibilities of inter-school collaboration to sustain education in small rural communities.

BACKGROUND

Over the last two decades the introduction of e-learning to small schools has enhanced their capacity to provide extended curriculum opportunities for senior students in rural communities in several parts of the developed world (Asher, 2005; Dell, 2005, Dorniden, 2005). E-learning has changed the nature of small schools by enhancing their teaching and learning capacities (Hawkes & Halverson, 2002)

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and, thereby, their futures, as viable educational institutions at a time when many are under threat of closure because of declining enrolments.

Schools that are small in terms of the number of students who attend, in person, on a daily basis, can, through the introduction of e-learning, become large educational institutions through the expanded range of teaching and learning opportunities they can provide. The enhancement of small schools in rural communities has implications for the sustainability of regional economies. If schools in rural communities are perceived to be as viable in terms of teaching, learning and the range of curriculum options they can make available as their counterparts in urban centres, it becomes increasingly possible to attract skilled workers and professional people to the local economy. The attraction and retention of skilled workers and professionals is important in countries like Canada, New Zealand and Australia where much of the national wealth is in natural resources, often located in remote areas.

Setting the Stage: Rural Education in New Zealand and Atlantic Canada

Rural New Zealand and rural Atlantic Canada have many small schools located in remote communities. In both countries a prominent social issue has been the sustainability of small, local schools that serve these places. Because of the importance of agriculture and forestry in New Zealand and fishing and mining in Atlantic Canada, small schools are central to both the national and regional economies. The development of virtual classes between them, accompanied by collaborative teaching and learning, was initiated in New Zealand and subsequently partially replicated in Atlantic Canada. It is beyond the scope of this chapter to undertake a comparative analysis of rural education in each country, but the following brief case studies outline recent changes in each place that have been shaped by the introduction of information technologies in small schools. In the New Zealand case study, small schools in rural communities in the Canterbury region formed a common, collaborative structure that led to the creation of enhanced learning experiences for students (Stevens & Moffatt, 1996). Publication of developments in rural New Zealand (New Zealand Ministry of Education, 2002; Renwick, 1993; Stevens, 1995b) led directly to the implementation of a collaborative structure in rural Atlantic Canada. The Canadian initiative therefore forms a second, directly-related, case study to the developments that preceded it in rural New Zealand.

The changes that took place in rural New Zealand schools preceded the introduction of the internet and were intended to challenge an environment in which traditional, autonomous schools competed with one another for students, in favour of a more collaborative approach between institutions. By the time the Canadian initiative commenced the Internet was being examined for its teaching and learning potential in schools. The linking of rural schools in pre-internet days in New Zealand provided a useful model to be considered in Canada.

Case Description: A New Zealand Model for Rural School Collaboration

Agriculture, horticulture, fishing and forestry have always been important aspects of the New Zealand economy and the provision of education in its many rural communities is, accordingly, an important economic as well as social consideration. During the latter half of the twentieth century New Zealand society became increasingly urbanized and increasing numbers of rural families migrated to cities to take advantage of educational and vocational opportunities. Student enrolment in many small schools declined and some were closed. The provision of quality education in small communities that were distant from major centres of population became increasingly difficult. Rural educators, parents and students were motivated to explore new ways of accessing educational