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Virtual Learning in New Zealand: Achieving Maturity

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Abstract: This proposal describes a study into the development of virtual learning in New Zealand, specifically the obstacles that e-learning clusters face or have faced in their journey to sustainability and maturity through the lens of the Learning Communities Online Handbook. Using a variety of data collection methods, the researchers identified three common barriers, including a lack of a coherent vision, difficulty in securing the necessary funding and resources, and a lack of collaboration and cooperation within and between clusters. Based on these findings, it is recommended that individual e-learning clusters develop specific strategies to encourage greater collaboration between clusters and work towards greater consistency between their activities, including professional and organizational development and also of the approaches to virtual learning.

Introduction

While the use of distance education at the primary and secondary levels began in New Zealand around 1922 with the introduction of the Correspondence School, the use of virtual learning and the e-learning clusters began with the creation of the Canterbury Area Schools' Association Technology (CASAtech) project in 1993 (Wenmoth, 1996). As the CASAtech project became the Canterbury Technology Schools Project in 1996, and the introduction of the OtagoNet e-learning cluster in 2002 with the vision "to create a broadband [network] linking the Otago Secondary and Area Schools, to strengthen existing relationships and collaboration of these rural and geographically dispersed schools." (Pullar & Brennan, 2008), the roots of the Virtual Learning Network (VLN) began. In 2003 the VLN was officially established between the Ministry of Education and the various clusters that had been independently developing throughout the country. The primary focus of the VLN was to provide a brokerage service for the sharing of courses and programs between clusters.

Through successive information communications and technology strategies implemented by various ministries, the physical infrastructure and human expertise was developed to allow the VLN to eventually grow to 18 geographic e-learning clusters providing virtual learning

(Dewstow & Wright, 2005; Powell & Barbour, 2011; Roberts, 2010; Wright, 2010). Parkes, Zaka and Davis (2011) even describe the development of a super cluster that has come together to explore the potential of blended learning in the Southern Central Divide ICTPD cluster.

In 2004, the initial version of a handbook to assist schools in forming virtual learning clusters was published. Entitled the *Learning Communities Online (LCO) Handbook*, this publication contained a matrix to guide development through the phases from initial conception to implementation. The *LCO Handbook*, which was extensively revised to add a dimension to address sustainability and maturity, was released in final version for use in early 2011. The purpose of this research was to study the development of primary and secondary online learning or virtual schooling in New Zealand, specifically how the *LCO Handbook* was used in that development. The activities were guided by a desire to understand the common barriers that e-learning clusters faced in their development towards maturity and sustainability, along with how mature and sustainable clusters overcome those barriers.

Methodology

The purpose of this research study was to capture, in a range of ways, information that would contribute to the knowledge base about the development of virtual learning in New Zealand, in particular, how the LCO Handbook was being used to assist and inform this development. Two research questions were identified:

1. What common barriers do e-learning clusters face in their development towards maturity and sustainability? And how have mature and sustainable clusters overcome those barriers?
2. What are some examples of how networked schools are emerging in the New Zealand context?

Given the exploratory nature, a single case study with multiple embedded units of analysis was selected as an appropriate methodology (Yin, 2003). In this model, the VLN was the case, with each of the current and emerging clusters a unit of analysis within that case.

The proposed data collection methods included site visits with a selection of clusters to perform semi-structured or unstructured interviews with current and former cluster and school personnel, and students. In addition to the interviews, there was observation of video conferencing classes and tutorials, along with students working during their scheduled asynchronous virtual learning time. Finally, documents, images and other physical artifacts from the individual schools and clusters were also to be collected.

Table 1. Data collected

Method of Data Collection	Data Collected
Interviews	10 former & current ePrincipals
	8 VLN cluster member school Principals and Deputy Principals
	12 eTeachers, eDeans & Facilitators
	18 Students
Observations	12 video conferencing lessons
	10 asynchronous work sessions
Documents	ePrincipal reports and other data collected by individual clusters

	VLN-C documentation
	Asynchronous course content
	School newsletters
	Digital images from site visits

Common Barriers

There were three common barriers that clusters faced during their development: lack of vision; funding, resources and the role of the ePrincipal; and lack of inter-cluster and intra-cluster co-operation. In many instances there was overlap between these three challenges.

Lack of Vision

The process of creating a vision for an e-learning initiative is critical and was clearly evident in this data. The importance of vision and leadership for school development has long been recognized (Timperley, Wilson, Barrar & Fung, 2007; Yee, 2000), but this has been slow to be recognized in relation to leadership across schools (Stevens & Davis, 2011). Those clusters that had the greatest level of support from their partner schools were those who were able to articulate a vision for the cluster that went beyond the provision of distance education courses and opportunities that the tools could provide. Those clusters whose vision focused on the ability to provide distance education across the participating schools, or were based solely on teachers being able to use the tools to connect their students or themselves with like-minded colleagues, were the same clusters that were struggling to exist or were failing to emerge.

The process of establishing a vision and being able to articulate that vision is not an easy task. There are currently two types of clusters that this process critical. The first were the emerging clusters, many of whom are located in urban areas where schools have large student populations, complicating the process because of a mistaken impression that they are able to offer all of the curricular opportunities demanded by their students and these schools compete against one another for potential students. The second type were those struggling clusters where the number of schools and their participation level had decreased significantly.

Conversely, many of the more sustainable (often older) clusters began the visioning process as a part of the specific funding program that they used for the creation of their cluster. In many instances, the e-learning cluster still retains much of that original vision (generally due to the fact that there has been very little change in leadership, and any change that has occurred has come from within the cluster). There were several e-learning clusters that had reached the stage where their existence was not in question (i.e., the cluster was sustainable).

Funding and Resources

Issues surrounding funding and resources were a common barrier. Like any e-learning initiative implemented across multiple schools, in some instances covering massive amounts of geography, adequate and stable funding and resources were vital to sustainability and maturity. In the case of the e-learning clusters the funding and resources often described as being required included funding for the role of the ePrincipal and other cluster leadership, teachers for the

distance education program, professional development for those involved in cluster activities, the asynchronous and synchronous tools, etc..

At present there were several clusters that are sustainable, largely due to the support and financial commitment of their schools, often due to the ability of the cluster leadership to articulate a shared vision beyond simply providing distance education. For most, the Ministry was generally relied upon for the provision and support of asynchronous and synchronous tools. In the e-learning clusters, schools provided one teacher to teach a single course within the distance education program to gain the ability to enroll students into any distance education course offered by that cluster. In most clusters, schools also had to contribute a percentage of a teaching unit or a specific amount of money to fund the leadership of the cluster. Participating schools were responsible for purchasing and maintaining the video conferencing equipment, along with any additional hardware, software and personnel to implement the distance education program at their school. Schools who understood and had bought into the cluster's vision were generally quite willing to accommodate these expenses.

Lack of Inter-Cluster and Intra-Cluster Consistency and Co-operation

At present, the VLN is a collection of largely regional groups that have been created under various funding projects, with the specific focus of the funding program still influencing the vision and activities of that cluster. While there is some consistency in terms of activities, there is little consistency of vision between each of the clusters; which has hindered any national development of virtual learning practice of policy in New Zealand. This is not to suggest that the regionalized system should be scrapped in favor of a national system, as there are legitimate local concerns that a national system would be unable to accommodate. Yet, there is much room for a greater level of consistency and cooperation.

For example, at present there are six clusters that offer level three art history, five that offer level three calculus, and four that offer level two physics, level three physics, and level three Spanish. In fact, 30 of the 61 unique level one through three courses that have enrollments listed in the VLN brokerage website have more than one cluster or provider offering the course. According to the eTeachers interviewed there is little, if any collaboration between any of these teachers. Further, there has been a tremendous duplication of resources in the creation of multiple versions of course content for the same online course. Similarly, there is a lack of collaboration between eTeachers across the same subject area. For example, there is little – if any interaction between the five level three calculus eTeachers, the level three mathematics eTeacher, the four level three statistics and modeling eTeachers, the two level two mathematics eTeachers, or the level one mathematics eTeachers. If one of the advantages of virtual learning is being able to connect professionals from disparate geographic locations, then the e-learning clusters have failed to leverage this.

Common Barriers

The second research question focused on identifying examples of the emergence of networked schools throughout New Zealand. The concept of networked schools is described in

some detail in the recent report, *e-Learnings: Implementing a national strategy project for ICT in education, 1998-2010* (see Figure 3).

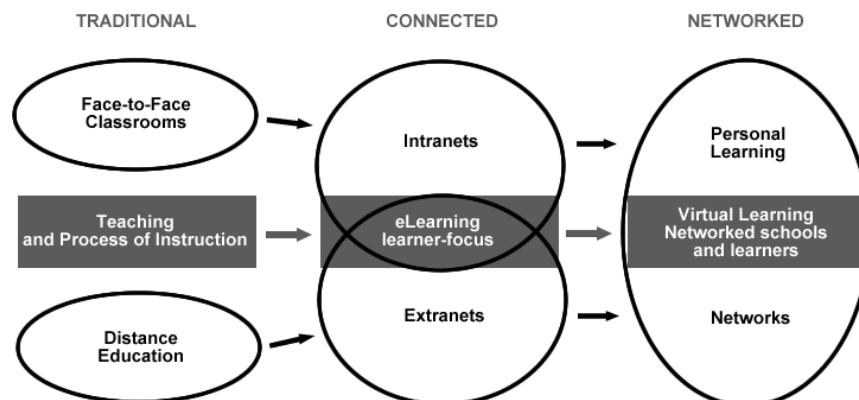


Figure 3. A vision of networked schools (Wenmoth, 2010)

In the traditional school model, the face-to-face school existed independent of the distance education opportunities. Historically, if you recall the initial development of Te Kura/The Correspondence School, where students were either enrolled in a physical or brick-and-mortar school or enrolled in Te Kura. Over the decades since the creation of Te Kura, this model has evolved to the point where today there is an overlap between the brick-and-mortar school and the distance learning opportunities. In this connected school model, students attend a brick-and-mortar school, but may take one or more courses through Te Kura or one of the VLN e-learning clusters. Networked schools, however, are where the integration of face-to-face learning and distance learning has become seamless. Essentially, an observer looking at a networked classroom would not be able to tell if the students were learning from a face-to-face teacher or from an online one. There were four main examples or emerging examples of networked schools from the data that was collected: changing teacher practice, opening classrooms, the role of the school-based facilitator, and re-considering student learning space.

Changing Teacher Practice

During the interviews with the eTeachers, along with all of the ePrincipals who had or were teaching virtual learning courses, it was apparent that teaching in a virtual learning environment was a catalyst for changing the teachers' traditional classroom practice. In a traditional school, the primary role of the teacher is was as a generalist that was responsible for designing their own curricular materials for a variety of subject matter courses and delivering the content to a specific group of students. The connected school saw the emergence of subject matter experts who still had to design their own curricular materials, but the delivery of the content varied from direct instruction to facilitation. Within a networked school, the role of the teacher is as an experienced learner – an individual, who is able to mentor and provide guidance to students as they make their own way through content, using resources of their choosing.

When a teacher has created or located online resources and activities for their virtual learning students to complete, a natural extension of their professional practice is to provide that same content for their face-to-face students. This was the most basic example of how teaching in a virtual learning environment had influenced a teacher's classroom practice. The teacher would

use the learning management system to provide their face-to-face students with access to the online materials that had designed or located. The next natural step was for those eTeachers to begin to use other aspects of the learning management system with their face-to-face students. Another common example of how teaching in a virtual learning environment influenced a teacher's classroom pedagogy was how they delivered or facilitated their classroom instruction. The synchronous video conferencing time forced eTeachers to condense their direct instruction to only the most basic and fundamental concepts, along with providing time for remediation of material that had been previously covered. Within their face-to-face teaching, many of the eTeachers expressed dissatisfaction with their traditional pedagogy that generally devoted more time to direct instruction.

Opening Classrooms

The nature of the distance education classroom is that it allows students from a variety of geographic locations to learn from a single teacher. The prevailing conception of virtual learning within New Zealand follows this distance education paradigm, where some or all of the students are physically distant from the teacher. This was not the only model of virtual learning occurring in New Zealand. There was one school in the WeLCom cluster where an eTeacher's classroom practice had been influenced by his experience with teaching in a virtual environment. However, this particular eTeacher did not limit that influence simply to his classroom pedagogy, but also the organisation of his classroom.

This particular eTeacher taught social sciences and, like many of the teachers described in the previous section, he had begun to use the asynchronous course content he had created for his online courses with his face-to-face students and had also begun to teach in a manner consistent with his online teaching (i.e., where he would provide limited direct instruction and used class time to facilitate his students' movement through the activities in the asynchronous course content). One of his social science courses had an enrollment of 15 students, but only eight of the students were physically present in the room when he was scheduled to teach the course. The other seven were scheduled for this course at times that fit into their timetable, but while this teacher was scheduled to teach other courses.

The Role of the Mentor Teacher

The introduction of virtual learning to the primary and secondary environment has resulted in changes to the traditional role of the teacher. Davis and her colleagues (Davis, 2007; Davis & Niederhauser, 2007) identified three teacher roles that existed within that virtual learning environment as compared to the traditional face-to-face, brick-and-mortar school setting: virtual school designer, virtual school teacher, and virtual school facilitator. To date, the role of designer – separate from the eTeacher – has yet to emerge within the virtual learning provided by New Zealand's e-learning clusters, however, the two other roles do exist within the system. Within the current New Zealand system, the role of the facilitator (i.e., eDean, Site Facilitator, Local Coordinator) is often regulated to administrative duties (e.g., taking attendance, supervising assessments, entering grades, contacting the eTeacher, pastoral care responsibilities, monitoring students' progress, interacting with the students' eTeacher, etc.). However, there were some instances where – in addition to those administrative tasks – this individual took on other responsibilities that changed the nature of the classroom environment for their students.

In several schools in a number of different e-learning clusters, the school-based facilitator was responsible for more than simply the supervision and pastoral care of the students. There were examples where a school-based facilitator would be available to the students during their asynchronous work time (i.e., when they weren't attending a synchronous video conferencing session). In these instances, the facilitator was available to meet with students individually to discuss their work and their progress, along with being able to assist students with many of the content-based questions they had. The longer an individual spent as the facilitator in this kind of situation, and the more consistent there was in the course offerings the school received through distance education, the facilitator was often able to build up a substantial level of expertise in the course content the students were responsible for completing. The increased expertise of the facilitator provided the students with access to two teachers that were subject matter experts – their distant eTeacher and their school-based facilitator.

Re-Considering Student Learning Space

As education and formal K-12 schooling is something that everyone experiences, society has a specific perception or understanding of what a classroom learning space should and, in most instances, does look like. For those involved in distance education, when asked to describe the space provided for distance education the vast majority begin to describe the space allocated for the synchronous video conferencing classes. However, when asked where students went to learn when they were not scheduled to be in the videoconference room there was little consistency in the responses. In some instances, students would go to a library, resource centre, computer lab, or even an unsupervised, empty classroom. In other instances, the students would complete their asynchronous work in the back of another teachers' classroom while they were teaching a different group of students. There were some examples where schools had set aside a specific space – a distance education room of sorts – for students to use during their asynchronous time. These rooms were often a space provided to the students that they could take ownership of, but were not specifically created as an asynchronous learning space.

There were no examples of an asynchronous learning space that was specifically designed for that purpose. The spaces that were provided, even those that had forethought to the asynchronous learning purpose, were converted classroom or office space. For example, many of the schools with this asynchronous work space had desks for students to work individually, but those desks did not have barriers to isolate the student from another group of students who may be working collaboratively at one of the tables. Simply put, here were no examples of a space that had been built within a school to accommodate unstructured, asynchronous instruction by students working individually or in groups, often with both happening at the same time.

Conclusions and Implications

E-learning is a powerful instructional strategy because it transcends the boundaries of traditional classroom instruction. In fact, it creates virtual schools that allow learning to occur at the student's initiative – any time, any place. E-learning also holds promise for promoting equity by providing students with access to courses that otherwise might not be available, such as accelerated courses in remote rural areas. (Blomeyer, 2002, p. 1)

E-learning offers opportunities that were unknown to educators two decades ago. “E-learning has the capacity to grow, and the early results demonstrate the benefits of students and parents being given the choice of a variety of learning options, from fully online courses at a distance, to classroom-based courses, with blended learning options in between” (Watson, Gemin & Ryan, 2008, p. 10). In 2006, the International Association for K-12 Online Learning (iNACOL) reported that while the use of distance education and online learning at the K-12 level occurs in many jurisdictions around the world, the organization of these programs into single entities or schools is largely a North American phenomenon (Powell & Patrick, 2006). Simply put, there is little known about the practice of K-12 online learning outside of North America.

This claim to a lack of knowledge about K-12 online learning in countries like New Zealand was supported by Barbour (2011), who examined 262 articles from distance education journals for Australia, Canada, New Zealand, and the United States, found only 24 articles related to K-12 distance education and online one article that focused on K-12 distance education in New Zealand. Similarly, an examination of the last 14 years of *Computers in New Zealand Schools: Learning, Teaching, Technology* – the main technology-focused practitioner publication in New Zealand reveals on 15 out of 129 articles focused on virtual learning. Clearly there is a need for more research into a method of educational delivery that first began almost two decades ago. This study is one small step to addressing this gap.

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