

Volume 25 | Number 1 | 2013

Pacific-Asian Education

A JOURNAL ABOUT EDUCATION IN PACIFIC CIRCLE COUNTRIES



Pacific-Asian Education

The Journal of the Pacific Circle Consortium for Education
Volume 25, Number 1, 2013

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ISSN 1019-8725

Pacific Circle Consortium for Education

Publication design and layout: Halcyon Design Ltd, www.halcyondesign.co.nz

Published by

Pacific Circle Consortium for Education

<http://pacificcircleconsortium.org/PAEJournal.html>

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Editorial

Education and change in Pacific Circle nations

Airini

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Education is critical to shaping the futures of Pacific Circle nations, and has the potential to do more. This issue of *Pacific-Asian Education* offers research and ideas about schooling, leadership, teaching and learning playing major and purposeful roles. The interplay between structural and conceptual changes in education features large in this issue's articles.

Structural change refers to a long-term shift in the fundamental structure of schooling and teaching, which is often linked to social and economic development. These changes can be initiated by policy decisions or permanent changes in resources, population or society. Examples might include changes to national achievement expectations, the introduction of new secondary level qualifications, and decentralized school funding.

Conceptual changes may also affect understandings of the purpose and potential for education in Pacific Circle nations. Some conceptualisations of education may be practical, while others may be personal or sociological (Kane, 2005). In the absence of a shared understanding of what is and should be possible through education, the contemporary model can become largely concerned with education structured for teaching practices and immediacy. Snook (2007) describes this as a model of education where teaching is “a practical craft”, one that is focused on activity within schools and meeting children's needs (p.145). Organisationally, under this model the focus is on schools capturing and retaining funding, maintaining reputation, and acting “mainly like [a] small business competing for students” (Jesson, 2007, p. 55). Education thereby becomes ‘light’ on political, economic, and philosophical concerns about education, the need to ensure our education system supports all students to succeed, and national economic and social futures. This approach has serviced nations poorly in the face of demographic changes and underserved populations in education.

A critical approach to structural and conceptual change in education suggests the need for the development of “a learned [teaching] profession” readied for agency through contextual knowledge (Snook, 2007, p. 145). In addition to advancing teachers' rigorous, deep disciplinary and content knowledge, teacher education is to develop critical understanding of the social, cultural, political, economic and historical contexts in which teachers and institutions operate. To do so requires an intentional shift in education, away from a dominant focus on questions of what and how to teach and learn, to greater attention to questions of why (Nieto, 2003; Snook, 2007). This suggests

a real need for study in education disciplines that specialize in context – sociology of education, educational philosophy, history of education, comparative education, economics of education. Teaching, learning, and schools are thereby understood as forms of agency within education and sites of social transformation.

In the face of unequal achievement in public schools Poor's contribution to this issue of *Pacific Asian Education* asks whether charter schools are indeed the agent for transforming education outcomes. While previous studies have considered the achievement patterns in charter schools Poor's article examines the very purposes of education. Of importance to New Zealand, Poor argues, is the place of progressive education, which is about beliefs in fairness, inclusion, and equity established in educational organisations. Through an international comparative study, Poor argues that the high performance of the Finnish education system confirms the importance of New Zealand's own progressive tradition as the foundation for transforming education inequalities in the twenty-first century. Poor makes the case for New Zealand as a world leader in education.

Snedden's article exemplifies at least two key features of education as a site of social transformation. First her study of three women principals reveals how the personal is also, potentially, the political (Hanisch, 1969). It is through understanding one's self and one's relationship to others and power (over time, in place, through culture) that values and em-powerment occur. Snedden argues that change, including individual and collective transformation, is about context and action; and does not occur in a vacuum. Second Snedden's research method further emphasizes the collective dimensions of critical inquiry in education. She describes the *métissage* (merging) of interconnected interpretive practices in critical inquiry. *The Leadership Styles and Practices of Women Secondary School Principals* explores the symbiotic elements of agency within education, as found through the experiences and critical reflections of school principals.

Watson's article is an exploration of concepts underpinning a model for teacher education which promotes a view that enquiry and change are an integral part of school culture. His article advocates for the contribution of action-learning as the basis for teacher education and where teaching is thereby situated in and contextualised by schools, and where theory is accessed when needed. Watson's research focuses in this paper is to distil the influences and ideas in the minds of those responsible for developing the project, and to describe the conceptual model of research and school-based teacher education, as it existed prior to implementation. In so doing, Watson reminds us that understandings of the purpose of potential of education (in this case as expressed through teacher education) remain necessarily and critically dynamic.

In the article *Teacher-Student Collaboration on Designing Instructional Multimedia Materials* Ling Wang & Ya-Chen Kao explore the transformation potential that occurs through the creation of instructional multimedia materials. From this study within Taiwan university education there emerges the importance of collaboration and professional, 'good' relationships between teachers and students. Others within the pacific have also written of the relevance of relationships for education, including in the development of research-informed education policy (Airini, Anae, Mila-Schaaf, 2010). The article highlights the ways in which the future of education make soften

structural lines between disciplines, and reconfigure how we conceptualise the teacher-student relationship.

How we go about organizing for, conceptualising and enacting education is of importance to shaping social and economic futures in Pacific Circle nations. Structurally and conceptually we have reached a point where changes are needed if education is contribute more in transformative ways. The articles in this issue of *Pacific Asian Education* offer insights through their research and critical analysis of ways in which education remains dynamic, personal, and socially relevant. As researchers and readers ourselves we are being asked, “What will you and we do now to advance a major and purposeful role for schooling, leadership, teaching and learning in Pacific Circle nations?”

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Charter Schools or Progressive Education? Lessons from Finland

Christopher J. Poor

Abstract

New Zealand's current government has embarked on a course of supporting private providers of education in the form of "partnership" schools, claiming charter schools can address the recalcitrant problem of disparity of achievement between students from different ethnic and socio-economic backgrounds. This chapter examines evidence from the research on charter schools. It argues attention should rather be paid to the Finnish example of high and equal educational achievement, and to the landmark achievements of New Zealand's own pioneers of progressive education, as we prepare a new generation for the twenty-first century.

Finland is one of the few countries consistently outperforming New Zealand since introducing a number of measures aimed at increasing equality of achievement and universal excellence (Ministry of Education 2008; Telford 2010). The reforms introduced in Finland between the 1960s and 1990s bear a remarkable resemblance to those of the progressive education movement in New Zealand during the 1930s and 1940s, which gained the New Zealand education system worldwide acclaim.

However, a number of recent government policies have been criticised as undermining New Zealand's unique success in education. These include league tables rating schools against each other and funding cuts in an atmosphere that Carol Mutch refers to as "high accountability, low trust, economically driven, top-down change" (Mutch 2012). Higher education has also suffered from reduced funding in what is described as a "punitive performance management environment" with a concomitant fall in New Zealand universities' world rankings (Theunissen 2013; Grey 2013).

The National Party minority government has also passed legislation to fund private sector entrepreneurs in the form of "partnership" or charter schools (Trevett 2012b; Davison 2013). This use of educational funds was advised against by Treasury and the Ministry of Education, and was also opposed by a majority of New Zealanders polled in a New Zealand Herald DigiPoll. The Post Primary Teachers' Association (PPTA) demanded that "the \$19 million set aside for charter schools be returned to the state school sector to fund programmes that raise achievement for at-risk students" and stated they "will continue to fight for the abolition of the charter school legislation" (Otago Daily Times 2013; PPTA 2013). The main parties in opposition, Labour and the Greens, also committed to repeal of the legislation (Shearer 2013; Green Party 2013).

Following rallies and marches by thousands of teachers and parents, against the government's proposals, New Zealand Educational Institute president Judith Nowotarski said;

We need the Government to understand that New Zealanders don't want to follow failed policies from overseas – policies such as charter schools, competition versus collaboration between schools and teachers, league tables, National Standards and winner and loser schools (NZEI 2013).

Assessment of New Zealand Education

Although New Zealand spends considerably less per student than the great majority of OECD nations, most New Zealand school students have regularly ranked very highly by international standards. In the 2012 survey of the 34 OECD countries, New Zealand ranked fourth in reading and scientific literacy, and seventh in mathematical literacy (NZ Teachers Council 2012).

The 2011 OECD report on evaluation and assessment in New Zealand schools praised the local approach that rejected the ranking of schools by test results. The OECD review team was most impressed by the high degree of trust in New Zealand placed on the capability of the schools, teachers, and students, to engage in self-evaluation and improvement. The review team commended the New Zealand approach of attention to international developments, while not blindly following the global trend towards high-stakes accountability. They recognised how “especially in primary education, there is a general consensus against national testing and the use of test results for school rankings” (Laveault et al. 2012; Nusche 2012).

Problems of Unequal Achievement

Considering the long-standing recognition of New Zealand's education system as world-class, and above the OECD average (Statistics New Zealand 2005), New Zealanders may be perplexed by the government's determination to initiate such wide-ranging changes. According to the Minister of Education the government is driven by concern that, while average figures for New Zealand's educational achievement are very good, the disparity between rich and poor and between Māori, Pasifika and others is wide.

New Zealand is said to have the second highest rate of educational inequality in the OECD, with Māori, Pacific, and students from low-income backgrounds showing the highest rates of educational underachievement. Statistics show that one in five New Zealand students leave secondary school with no qualifications; for Pacific students, it is one in four, and for Māori, one in three (Barback 2012).

This now worsening situation has long concerned New Zealand educationalists and policy makers (Francis 2013; Snook and O'Neill 2010). But are charter schools the answer to the problems of unequal achievement ascribed to public schools?

This claim has been made by the New Zealand Business Roundtable and its associated Education Forum, New Zealand Initiative, by organizations such as the Koch brothers' Cato Institute, and the Heartland Institute in the United States (Barkan 2011; Ravitch 2010; Lipman 2013; Harrison 2004; 2005; LaRocque 2004; Mallard 2005; Kerr 2006).

In addition, Julian Robertson, US Hedge Fund billionaire and New Zealand resident, has funded scholarships at the University of Auckland and financed the Aotearoa Foundation as the New Zealand arm of his Robertson Foundation to promote charter schools in New Zealand (Quality Public Education Coalition 2012; The University of Auckland 2013; Education Aotearoa 2013). Their claim is that competition from private schools will improve education for disadvantaged students.

Research on Charter Schools

However, although conservative groups loudly proclaim the failure of public schools (Molland 2013; Sirota 2013), evidence from rigorous research points to students achieving less in charter schools than could be expected in public schools (Bulkley 2011; Carnoy et al. 2005).

In one example, researchers from the University of Connecticut and Duke University designed a study which followed three cohorts of North Carolina students (approximately 100,000 pupils) from third grade to eighth grade (equivalent to New Zealand years 4 and 9) and observed 8,745 charter school students in that state. They reported “the negative effects of attending a charter school are large” (Bifulco and Ladd 2006).

Charter schools increase inequality of achievement

Sweden’s experiment with charter schools has seen a decline in Sweden’s scores on international tests such as PISA (Bohlmarm and Lindahl 2012) while research by the Centre for Learning and Life Chances in Knowledge Economies and Societies in the UK warned that

[The introduction of charter schools in Sweden] increased inequality of achievement as well as social segregation in Sweden - a country with a universal welfare state and a relatively high level of social equality - then other countries could risk an even greater increase in inequality ... (Wiborg 2010).

Evidence of Charter schools’ contribution to increased segregation in terms of ethnicity, class, and academic achievement, has also come from research in Chile and the Netherlands (Ladd, Fiske, and Ruijs 2010; Elacqua 2012). Such increases in inequality, notably very high in recent years in New Zealand, have contributed to a lowering of health and well-being indicators as well as economic stagnation in countries such as the USA and Canada (Wilkinson and Pickett 2009; Herman 2013).

The progressive educational reform movement in New Zealand

Where policy makers use resources to improve education, especially in the early years, and increase equality of opportunity, as they have done in Finland, teachers and others are given confidence to be more creative and innovative (Rashbrooke 2013). The concept of human development founded on the belief that “economic prosperity must rest upon and promote human welfare” guided those who introduced progressive

education to New Zealand in the 1930s and 1940s (Smith and Warden 2010; Benadé 2011; Dalziel et al. 2009).

Debates over the philosophies of Rousseau, Pestalozzi, Froebel, and Montessori, had raged in educational circles from the turn of the century. New Zealanders developed an independent attitude toward traditional English and German conceptions of education and schooling, establishing a system of universal education focused on the interests and needs of the developing child. This approach meant rethinking received models of schooling and orienting the system toward educational equality and the concept of the development of “the personality of each child.” These ideas were adopted within the New Zealand Labour Party, gaining impetus from the 1937 conference of the New Zealand Education Fellowship (NEF) (Mutch 2001; Sewell and Bethell 2009; Abbiss 1998).

Peter Fraser, as prime minister of New Zealand’s first Labour government, and C.E. Beeby as director of education implemented a vision of education that included broad equality of schooling and equality of opportunity to all throughout the nation. Beeby’s internationally known *The Quality of Education in Developing Countries* gave his fellow educationalists arguments to advocate for “higher levels of national commitment to the professional education of primary teachers and supporting services” (Renwick 1998). The Labour government’s policies resonated with the Scottish tradition in education with its emphasis on universalism, inclusion, equality, and social justice, which had considerable influence in New Zealand where the first university, established in the predominantly Scottish southern city of Dunedin, embodied the belief in the “vital importance of education for all” (Dobbins 2009; Phillips and Hearn 2008; Riddell 2009).

Innovative curriculum development

C.E. Beeby and A.E. Campbell, director of the New Zealand Council for Educational Research encouraged pedagogical initiative within an overall curriculum framework. Frank Milner concluded from a curriculum survey he conducted in 1936, that the curriculum should embrace a “liberal synthesis [of the] humanistic and the practical.”

New Zealand’s first Education professor, James Shelley, lecturers Dorothy Baster and Olive Grenfell, and teachers such as Gwen Somerset, Doreen Dolton, Elizabeth Stewart Hamilton, Sylvia Ashton-Warner, and those of the Wellington Free Kindergarten Association including principal Enid Wilson, participated in incorporating the ideals of progressivism into the world-leading New Zealand education system prevailing from the 1940s to 1980s. They were joined by nearly “six thousand teachers registered for lectures or seminars and approximately twenty thousand people [who] took part in [the 1937 NEF] conference related activities” (Middleton 2006; Sewell and Bethell 2009; Abbiss 1998; May 2013; Dowden 2007).

New Zealand was fertile ground for the ideas of the NEF which promoted American pragmatist philosopher John Dewey’s child-centred educational philosophy (Couch 2012). Many teachers had already enthusiastically integrated progressive educational principles into their teaching. An egalitarian and collegial ethos mediated the adoption of these ideas by teachers, officials, and governments for half a century, following the

election of the first Labour Government in 1935 and the NEF conference (Abbiss 1998; Couch 2012; Gordon 1999).

In *Democracy and Education*, Dewey argued how education needs to encourage our natural motivation to learn and gain mastery over our subject matter, rather than concentrate on training for specific vocational tasks that may disappear with the rapidly changing industrial landscape. However, Dewey's arguments also had a political edge, which no doubt added to their appeal in a post depression world faced with insurgent Nazism. He maintained that

It is the aim of progressive education to take part in correcting unfair privilege and unfair deprivation, not to perpetuate them. Wherever social control means subordination of individual activities to class authority, there is danger that industrial education will be dominated by acceptance of the status quo (Dewey 1916 Chapter 9).

Modifying practice to the needs of students

Progressive educationalists in New Zealand also placed a similar emphasis on socio-economic and civic inclusion, multiculturalism, and the development of the “whole child,” as do their counterparts in Finland today (Openshaw in Rata and Openshaw 2006; Jacobs and Rea 2007; Weldon 2006; Barclay 2005; Abbiss 1998; Baumer, Ferholt, and Lecusay 2005). These approaches are of particular benefit to students who are struggling, as they allow teachers to modify their practice in order to suit the needs of students. A prescriptive stage-focussed curricular programme, with testing to pre-determined National Standards, can only hamper the tailoring of teaching to particular needs (Ministry of Education 2011; Vaughn and Schumm 1994; Morgan 2009; Gallagher, Hipkins, and Zohar 2012).

Primacy of educational aims

The New Zealand adoption of progressive education ideas took place through practical experimentation and on-the-ground evaluation of what worked in New Zealand. Similarly, the Finns have studied initiatives and systems around the world, but have incorporated only those concepts which could be adapted to achieve their aims within the Finnish setting (Sahlberg and Hargreaves 2011).

By recognizing that education could not assist in achieving their political and economic goals, unless they respected the primacy of educational aims, the Finns were able to achieve their “miracle” turnaround in both education and economy; from mediocre to stellar (Sahlberg 2010). With this fundamental understanding, a long-term commitment to the equitable distribution of resources and authority, and to the education of specialist teachers to assist students at risk of under-achieving, was underwritten by successive governments (Hogan 1988).

New Zealand policy makers, as Massey University's Professor Snook explains *should look to Finland, where teaching is the most favoured profession ... Teachers are well educated: a minimum of a five-year masters degree, in which they acquire in-depth knowledge of their teaching fields and social and global awareness ... teachers are autonomous (no lesson plans, principal supervision or ERO-type inspections). No school results are published and schools are not ranked. All schools are well funded. Not surprisingly, Finland regularly heads OECD studies in educational achievement in all subjects and the gap between the highest and the lowest performing schools is the smallest in the world (Snook 2009).*

Finnish Lessons

Finland's reforms included decentralization of support resources, increasing support for lower achieving students, raising the level of teacher education, and giving more autonomy to teachers in terms of curriculum interpretation and assessment. This "Finnish miracle" took as long to establish as New Zealand's comparable education system, but thirty years later.

Apart from high levels of literacy, Finland, in the 1970s, had mediocre educational statistics. Today, Finland has very low variation in student achievement between schools, exceptional results in terms of participation in education at all levels, and high levels of learning in mathematics, reading literacy, natural sciences, and problem-solving (Sahlberg 2007, 158ff.). The near equality of achievement across schools is even more encouraging considering the recent relatively high rates of migration to Finland from a wide variety of countries (Dervin et al. 2012; Sahlberg 2007; Talib et al. 2009). Unfortunately, the Finnish educational system does not appear to have been considered as an exemplar by New Zealand policy makers (Hancock 2011; Moore 2013; Partanen 2011).

Pasi Sahlberg sees an alignment between the improvement of the Finnish education system, and the push toward a 'knowledge society' in Finland's economy. However, he makes it clear that education must proceed according to its own norms, and cannot successfully borrow concepts from business management. While the general need to encourage innovative practices, and to prepare for a largely unpredictable future, are recognized by leaders and professionals throughout the country, the increasingly high regard for education means that government support at all levels, from providing learning materials to maintaining buildings, allows teachers, principals, parents, and students, to concentrate on learning, preparing for, and participating in the knowledge society (Sahlberg and Hargreaves 2011).

Finland has, along with top educational nations Korea and Singapore, focused on ensuring that all schools have sufficient funding to provide equal opportunity for students. Teacher preparation to a high standard in disciplinary and pedagogical university courses, as well as teaching internships, are complemented by an on-going professional learning program, elimination of tracking, and an emphasis on inculcating higher order skills in the classroom (Darling-Hammond 2010; Grubb 2007).

Decentralisation and more regulation

In the 1980's New Zealand's Lange government followed the managerial market model of supermarket magnate Brian Picot's "Task Force" in doing away with regional support centres and placing administrative burdens on local school boards while centralising control over curriculum (Sullivan 1992). Finland moved in the opposite direction to decentralise decision making on matters of curriculum, effectively introducing the system that New Zealand had carefully built since the 1940s to encourage innovation and experimentation by experienced and committed professionals.

New Zealand policy makers have recently moved even further away from the successful model pioneered by New Zealand's progressive educationalists, so that in today's schools the professionals are micro-managed with the National Education Guidelines (NEGs) and National Administration Guidelines (NAGs), including performance management systems (PMS) (NAG 2 & 3), The New Zealand Qualifications Authority (NZQA) which publishes the academic performance for each school in National Certificate of Educational Achievement (NCEA) results, and the Education Review Office (ERO) does the auditing (Malik, Davey, and Kelly 2011).

In the teaching of mathematics, for example, Barton, Clark, and Sheryn, argue this organisational load and assessment regime, combined with an overloaded curriculum, squeezes "the time and energy available to teachers for focussing on wider mathematical developments" (Barton, Clark, and Sheryn 2010). This system of surveillance and supervision treats teachers "not as professionals, but as skilled technicians" largely excluding them from curriculum development (Snook 2005).

Nonetheless, although New Zealand education has been subject to many of the forces that Finnish education has managed to avoid, the resilience of the education system in New Zealand is remarkable. This resilience owes much to the strongly held belief in fairness, inclusion, and equity, which are established in many educational institutions, organisations, and throughout the wider society (Dobbins 2009; Fischer 2012). Arguably these values are, to a considerable degree, attributable to our progressive heritage in education.

Alongside the strictures of the older citizenship ethic - obedience, loyalty and duty - were set the new imperatives of the liberal-progressive one - human brotherhood, international understanding, respect for other cultures (Archer and Openshaw, 1992 quoted in Mutch 2002).

Conclusions

During the 20th century, the democratic ideal of "equality of opportunity" was considered a primary purpose of public education (Hochschild and Scovronick 2004; Peters 2001; Strauss 1992). Another has been the education of citizens so that they may assume the responsibility of self-governance (Dewey 1903; Goodlad, Mantle-Bromley, and Goodlad 2004).

Education can only serve such democratic purposes if it is authentic, coherent, and integral, with the inherent nature of learning "to inquire and create," and considers the full development of the intrinsic capacities of individuals as participants in society (Fukuda-Parr 2003; Hogan 1988; Vanderstraeten and Biesta 2006; Humboldt quoted

in Chomsky 1971; Veatch 1974). However a market-led agenda imposing competitive and obtrusive testing regimes on students, and between schools, is inimical to learning, and may ultimately destroy the value of education for the purposes desired (Niemiec and Ryan 2009; Fiske and Ladd 2000).

Following the Picot Report in the 1980s, a course has been followed from user pays and least cost provision toward privatisation in education, along with the shifting of responsibility for provision from the state to the consumer (Gordon 1999; Dobbins 2009; Lauder and Wylie 1990; Schwartz 1994).

NZ has requested other countries to open up their entire education sectors to foreign competition, while allowing foreign private education providers to operate in NZ without restrictions (Dobbins 2009).

This paper has argued that, learning from the Finnish example, New Zealand policy makers need to avoid the errors of corporate-led interventions, and build on their progressive tradition in education to provide the basis for a transformation of educational policy and pedagogical practice. This will allow educationalists to seriously begin to tackle the problem of entrenched inequality, and to meet the needs of the twenty-first century.

Resisting pressures of marketisation

In Finland teachers and principals have played a major role in holding back the tide of neoliberal educational restructuring (Sahlberg and Hargreaves 2011). In the recent past, New Zealand teacher unions have helped to roll back some of the more ideological changes such as; bulk-funding; and the abolition of school zoning (Wellington Wairarapa School Trustees Association 2013; Dobbins 2009). Teachers have also helped to highlight the dangers inherent in the current changes. The fast-tracking of teachers with little pedagogical training, as promoted by Teach First New Zealand, will likely reinforce the disparity of achievement between Māori, Pasifika, poor students, and others, as has been the case in the USA (Patterson 2013; Thompson 2013; Darling-Hammond 2010). Finland's experience indicates that raising the professional qualifications of teachers across the board improves outcomes for all students (Darling-Hammond 2010 pp.43f). According to Pasi Sahlberg;

Things like Teach First or Teach for America are very common in many parts of the world, but you do not find them in high-performing education systems (Shuttleworth 2012).

Charter schools diminish parental choice

The neoliberal turn has moved to redefine the right to education in terms of a contract between consumers and providers (Olssen 2002; Struyven and Steurs 2005). It is claimed the responsibility of the individual consumer must be to "choose" and pay for their education "product," since "Government choice raises the questions of academic freedom from government interference ..." (New Zealand Treasury quoted in Kelsey 1996).

Ironically, the extent of government prescription of governance structures and ‘outcomes’ for New Zealand schools and universities, has increased greatly since Treasury issued its stern warning (Olssen 2002; Mutch 2006; Ball and Youdell 2008). Meanwhile, as charter schools proliferate worldwide, the choices are often made by schools’ cream-skimming, rather than students or parents making decisions as to their preferred option, leading to a diminution of parental efficacy, rather than “parental choice” (Ladd 2003; Ravitch 2010; Whitty and Power 2000).

Education for the twenty-first century

The twenty-first century will require innovative, lateral thinking, risk taking, and solidarity, - qualities evident in New Zealanders with their can-do attitude, egalitarianism, and belief that you can make a difference (Kennedy 2000; Museum of Transport and Technology 2011; Cumming and Taylor 2006). The imposition of market ‘discipline’ to increase ‘outputs’ in search of national competitive advantage, can have the unintended consequence of undermining those very qualities (Lolich 2011; Peck, Theodore, and Brenner 2009; Singh 2013). Focusing on placing students’ individual learning foremost requires smaller classes and innovative pedagogy. This approach depends upon providing resources and freedom to take risks, while allowing intrinsic motivation to predominate over the pressure for short term returns (Glor 1998; Mulgan and Albury 2003; Hinchcliff 1997).

New Zealand’s premier education system was built on the initiative, far sightedness and dedication of teachers, politicians, policy experts, and parents. However the tendency of colonial officials to look to bigger and supposedly better nations for guidance has often led to neglect of brilliant and path breaking local innovations (Marder 2012; Dickson 2009; Ogilvie 1974). Rather than importing ‘reforms’ which exacerbate class and ethnic inequalities (Apple 2004; Hursh 2007; Parsons 2009; Whitty and Power 2000), New Zealand policy makers would do well to look to the nation’s very own, world leading achievements.

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The Leadership Styles and Practices of Women Secondary School Principals

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Abstract

In order to preserve our journey of envisioning the future, we must first acknowledge and reflect on our past. This paper presents an iconographic study of three female secondary school principals in New Zealand, exhibiting how their experiences have impacted upon their personal theories, leadership styles, and practice. Composed through a métissage (merging) of image and dialogue which creates portraits of the principals' leadership identities, it is set in situ within a Principal Professional Learning Community (PPLC).

This paper builds on previous studies of New Zealand Women Principals' experiences of leadership, becoming a *conversation piece* (informal group portrait), and contributing to a greater insight into the identities, roles, and practices of women principals while modelling a framework for reflective practice as a tool for professional and educational leadership development. Unique to this research study is the portrayal of the life story process, of personal leader development through a practical process of reflective arts-based inquiry, as a methodological and theoretical genre. The findings indicate that the personal development, self-awareness, and growth of a leader are a catalyst to stimulate collective professional development.

Introduction

There is a need for professional development strategies and opportunities that help principals more effectively understand their school contexts, their responsibilities, and their own competencies, leadership styles, and practice. This paper on the life stories and experiences of three New Zealand Women, Secondary School Principals, has stemmed from my own aspiration to be a principal. Reflecting on my own experiences as an educator (as a Secondary Art Teacher, an Art History teacher, and as Head of Department) combined with my post-graduate studies in education, I have become motivated to examine the wider leadership culture necessary to support student-centred learning.

Literature widely recognises the role and influence of a principal can significantly impact student achievement, well-being, and school effectiveness (Bush, 1998; Ministry of Education, 2008, 2009; Mulford & Silins, 2003; Robinson, 2007; Sergiovanni, 2009; Stewart, 2000; Thew, 2002). This is germane for New Zealand Education as recent ministry documents highlight the challenge to provide professional learning opportunities

for principals (Ministry of Education, 2008, 2009; Robinson, 2007(April), 2008, 2009; Timperley, Wilson, Barrar, & Fung, 2007). However, literature also suggests in order for professional development to transfer and sustain effective leadership practice, the building of continuous Principal and Leadership Professional Learning Communities (PLC) within New Zealand school contexts is required(Cardno & Fitzgerald, 2005). In order for professional development programmes to be effective, they must not only acknowledge the reality and context of principals' daily practice, but also assist and challenge them to be critically reflective through on-going mentoring, and professional partnerships (Hargreaves & Fullan, 2000; Robertson, 2005). Turning reflection into action has inherent challenges as there is often a gap between principals' espoused theories and their theories in action. Therefore, I argue the assistance of others, via a principal professional learning community (PPLC), is needed to bring principals to critical reflection.

There is potential for this research to enhance current thinking and professional practice, particularly amongst principals, aspiring principals, educational leaders, and professional development educators. There is also an expectation for the findings of research to inform critical debate and initiate discourse about artistic research (Sullivan, 2010).

Methods

This study was a collaborative partnership between the researcher and three women, both individually and collectively. The rationale for the PPLC was to create a culture of support for professional and educational leadership development. This is significant as I discovered these women experienced isolation and loneliness within their roles as principal. Utilising a critical approach for their own leadership development, the PPLC enabled principals to reflect on their leadership style towards informing and improving their practice. It was envisioned that the PPLC would also provide an opportunity for principals to move from action learning, into to an action research orientation.

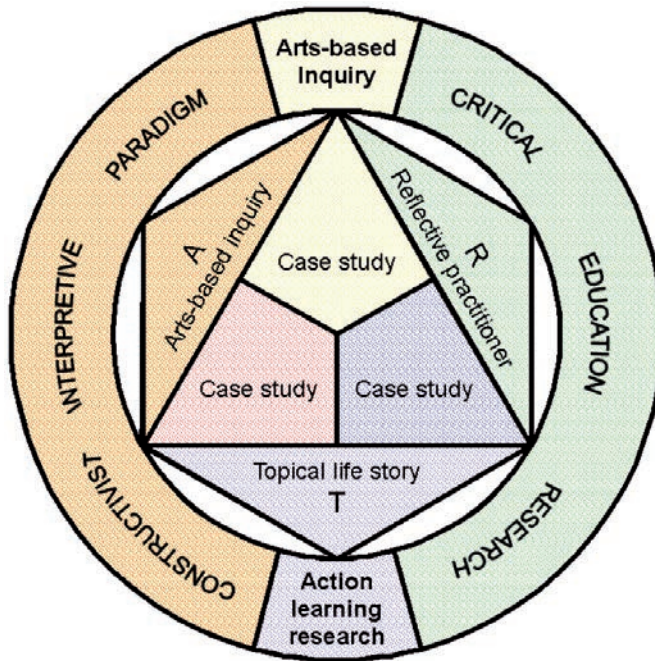
A qualitative, multiple-case study, methodology situated within a constructivist interpretive paradigm was employed. The design was informed by a reflective practitioner approach, and action learning orientation, utilising arts-based inquiry. Arts-based inquiry as a methodological and theoretical genre is situated within the participatory critical action research paradigm (Denzin & Lincoln, 2005; Lincoln, 1995). Arts-based inquiry is a form of reflexive learning which draws together artist-educators looking for ways to document and research their work, and qualitative researchers experimenting with alternative representational forms of inquiry (Davis & Butler-Kisber, 1999). As a research and professional development tool, it holds possibilities for examining the relationship of pedagogy to practice (Cahnmann-Taylor & Siegesmund, 2008; Diamond & Mullen, 1999; O'Toole & Beckett, 2010; Piper & Frankham, 2007). Arts-Based Educational Research (ABER) aims to suggest new ways of viewing educational phenomena through the enhancement of perspectives (Barone & Eisner, 2006). Perspectives can be transformed when using arts-based strategies, in order to reflect on experiences, and to invite others responses to these inquires. Arts-based inquiry initially began primarily with narrative enquiry, and has now extended to

“using poetry, painting, sculpture, readers’ theatre, and other mixed media, to theorise researchers’ personal and professional lives, to interpret educational experiences, to better understand selves and improve professional practice in education” (O’Toole & Beckett, 2010, p. 75).

The data collection period was conducted over three months, and included a pre-study questionnaire, a preliminary focus group, two individual interviews, journal/scrap-booking reflection, and two practical focus group workshops incorporating art-based strategies. The principals then requested another focus group meeting to be able to discuss further readings on leadership styles and professional learning communities.

The following conceptual framework/design and diagram (Figure 1) depicts the métissage (merging) of the interconnected interpretive practices selected to facilitate critical inquiry and which underpin the methods of this research study.

Figure 1. Conceptual framework depicting the study of leadership theory and styles, and integrating learning theory with reflective practice theory held by the three women.



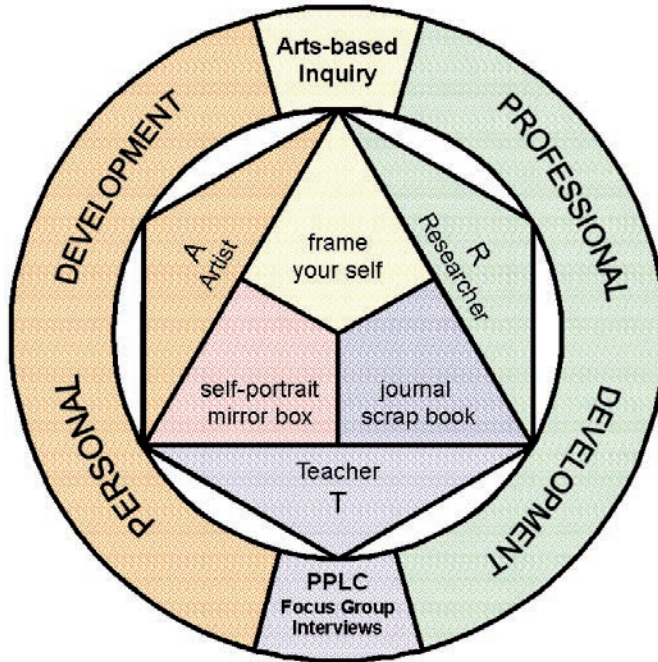
Portraits of Principals – Individual Iconographic Identities

The individual case studies identify symbolic representations of each principal’s leadership philosophy and style, with their conceptions of leadership, development, and practice. The process of capturing their leadership identity, was achieved through three interrelating arts-based methods designed uniquely for this research study: creating the “Frame Your Self” activities, Self-portrait “mirror box” (assemblage artworks), and journal/diary scrap-booking. The principals’ conceptions of leadership can literally and

figuratively be seen through the exhibition and reading (a métissage of image and text) of these self-portraits.

(Figure 2) is a model for reflective practice, as a tool for personal and professional educational leadership development. It shows the reflective arts-based tools and strategies of arts-based inquiry, implemented and outworked by the principals and myself (in the role of an A/R/Tographer – Artist, Researcher and Teacher) within a PPLC.

Figure 2. Framework model for reflective practice as a tool for personal and professional educational leadership development



Principal 1 – Rebecca Louise

Leadership philosophy and styles revealed – Frame Your Self– pre-study

Rebecca commented in the first practical focus group how “without the relationships nothing else can work...pedagogic leadership is really important...you’ve got to be really strong in the philosophy and the science [due to her school’s special educational philosophy]...and the distributive. I would like to say that I am collaborative, but I don’t think I am enough. That’s my goal”.

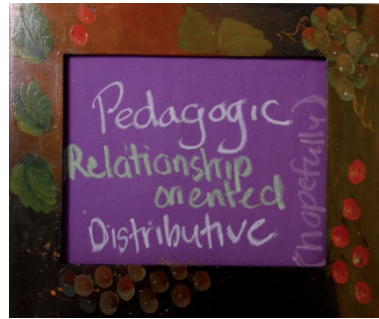


Image 1: Frame Your Self- pre-study

Life story and experiences – Self-portrait mirror box: Perceptions of yourself as a leader

Step 1 – Design

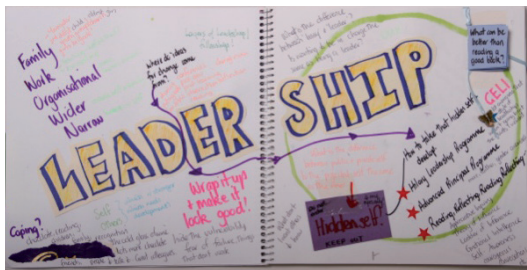


Image 2: Self-portrait mirror box – Step 1: design brainstorming

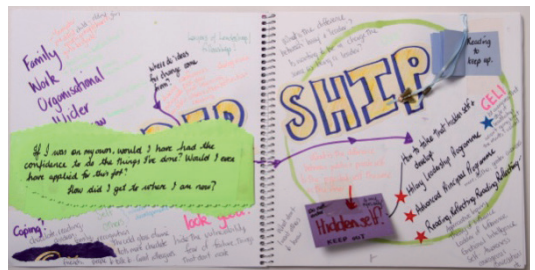


Image 3: Self-portrait mirror box – Step 1: design brainstorming

Step 2 – Analyse

The outside of the box (external-professional) represents the outward self (public or visible).

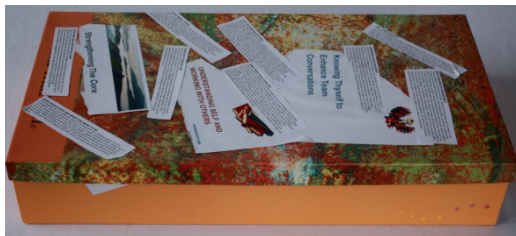


Image 4: Self-portrait mirror box – outside

The inside of the box (internal-personal) represents the inner self (private or unseen)



Image 5: Self-portrait mirror box – inside

Thinking “inside and outside the box”: Three-dimensional symbol of the public and private self

“My outside of the box I guess is about my approach to leadership, finding out more about myself, and the more you understand about where you come from the easier it is to set that to the side at times and listen, be open, and be strong, you know sometimes not to set it aside. And you can’t change anybody else you can only change yourself...” (Rebecca).



Image 6: Self-portrait mirror box – inside lid detail; Leadership lenses

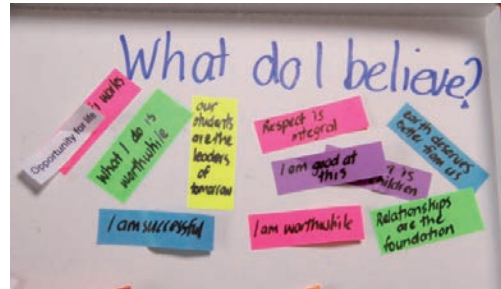


Image 7: Self-portrait mirror box – inside lid detail; What do I believe?



Image 8: Self-portrait mirror box – failure



Image 9: Self-portrait mirror box – vulnerability

Journal/scrap-book reflections

Step 3 – Critique – Reactions to Self-Portrait mirror box

Step 4 – D.R.A.W. (daily reflective analyse workout)

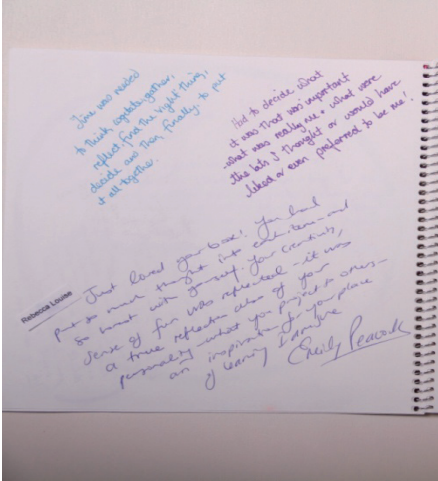


Image 10: Journal reflections – Step 3: critique - reactions

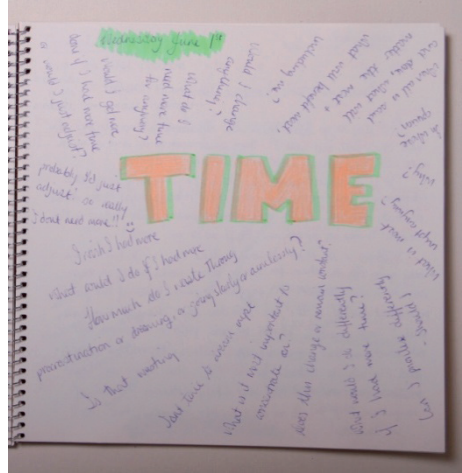


Image 11: Journal reflections – D.R.A.W. TIME

Leadership philosophy and styles revealed – Frame Your Self – post-study



Image 12: Frame Your Self - post-study

In the second interview Rebecca summarised what founded her leadership philosophy and style. "I guess if I could reduce it down to one word if I tried to, I guess if I put VALUES down then that would cover everything. Because it would cover the pedagogy, it would cover the relationships, it would cover distributed leadership".

Principal 2 – Emily Peacock

Leadership philosophy and styles revealed – Frame Your Self – pre-study



Image 13: Frame Your Self – pre-study

Emily stated in the first practical focus group: “Authentic and servant leadership...working... towards that vision or the common good and being a servant leader is that analogy like you’re the conductor of a jazz band and all your staff are jazz players. You want them to be the best that they can be to play their part to make it really good for the organisation to reach that goal... I’ve written there collaborative because I’m very much about working alongside, that coaching that mentoring...and in the centre the key for me is relationships. Relationships with people, getting to know your staff, your parents, your students, building up trust, because unless you have that...you can’t inspire you can’t lead, they won’t follow”.

Life story and experiences – Self-portrait mirror box: Perceptions of yourself as a leader

Step 1 – Design

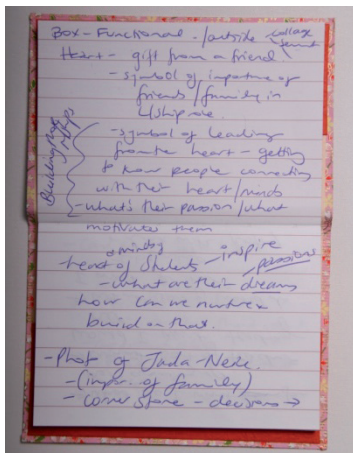


Image 14: Self-portrait mirror box – Steps 1 and 2

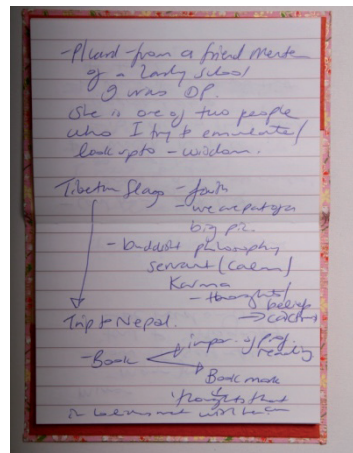


Image 15: Self-portrait mirror box – Steps 1 and 2

Step 2 – Analyse

The outside of the box (external-professional) represents the outward self (public or visible).

The inside of the box (internal-personal) represents the inner self (private or unseen)



Image 16: Self-portrait mirror box – outside



Image 17: Self-portrait mirror box – inside

Thinking inside and outside the box: Three-dimensional symbol of the public and private self.

“The box that I chose... black metal slide case...it’s very functional, very practical, no frills and that’s what I am... part of me as a leader! And what I put on here (collage on outside of box), I actually found a C.V. when I applied for the job at Bowburn High School and I had to talk about my philosophies or ideas about leadership...so it was good to go back after 7 years and look at that and see if that still held true and, yes, because I talked about authentic leadership, servant leadership, collaborative, I talked about setting the tone, direction, defining that vision based on sound values and principles, so that still holds true” (Emily).



Image 18: Self-portrait mirror box – heart



Image 19: Self-portrait mirror box – card and postcard

Journal/scrap-book reflections

Step 3 – Critique – Reactions to Self-Portrait mirror box

Step 4 – D.R.A.W. (daily reflective analyse workout)

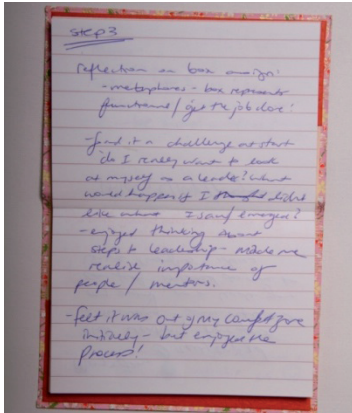


Image 20: Journal/scrap-book reflections – Step 3: critique – reactions

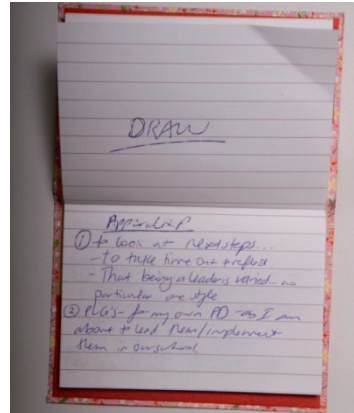


Image 21: Journal/scrap-book reflections – D.R.A.W.

Leadership philosophy and styles revealed – Frame Your Self – post study



Image 22: Frame Your Self – post-study

Commenting on the outcome of this study, Emily said that, “It’s just affirmed for me what’s important to me as a leader... That’s who I am and... I wouldn’t necessarily change and so I’ve got here celebration of styles, yes I’m quite happy to be singing about it, it’s more colourful but it’s essentially still relationships from the heart, incorporating aspects of the servant, authentic and collaborative leadership”.

Principal 3 – Elisabeth Hebden

Leadership philosophy and styles revealed – Frame Your Self – pre-study



Image 23: Frame Your Self - pre-study

Elisabeth analysed in the second focus group what her leadership philosophy and style was founded upon: “Real... genuine in what I want to achieve... I think I’m just in that I’m honest in what I do and try to be fair. Service is really important because as a leader if you can’t serve your community then you’re not achieving anything. Democratic because I try to involve other people in decision making and not be autocratic. Pastoral...to me encompasses a lot of this because you are looking at the needs of the staff... forward thinking...you’ve always got to look to the future to where you are leading the school. Overall leadership is underpinned by stewardship...I’ve got this really strong heritage of all these people who went before me and it’s my responsibility, I believe, to build upon what they’ve left behind, so I look forward to the future for the next person coming in afterwards”.

Life histories and experiences – Self-portrait mirror box: Perceptions of yourself as a leader

Step 1 – Design

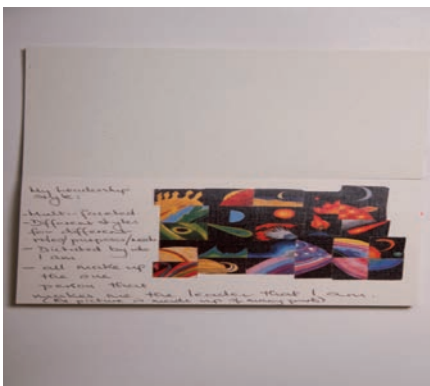


Image 24: Journal/scrapbook leadership style pre-study brainstorming

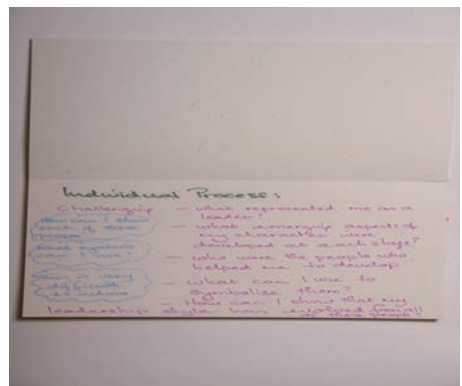


Image 25: Self-portrait mirror box – Step 1: design brainstorming

Step 2 – Analyse

The outside of the box (external-professional) represents the outward self (public or visible).

The inside of the box (internal-personal) represents the inner self (private or unseen)



Image 26: Self-portrait mirror box – outside wrapped



Image 27: Self-portrait mirror box – inside unwrapped

Thinking inside and outside the box: Three-dimensional symbol of the public and private self.

“My box is... a child size *willow clothes basket* wrapped in a tea-towel and tied up as a *picnic hamper*. The symbolism for me was that it is interwoven with many facets... is totally reliable in its function and is extremely strong having been well used, well-travelled, and in use today - so reflected somewhat my role as a leader having developed wisdom from experiences, ability to re-invent oneself, strength of character, values...” (Elisabeth).



Image 28: Self-portrait mirror box – clapper hands



Image 29: Self-portrait mirror box – scroll

Journal/scrap-book reflections

Step 3 – Critique – Reactions to Self-portrait mirror box

Step 4 – D.R.A.W. (daily reflective analyse workout)

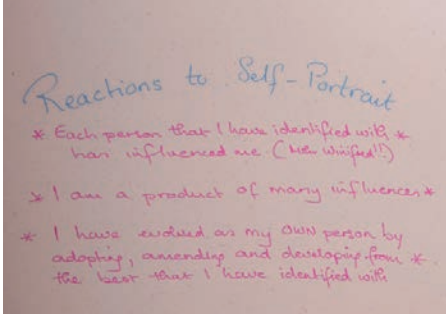


Image 30: Journal/scrap-book reflections – Step 3: critique – reactions

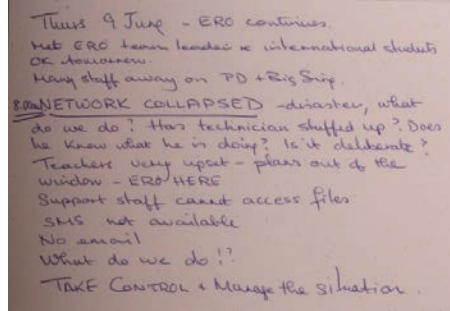


Image 31: Journal/scrap-book reflections – D.R.A.W. ERO visit – network collapse!

Leadership philosophy and styles revealed – Frame Your Self – post study



Image 32: Frame Your Self – post-study

Elisabeth reflects on her leadership philosophy and style in the second interview: “Positive - central word, so that’s why it’s got a cloud around it. Forward thinking - it’s got an arrow...The teacup is a servant leadership. It’s the Mercy symbol... when Catherine McCauley (founder of sisters of Mercy) was dying she asked to have a ‘comfortable cup of tea’ prepared for the Sisters watching at her deathbed. This simple loving gesture has served for generations of Sisters of Mercy as an illustration of her generous and hospitable manner (Burns & Carney, 1996). A shining light - picture of lantern - to the staff and hopefully to the students and parents. They are all interrelated and interact, (arrows going...in both directions) reflect on each other and work together as a whole and I think those four aspects are really how I see my leadership style at this moment and time”.

Three months after completing the research study I invited the principals to comment on the value of taking part in this research study and the direct outcomes for themselves personally and professionally:

Rebecca

“This research project has been a reaffirmation for me. The exploration of self and the affect self has on the role of principal has been an on-going process for some years. Being involved in this study has allowed me to do a ‘stocktake’ of where I am in my personal and professional development. I hadn’t really done this for some time - yes you do appraisals and as part of this there is a self-appraisal element, but the time to really analyse self is a luxury I find it difficult to make time for. And yet the experience is so valuable I should not have to feel guilty for making that time. This ‘stocktake’ allowed me to evaluate and integrate much of the learning I have done over the past few years. I have been able to look at what has been effective, cast off some lingering doubts and old habits and gain a certain, dare I say it ‘sereneness’ in my role and the contribution I have made to the school I work in. As a result of this self-evaluation I feel more grounded in the person I am and the bearing that brings to the role of principal. I feel more certain that my contribution is important, and I have (almost) stopped undervaluing that input as has been my habit for the past several years.

The time to talk to other principals has also been valuable [with] people going through the same experiences, viewing principalship the same way. Hearing these experienced, passionate and utterly competent women express the same doubts, fears and worries that I have was such a relief. The importance of regular get-togethers with like-minded people filling the same role has been highlighted, and this is something that must be prioritised. The hardest thing is to not get sucked back into the morass that is running a school, and to continue to set this time aside. That is the commitment I want to make for my on-going personal and professional growth.”

Emily

“It has been extremely valuable to take part in this research study. It was good professional learning development for me both personally and professionally. The networking, sharing of stories provided valuable support. It gave me time which is precious to reflect on myself in particular my journey as a leader which is evolving all the time. It was good to be exposed to ideas, theories and different readings on leadership. The direct outcome has been personally – to appreciate my husband and family more, they are your backbone and I simply could not do what I do without their support. Professionally – to take time to reflect via a journal. To keep up with readings on leadership. To develop further the concept of professional learning groups as a way of delivering professional learning development in our school.”

Elisabeth

“Personally; it has made me look, in depth, at myself as a person. To recognise what my strengths are and what it is about me that has enabled me to take on this role and continue with it. I have had time to reflect on my pathway to principalship and the people and events which moulded me and led me to becoming a principal.

The opportunity to take part in facilitated discussion and activities with two other female principals, and for the group to develop as a professional learning community, has given me renewed confidence in my role as a school leader. I perceive to now have a new sense of direction, and that my strong belief in servant leadership is what underpins my principalship. I was given the name of a person who was working with one of the other principals on principal appraisal. Through discussions in our group, I contacted this person and initially looked at using his services as a Mentor for myself. In discussion with the BOT Chairperson the BOT agreed to employ this person to appraise me this year. This has taken place and one of the outcomes will be to look further into working with this person as an external facilitator on performance review and possible re-structuring.”

Concluding Voice

As the principals reflected upon their life stories and experiences, several key elements emerged as significant impacts. The greatest of these was the influence of relationships, both personal (including family and friends), and professional. Others included the indirect influence of authors, and the role modelling and mentoring received from other principals. The impact and influence of both *having* and *being* role models, mentors, and coaches have emerged as dominant influences on the principals’ leadership development. The importance of mentoring and coaching was identified as a means to reduce the isolation and loneliness, inherent in the role of a principal.

This research provides empirical evidence to support the claim that women’s educational leadership has the ethic of care, and the empowerment of others, as central foci (Court, 1992, 1994; Fitzgerald & Moore, 2005; Mertz & McNeely, 1998; Strachan, 1999). Under the umbrella of being democratic and authentic as a leader, each principal purposefully sought to foster empowering relationships, and a culture where community and pastoral leadership is understood and valued within their schools. This study further confirms that a principal has a unique position of influence in building a shared vision, and encouraging schools to become caring, focused, and inquiring, professional learning communities.

The leadership styles and philosophies of the principals and their perceptions of effective leadership have revealed the uniqueness of each principal’s leadership identity. These findings highlight that effective leadership utilises a combination of personal styles, which relate to context, culture, beliefs, and values. Furthermore, the findings concur with the literature claiming effective leadership capacity is central to school effectiveness and improvement (Bolam et al., 2005; Davies, 2009; Dimmock & Walker, 2005; Hargreaves & Fink, 2006; Martin & Robertson, 2003; Robertson, 2005; Sergiovanni, 2009).

Examining the professional development strategies that assist principals to develop leadership capacity has shown the importance of the PPLC as a model for professional development. Successful strategies for principal development include the opportunity to reflect on current practice, to collaborate with colleagues, and to learn in situational context, utilising a range of tools. This suggests the development of these leadership strategies requires principals to be actively involved in the designing and building of individual professional development programmes, and those of the wider school community.

Reflective practice, behaviour change, and individual and collective transformation, cannot occur in a vacuum. A support system to critique and enact our realities through discourse and action is needed, whether with one other person (coach, mentor), a group, or a community. To be able to tell our stories, freely and truthfully, requires an environment of trust within an intentional community. The process of reflecting within a PPLC has shown the benefits gained from having time to learn from other principals who have a common understanding of the role, yet hold a diversity of life experiences. This study has given each of the principals the opportunity to consolidate and celebrate who they are as leaders. It has been an opportunity to re-affirm what is important to them, and to have belief in themselves and what they are doing.

The analysis of the women principals' subjective perceptions of their life stories and experiences could be considered incomplete without an analysis of the historical context which have shaped their leadership styles, practice, and leadership development (Dimmock & Donoghue, 1996). However, it was beyond the scope of this study to draw more fully upon a broader historical context and to include a wider commentary on community and local history, social histories, and geographies, in which these life stories were embedded. Bearing this in mind, further research could focus on investigating the wider cultural, social, and historical contexts, and histories within which leadership identity is formed.

The findings indicate that knowing yourself as a leader requires investing time to reflect on who you are in person (internal/private), your experiences, beliefs, principles, and values. This is preliminary to exploring who you are in practice (external/public). Principals must seek a forum that places their personal development before professional development, recognising a symbiotic relationship exists between their own individual personal and professional development needs, as well as those of their schools.

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Research-Oriented School-Based Teacher Education: A Model

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Abstract

Research-based teacher education has been explored as a way to prepare teachers for effective teaching. The model developed and described in this research involves volunteer teachers from China who are undertaking a research degree while learning how to teach within Australian schools. The model advocates an action-learning basis for teacher education, where teaching is situated in and contextualised by schools, and where theory is accessed when needed. The model articulates the interdependence of teacher education, classroom teaching, and research, and promotes a view that enquiry and change are an integral part of western school culture.

Key words: teacher education; research-oriented; school-based; mentor; apprenticeship model

Introduction

A New South Wales (NSW) University, a NSW regional education authority, and a Chinese Regional Education Authority, negotiated a partnership for recent graduates from universities in a large regional Chinese city. The graduates volunteered to teach the Chinese language (Mandarin) within primary and secondary schools in NSW, Australia. As the volunteer teachers were also completing their postgraduate studies while volunteering, they have a dual identity; as volunteer teachers; and as research students. The desired outcomes of the partnership included the Regional Chinese Education Authority gaining teachers of English ready for employment, in both schools and universities upon their return to China. Also, the NSW Regional Education Authority would have had Mandarin taught in some of its schools, while enhancing the language skills of fellow Australian teachers. The university would benefit from an increase in international postgraduate research students and links with a Chinese education system.

As part of a three-year strategic plan, a NSW Education Authority introduced Chinese language education as part of the curriculum. As there were no additional teachers of Mandarin available to resource this initiative, it was decided to source voluntary, native Mandarin speakers from China. Consequently, the Regional Director General of an education bureau in the south east of China was contacted to source volunteers, and a committed professional relationship was established between the NSW Regional Director and the Chinese Regional Director General. The depth and sincerity of this

relationship is cited as one of the most significant reasons for the ongoing commitment of both partners to the initiative.

The project was to sponsor groups of ten volunteer teachers per year, for five years, with each group returning to China after 18 months in Australia. The volunteer teachers would work in schools for ten hours per week, and be able to study for the remainder of their time. At the outset, the nature of the study was not specified, but was envisaged the level of study should be the highest available in order to attract high quality applicants. Sponsorship would cover travel and other establishment costs, with smaller scholarships available from each partner. However, successful applicants would meet the costs of both their study and living expenses. The Chinese Education Authority would be responsible for the volunteer teacher selection process, and management of the process up to the point of arrival in Australia.

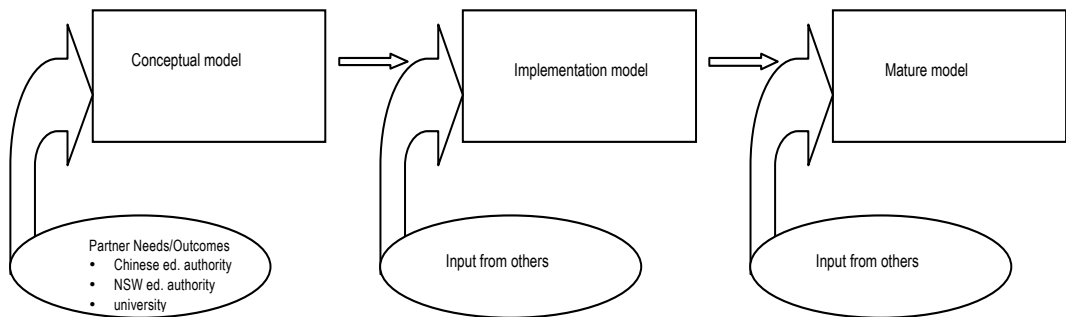
The NSW Regional Education Authority had an existing cooperative arrangement with another university. As part of this strategic alliance, this university became a third member of the partnership, with the volunteer teachers undertaking a research master's degree. By completing a research degree, with its associated discipline of evidence-based analysis and critique, the learning outcomes for the volunteers would be of more strategic benefit for their future careers in China.

The relative independent development of the teaching component, and the research component, is a function of meeting the needs of partners and volunteer teachers / research students rather than a conceptualisation of the 'best way' to provide teacher education and research experiences. Nevertheless, it was thought the strategy of integrating the two would forge synergies between them. Essentially, there was no preconceived model driving the conceptualisation of the project. Rather, it was driven by 'partner needs' and 'pragmatism,' with the partners being the Australian and Chinese Education Authorities, and the Australian University. In the conceptualisation phase of the model the voices of students, teachers, and lecturers were absent. This is because they were not viewed as partners. Similarly, the differing understandings of teaching and learning in China and Australia were not considered, as this level of detail was a 'pragmatic' consideration.

The purpose of this paper is to distil the influences and ideas in the minds of those responsible for developing the project, and to describe the conceptual model of research and school-based teacher education, as it existed prior to implementation. It is recognised as the project unfolds, this model will evolve to address the challenges associated with its implementation and contextual change. It will be modified by the ideas and influences of others as they engage with the project. In particular, the voices of students, teachers and lecturers will influence the model as it matures. However, as with many such models, modifications occur as part of the implementation process.

Methodology

The project was not based on an existing model, as it would need to develop and evolve, as the project moved from conceptualisation to maturity. A conceptual version would be modified as it was implemented, before it eventually stabilised as a mature version (see Figure 1). Consequently, a hermeneutic approach was taken to the collection and interpretation of data.

Figure 1: Different Versions of the Model

Discussion style interviews were used as data sources to construct a story of model development, or “a personification and patterning of events around a theme or figure of significance” (Carter, 1993: 6). However, according to Ricoeur (1991), the model does not represent just one reality, but rather a complex interaction of the people providing text, those gathering and interpreting text, as well as “the thing of the text” (p. 131). While every effort was made to keep what is presented as close as possible to the story told by those interviewed, the result can only be regarded as a reflection of multiple realities.

Ricoeur (1991) and Gadamer (1989) assert that any story is an interpretation, and inextricably linked to the traditions and history of the researchers writing the report. There is therefore an obligation to share the thinking, and to describe the processes of interpretation applied to the interview data as it was shaped into the final conceptual model (Alvesson & Skoldberg, 2000; Wallace & Loudon, 2000).

Selecting participants

Each of the three partners involved had their own specific interests and desired outcome. Each partner organisation had an individual responsible for that partner’s participation in the project.

Limiting data collection to those directly involved in the initial conceptualisation of the project is indicative of one of many subjective judgments made while deriving the model. Those interviewed were the Regional Director for the NSW Education Authority, the Regional Director General of the Chinese Education Authority, and a Professor of Education at the University.

Collecting data

Each participant was interviewed soon after the volunteer teachers arrived in Australia, and engaged in a discussion designed to provide information about:

- a possible model upon which the project was based;
- the relationship between the three partners;
- the outcomes each partner wanted from the project;
- the volunteer teachers and what they brought to the project;
- the benefits the project would provide for volunteer teachers; and
- the relationship between Australia and China.

The interviews were used as the main source of data. However, one of the researchers was connected with the project, meaning anecdotal information would inevitably, but inadvertently, be woven into the construction of a ‘conceptual’ model.

Data from each of the three interviews were coded and analysed independently of the others for recurring themes (Erickson, 1986; Coble, Selin & Erickson, 2003). The findings of these analyses were used to construct a conceptual model for each interview. The three interview models were then integrated to develop an overall model of research and school-based teacher education.

Interpreting data

Three researchers collected and interpreted the data retrieved from each of the three interviews. One researcher, not connected with the project, used these interpretations to prepare a conceptual model based on each interview. Following the development of these models, all three researchers met to discuss them. There was considerable agreement about the framework, and components of each of the three models developed.

NSW Regional Director’s view of the project

The NSW Regional Director viewed the project as part of a ‘China strategy.’ He described his vision for the strategy:

So, when I became the Regional Director I determined that we would have a China strategy. ... Developing a regional China strategy meant cooperating formerly with provinces of major districts, coordinating sister school links, expanding Chinese language learning, collaborating with TAFE and having reciprocal teacher professional learning (NSW Regional Director).

The Regional Director referred to it as a volunteer project:

We sent backwards and forwards drafts of a MOU that would satisfy both the Chinese and ourselves... Volunteer project wasn’t even talked about at that stage – more general stuff about supporting teaching and learning Mandarin ... Within the MOU, they began to negotiate another MOU on the volunteer program (NSW Regional Director).

These comments suggested the NSW Regional Director viewed the Chinese volunteer teachers as contributing their expertise, without expecting a financial reward. However, the project was not viewed as a volunteer model. In fact, when asked about the model of teaching and research, the NSW Regional Director said he did not base the project on any model:

So, if we are trying to decide if we started with a model, no, there was not because it really was a series of iterations and escalations from, I guess, from both our aims (NSW Regional Director).

Although there was no model on which the project was based, the NSW Regional Director did have a basic conception of the project. When asked how the project was introduced to schools and how schools were selected to participate, he said:

I built it up over time through communication with principals, through weekly meetings... it was within the strategic plan. The critical thing from my perspective was we had schools that: a) were really interested; b) were, for the largest part, in combination together through classes between primary and secondary schools. So, that we had the ability, in the end, to have a continuity and sequence of learning. So that the students within a particular class could develop proficiency by the end of primary school that could be built upon in the secondary rather than starting from scratch. So, that became a critical determinant (NSW Regional Director).

Schools were selected based on their interest and ability in developing relationships with other schools for students to learn Mandarin, and then continue their studies into secondary education. Sustainability of student learning was the focus, rather than sustainability of the project.

The NSW Regional Director invited the university to join the project to provide a university qualification for the volunteer teachers:

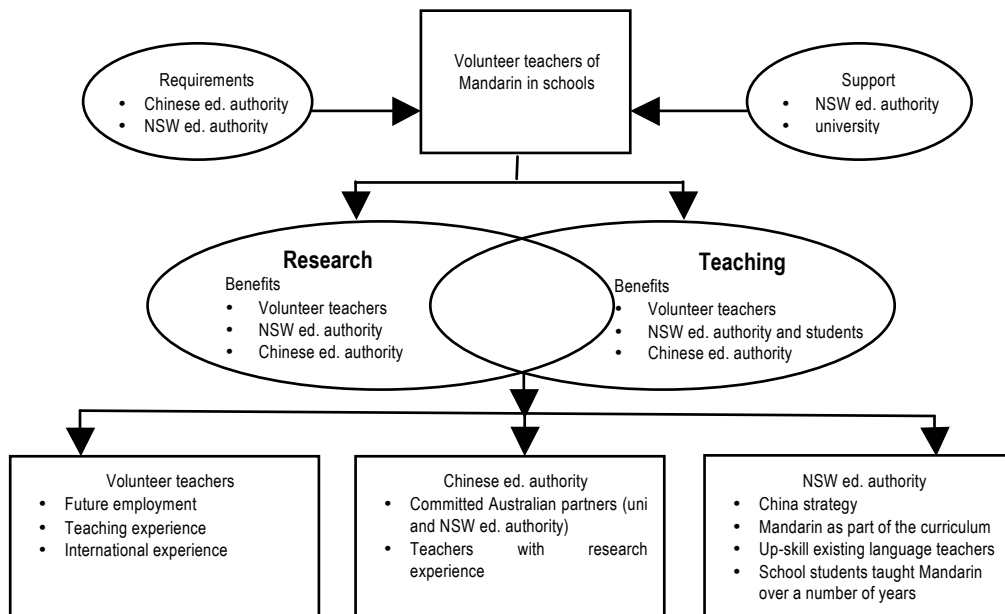
The other part, in terms of sustainability, is the partnership we had developed with the university. ... Critically, the uni came onboard for the Master's program (NSW Regional Director).

The NSW Regional Director saw the research study undertaken by the volunteer teachers as of great value in their future careers, to the NSW education authority and to the Chinese education authority:

I see that (research study) is a really rich way of taking this forward and seeing what value can be extracted from it ... for both, for us too, because the reflections that come back to us can be extremely powerful in helping us ... through that research process. But also because when they return to China, the value that will be given to the (Regional) Government and the Bureau and to the society from the research they have undertaken. The international experience will also help them (volunteer teachers) get a job (NSW Regional Director).

The NSW Regional Director viewed the project as essentially a volunteer teacher program benefiting the NSW regional education authority, the Chinese regional education authority and the volunteer teachers as shown in Figure 2.

Figure 2: NSW Regional Director’s conceptualisation of the project



The University Professor’s view of the project

The University Professor conceptualised the project as a research approach to the education of volunteer teachers from China. He agreed there was no model used as a basis for conceptualising the project. However, he said the project did not start from scratch:

In one sense we do have a conceptual framework for a model that evolves over time. It doesn’t actually start off as a fixed entity, but evolved through negotiation. Negotiation is a way to put things together in a realistic sense. So, practicality led to the development of a model (University Professor).

The project was developed practically by considering and combining the different perspectives of partners, who may not have always initially agreed but who eventually reached understandings. The Professor was involved in meetings with teachers, answering questions about the university’s courses and programs, and practicum in which the volunteer teachers would be involved. The negotiations went through various stages of miscommunication, misunderstandings, and explanations, but eventually came together in understanding and agreement. Such negotiations were practical, productive, and healthy, because they promoted mutual trust and respect.

Like the NSW Regional Director, the professor has a history of building relationships with China:

My involvement (with China) came, not because of any particular interests ... (but) in the context of thinking about what globalisation means locally. I think that's the way I began to conceive the project. One of the ideas is that globalisation means the movement of people. Of course the key movement of people relates to the movement of students in Australia ... to try and build research-based relationships, particularly with China, and to drive this interest in terms of research collaboration. ... My interest is in setting up a research-based relationship. The project will deliver experienced teachers and researchers with international experience to the Bureau and to China generally (University Professor).

The Professor viewed the project as part of global student movements, with an emphasis on research. In his view, the research opportunity is important for the volunteer teachers, and aligns with his personal commitment to extend research relationships between the two countries.

The research learning begins before the volunteer teachers leave China:

Pedagogically, we will get the students (volunteer teachers), prior to coming, to document and engage in reflections of their education in China ... That gives you a kind of access to, hopefully some data not contaminated by their experience when they get to Australia (University Professor).

For the university, the focus was the research-based education of the volunteer teachers. The challenge for the university was to integrate the research education of volunteer teachers, with their teaching:

For us the challenge is ... to think how we put ... their experience of becoming and working as teachers at the centre of their research project in their research education. That is, I think, the important, innovative and challenging element of the project (University Professor).

The professor saw the volunteer teachers as immersed in a community of researchers with diverse experiences, interests and expertise. Not only would the supervision load be shared but the community in which the volunteer teachers would develop their research skills would be rich and rewarding. They would experience a genuine research environment to inform their teaching and to take back to China:

I will organise fortnightly research workshops for them. That will be a kind of team-based approach ... different supervisors will lead seminars ... They will ... do specific training. They (volunteer teachers) will be trained especially around ... their research proposal ... ethics ... doing their literature review, methodology, methods ... data analysis, etc. ... There are also a range of university-based seminars. They are all encouraged to attend all of those ... There are also things like thesis-writing circles, ... research workshops, team-based workshops (University Professor).

As well as participating in the routine activities of masters students, the volunteers will be supported with workshops designed to help with their specific issues. These will inevitably be related to their teaching and issues that arise from interactions with schools. The university will benefit directly from the partnership through fees from a relatively large number of research students. There may also be indirect benefits:

Somebody might get a joint authored paper at a conference ... so I'm hoping they (volunteers) are producing some international capital, some academic capital that some might put in their CV. ... improve our capacity for engaging specifically with China, so we have a better understanding of China. Supervisors might get more international experience ... that might help inform our thinking about other ways of doing teacher education, other than just a school-based apprenticeship (University Professor).

The university will increase its intellectual capacity and capital from participating in the project. Supervisors will benefit from jointly-authored papers with the volunteers as well as a better understanding of China. An alternative model of teacher education will be implemented, explored and evaluated.

The Chinese volunteer teachers are expected to derive a number of personal benefits from working and conducting research in Australia:

They are all offered ... a guaranteed job of being a teacher in (Chinese) schools, teaching English. And this kind of international experience enhances their career trajectory in China. So, they will go back with knowledge and skills, including research skills, the nature of schooling and education. ... given their expertise and ... (the) new reforms (in China) of the last few years, people with this kind of international experience and qualification will probably end up in a leadership position in a very short time (University Professor).

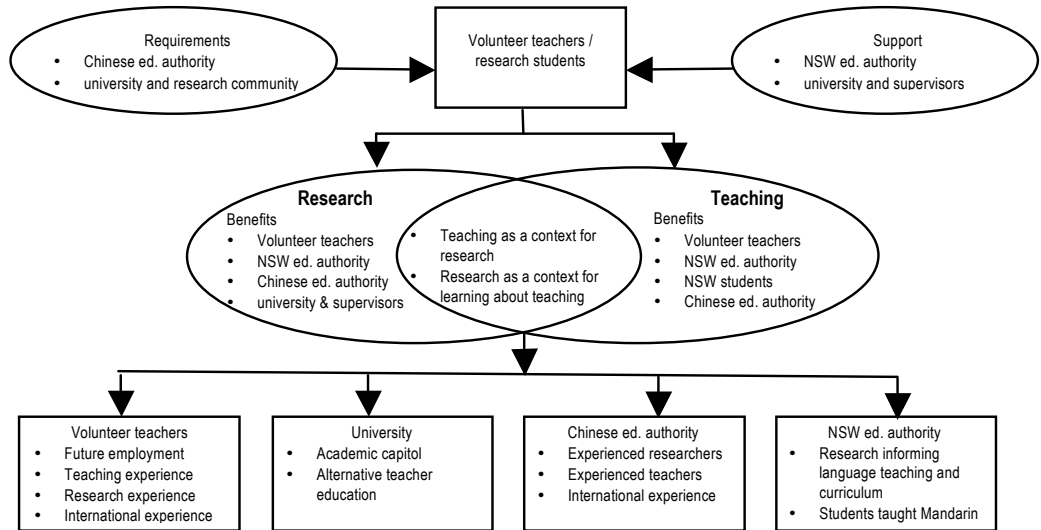
The expectation is that the research skills and teaching experience gained in Australia can act both independently and in combination to enable the volunteers to obtain employment and career advancement in China.

The Chinese Director General's view of the project

The Chinese Director General was interviewed in China. Although a long way from the action, he was very committed to the project. He viewed the project as part of an education strategic plan for the Region:

The region is an important trade center in China. Foreigners are common here. We are familiar with western clothes, food, and their life. But, we do not know how they think. We need to do something to understand westerners more. Our future is to trade with the west. Education will help (Chinese Director General).

Figure 3: University Professor’s conceptualisation of the project



The Chinese Director General’s goal for the volunteer teachers was made very clear early in the negotiations among the three partners. He said they should study for the highest degree possible during their time in Australia:

It was important the volunteer teachers did a course at the university that would equip them with the highest level, so they learn about western thinking, using evidence and reasons for decisions ... the Masters Honours will equip them for their return to China, with skills and capabilities that are highly developed and would be greatly useful to China (Chinese Director General).

Consequently, the Chinese education authority selected the highest caliber applicants to meet the university’s entry standard, for a research degree. In doing so, it meant the academic standard of the volunteer teachers would be high, and therefore may increase the chance of their being successful as teachers:

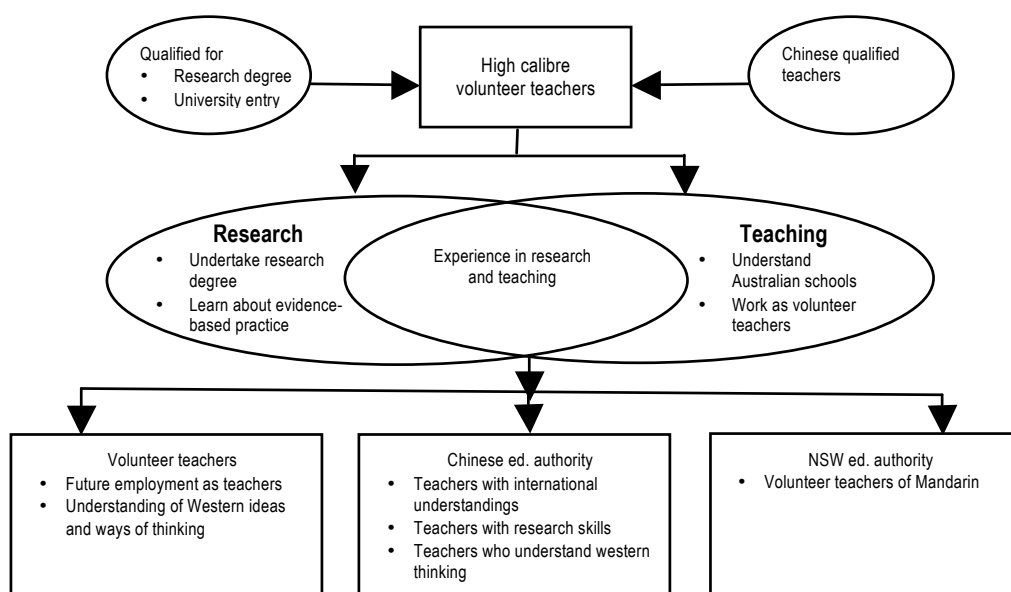
There was logic in working at the honours level, for a couple of reasons. One is the caliber of the people ... the approach that we all agreed to in the end, was without question the best way to go, because we really got top young people (Chinese Director General).

The Chinese Director General did not want the volunteer teachers to study an English language course in Australia. He wanted them to have first-hand knowledge and experience within Australian schools, and to learn how to conduct research in schools. He wanted them to work in schools and to complete a research degree:

We did not want them to do a language course. They are over there (Australia) to teach Mandarin. They have Chinese language ability. They could have done TESOL over there (in Australia) by coursework. They could also have done a teaching course. We didn't want them to do that because we wanted them (to) work out what is going on in Australia. We wanted them to do a research-based degree (Chinese Director General).

The Director General's view of the project clearly aligns an authentic school-based teaching experience, with a research qualification. These experiences, combined with cultural emersion, would enable the volunteers to understand western ways of thinking, and to promote intercultural understandings.

Figure 4: The Chinese Director General's conceptualisation of the Project



Overall, the NSW Regional Director saw the project as a way of delivering volunteer Mandarin teachers to NSW primary and secondary schools. The Chinese Regional Director General viewed the project as a way of providing beginning teachers with international experience through cultural immersion, so they could learn to relate with, and understand, evidence-based ways of thinking. The University Professor viewed the project as a way of exploring research-based teacher education while developing a deeper understanding of global knowledge networks, through connections with Chinese education systems.

The Conceptual Model

Models are essentially simplified representations of systems that show important features, and the relationships between them (Hughes, Ndonko, Ouedraogo, Ngum & Popp, 2004). Models function to simplify complex patterns and relationships, and to facilitate understandings and learning. They are representations only, and are never entirely accurate. A model generates greater meaning when it is viewed from within the perspective intended by those who developed it. This increases the chance its interpretation will be consistent with the purpose for which it was developed. Ideally, this perspective should be central to, or at least evident within, the model. The model of teacher education developed by this paper is contextualised by two overarching, interacting perspectives. The first is the relationship between teaching and research, and the second is the experiential, or generative nature of the project itself.

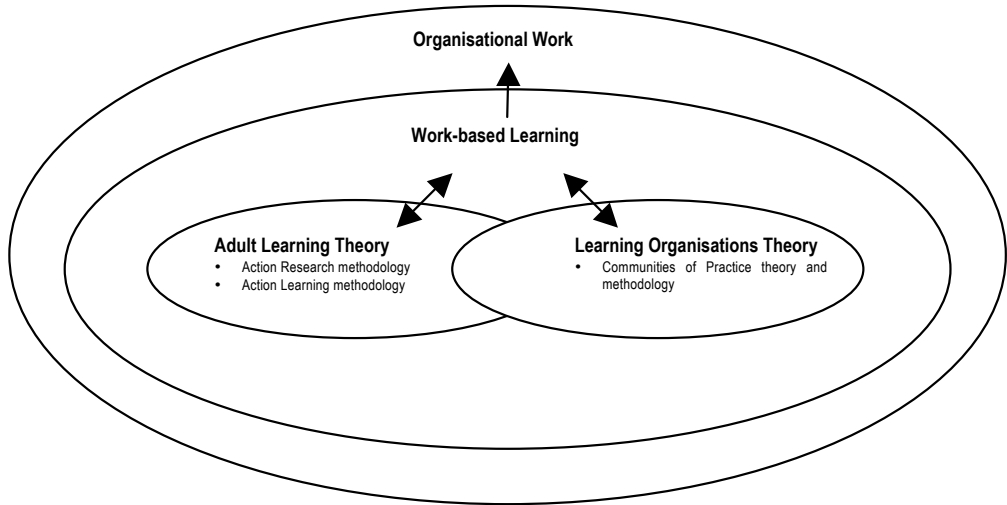
The teaching component of the project developed relatively independently of its research component. Essentially the volunteer teachers learnt how to teach while on-the-job. It was almost like an apprenticeship; work-based learning (Maynard & Furlong, 1993; Glazer & Hannafin, 2008; Mitchell & McKenna, 2008). This is not to say learning was not well supported by professional learning. However, learning how to teach occurs while teaching. At the same time, a research project was undertaken relatively independently of teaching, or rather, independently of learning how to teach. The model allows for a connection between research and teaching, as teaching may be the context for research. However, what is more tenuous is that conducting research, and learning from research will help with learning how to teach.

The experiential, or action learning, nature of the project is a feature not only of teaching, but of the project as a whole. The project was negotiated based on the partner's abilities to learn about, and from, one another as the project came together.

Action learning is learning managed by the work place, therefore is work-based learning (Mitchell & McKenna, 2008). The focus is learning about work, while working. Workers include volunteers who participate in a "range of different staff development methodologies and techniques, from mentoring and coaching to action learning and communities of practice" (Mitchell & McKenna, 2008: p. 1), based on theories of adult learning, and learning organisations (see Figure 5).

In the model being developed, the teaching component can be conceptualised as work-based learning. Teachers in schools act as mentors and coaches, for volunteer teachers, while they learn to teach Mandarin in the classroom. University staff also function within a mentoring capacity, for both teaching and research. School-based experiences become the focus of directed discussions about pedagogy in university situated work sessions.

Action learning also involves learning from activity, using a cycle of experience, review, drawing conclusions, and planning for new action (Mitchell & McKenna, 2008). This cycle is iterative and situated within the work context. It is anticipated the research component of the project will facilitate reflection, and the development of skills will enable volunteer teachers to implement such a cycle of learning in the teaching component of the project. The model does not necessarily incorporate action research. That is, volunteer teachers are not expected to make their teaching

Figure 5: Work-based Learning (*Adapted from Mitchell, Henry & Young, 2001*)

the subject of their research. However, this is not discouraged, nor is it a necessary requirement of the research. Action learning is characterised by working with real life problems, questioning existing solutions, trying different solutions, shared and sharing experiences, and individual and group reflection (Mitchell & McKenna, 2008). This project is characterised by these features in both the teaching and research components, as well as in developing an innovative model of research-based teacher education.

Although coming to the project somewhat independently, the teaching and research components were purposefully brought together as the model was conceptualised. Research through promotion of theorising, higher order thinking, clarification, evidence-based learning, and reflection, provides for knowledge acquisition and skill and attitude development transferable to learning how to teach. Zeichner (2003) reviewed teacher research in American schools, and noted that it is now common as a means of professional learning. He found that teacher research, well implemented and supported, “represents a long term investment in building the capacity of teachers to exercise their judgment and leadership abilities to support learning for themselves and their students” (p. 10). Aubusson, Steele, Dinham and Brady (2007) made similar assertions. If this holds true for the learning of experienced teachers, there is no reason why research skills cannot equally enhance pre-service teacher ability. The project is well supported, and is able to provide this opportunity for a small number of students.

Work-based teacher education has been described as following an apprenticeship model. Glazer and Hannfin (2006) describe a model of Collaborative Apprenticeship for professionals. They propose a professional learning model involving reciprocal interactions, defined as “interactions demonstrating and influencing a mutual relationship supporting teacher learning and development” (p. 180). Glazer and Hannafin (2008) report on the implementation of this model for teachers operating within a community of practice. In this example, “initially teacher effort is scaffolded by more capable peers; through sustained implementation teachers improve knowledge

and skills related to classroom teaching practices, as well as the ability to mentor their peers” (p. 37).

The aim was for participants to collaborate as equals, although this was not always realised in practice. If the Glazer and Hannafin (2008) model is considered as similar to the model presented by this paper, some differences would need to be highlighted. The volunteer teachers have autonomy in teaching Mandarin, but are not expected to be equals in discussions about pedagogy. Yet, in a collaborative apprenticeship there must be some experts who teach and others who learn, it is rarely totally non-hierarchical. This will undoubtedly be the case when the volunteer teachers teach Mandarin. They would be regarded as experts, while the teachers would be the apprentice.

The Glazer and Hannafin (2008) model includes an action learning sequence, where participants discuss and reflect on teaching and learning. They then collaboratively design activities, and share experiences, where peer-teachers become teacher leaders. Glazer and Hannafin (2008) argue “by supporting proximal interactions, learning is a participation-based activity where experiences are shared and formalised” (p. 37). That is, participants need places to meet, interact, and support each other in shared activities. In this project, university supervisors gain experience in mentoring volunteer teachers. Supervisors with research experience mentor and support those with less research experience, while those with greater expertise in teaching and pedagogy mentor those with less expertise in these areas.

Simultaneously, the teaching component can be viewed as an extended practicum separate from research. Viewed from this perspective, the model is not about integration, it is about collaboration to meet separate goals. There is no need for the transfer of skills to justify the project. However, skill transfer may be an additional benefit. It has also been argued that professional experience or the *practicum* serves as an apprenticeship – a period of work-based learning enabling the prospective teacher to be socialised into the profession (Zeichner & Gore, 1990).

One potential problem with apprenticeship models is how poor practice can be reproduced. Boud, Keogh, and Walker (1985) suggest school-based learning should be viewed as mentoring, rather than supervision. Maynard and Furlong (1993) identify three models of mentoring. The first, they call an apprenticeship model, the second; a competency model, and the third; a reflective model. In the apprenticeship model, the mentor acts as a role model who guides and trains pre-service or beginning teachers in basic skills. In the competency model, the mentor is responsible for instructing the student and is “in effect, coaching the trainee on a list of behaviours that are, at least in part, specified by others” (p.80). In the reflective model, the mentor is expected to encourage the student in reflective practice – the process by which teachers think and act upon all the complex information acquired, about the process of teaching. Maynard and Furlong further suggest the three mentor models should be used at different stages of beginning teacher development.

Vozzo, Aubusson, Steele, and Author (2004) argued the need for a web of mentors because one cannot provide all of the required expertise. Author and Steele (2006) explored a community of practice model that reported success with mentoring pre-service teachers, when there were collaborations from multiple participants. This project

is a further example, where a range of mentors and mentored activities in a community of practice is viewed as important, for volunteer teacher learning and teacher education. The project incorporates students with different perspectives and backgrounds. The learning environment is widened to include research skills, but it is essentially the same work-based, apprenticeship model. Reflective practice remains an essential component even if the school-based component is seen as an apprenticeship model of mentoring.

The Oxford Internships were part of a movement toward school-based teacher education that occurred in England during the 1990's. Student teachers were located in schools, where they learnt how to teach. This was an example of situated learning or learning in, and from, context. A university tutor was assigned to each school to 'inject' theory on a 'needs' basis consistent with a situated, contextual learning view of teacher education. Furlong (2000) summarises findings from three interventions, conducted as part of this 'English experiment' and found there was a consistent role for the university-based tutor. In his view, mentors in schools:

Have an important role to play in modeling practice and in coaching student teachers. Nevertheless, they are rooted in one particular context. The skills knowledge and understanding they bring to bear are, for the most part, derived from that specific school experience (Furlong, 2000: 17).

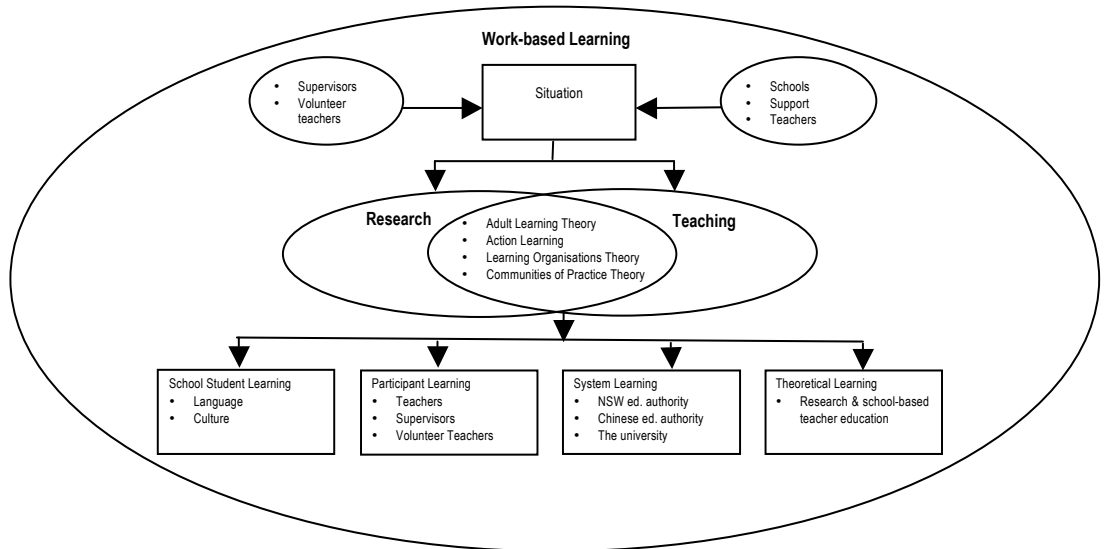
Essentially, school-based learning needs to be enhanced by knowledge that goes beyond situated experience, as it accesses a theoretical base.

The conceptual model described in Figure 6 shows how a collaborative, consultative process has shaped a research approach to teacher education. In any community of practice it is anticipated that an overlap of ideas, and a mutual exchange of knowledge, is inevitable. Anecdotal evidence from the very early stages of implementation indicates that such knowledge diffusion is evident. For example, during university discussions of volunteer teacher research projects, feedback is often provided about classroom management and pedagogy. Similarly, discussions in schools about teaching can include comments about the design and nature of research projects. Consequently, this overlap of learning goals occurs because of the situation the volunteer teaches inhabit, and this situation becomes the basis of the action learning framework.

Discussion of Issues

Melding, interrelationships, and overlap are features of action learning. The model in Figure 6 illustrates this. A debate that may eventuate is whether action research should be central to the research component. Should there be a forced connection between teaching and research, or is it enough that relatively independent goals exist in conjunction with one another? In this way, each goal is achieved through a range of teaching and research activities, each meeting the individual needs of those involved.

Figure 6 represents a western view of teacher education, where overlap between research skills and pedagogical effectiveness is possible and desirable. It is assumed teachers acquire problem solving, writing, and critical thinking skills within a research context, which can then be transferred to classrooms. The cultural differences between

Figure 6: The ‘Conceptual’ Model

western teacher education and teaching, and the dominant pedagogy the volunteer teachers will face when they return to China, may be greater than anticipated.

Ho (2004) found differences in efficacy for Australian and Chinese students studying in Australia, because of their different cultural backgrounds. He suggested the differences were due to different expectations around instruction and guidance. Conflict between identities centred on cultural norms, were also observed by Han and Singh (2007). The experiences of teachers interviewed in this study “taught them the need to develop a nationally-grounded workplace identity” (p.70). Such observations bring into question the validity of developing a model that is novel, even within current western conceptualisations of teacher education. The question that needs to be asked in future research is whether the approach embedded in this study adequately addresses the needs of volunteer teachers and their sponsors in China, or is it skewed towards the demands of Australian classrooms?

Another difficulty is the limitation placed on the research component, because it has to link with school-based problems or research questions. Kemmis and Di Chiro (1987) acknowledge some of the criticisms of action research, and make a case for this methodology as being both substantive and critical in an Australian research tradition. However, to confine students to action research would appear restrictive of their ability to engage in a much broader field of education research. Even confining them to research on pedagogical issues would seem limiting, especially since there has been considerable debate about whether education research should necessarily relate to professional practice (Shulman, Golde, Conklin Bueschel & Garabedian, 2006).

Classroom practice may not be the best focus if the acquired skills are meant to equip the volunteer teachers for broader academic careers. Presumably the same arguments apply to the research masters program, since the volunteer teachers could have studied a masters-by-coursework, that was much more school oriented. To maintain the integrity

of this qualification in the eyes of the field, it may be necessary to establish that students do more than reflect on practice. Evans (2007) argues that this approach is in danger, of again separating theory from praxis, and removing research from the lifeworld of the classroom. Ball and Forzani (2007) perceive a problem arising when those who adopt solutions to education problems derived from research do not have access to the context in which such studies were conducted. They comment:

Until education researchers turn their attention to problems that exist primarily inside education, and until they develop systematically a body of specialised knowledge, other scholars who study questions that bear on educational problems will propose solutions. Because such solutions typically are not based on explanatory analyses of the dynamics of education, the education problems that confront society are likely to remain unsolved (Ball & Forzani, 2007: 530).

Not asking questions pertinent to teaching and learning may lead to policy and systems interventions that are divorced from schooling, and are therefore unsuccessful.

Conclusion

The ‘conceptual’ model of research-based teacher education is derived from the interaction of teaching and research, as well as the generative nature of the project itself that reflects an active learning process, contextualised by the work place. The model does not concern itself with what is actually learnt. Its key elements are work-based learning, which include mentoring within a community of practice based on theories of adult learning, and learning organisations. In other words, education is viewed as a commodity to be managed. Consequently, the model conceptualises learning at a number of levels. It describes the learning of school students, of other participants in the work place (including volunteer teachers), teachers, and university supervisors. It accommodates learning that occurs within the education systems responsible for the project, and promotes an environment where practice informs theory, and theory informs practice. The model actively generates a work place environment characterised by the interaction of teaching and research, where theory and practice enhance each other.

What the conceptualisation of this model does teach us is that those responsible for project development have specific purposes and outcomes in mind, and that at least initially; purpose and outcomes are what drive conceptual development. This is not to say the voices of groups and individuals are not recognised or thought to be important. But, it does say their influence can be considered post conceptualisation. In the Asia-Pacific region, where the diversity of opinion can be great, and individual needs can be lost, it is important to recognise that if collaborative projects are initiated, even pragmatically, there is at least a site for future tailoring to individuals and their needs.

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Teacher-Student Collaboration on Designing Instructional Multimedia Materials

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Abstract

The goal of this study was to engage students as multimedia designers and technology assistants to create instructional multimedia materials at a non-technology based College of Languages in Taiwan. A case study research design was used in order to examine how a particular discipline-based faculty and its students worked together to create the co-mentoring partnerships. Through the teacher-student collaboration, the faculty's development of Technological Pedagogical Content Knowledge (TPCK) was also explored. The results of the study showed the teacher-student collaboration model provided this faculty with benefits including technology assistance, and the understanding of students' creativities, interests, and varied needs for learning. The faculty's participants also pointed out how a successful teacher-student collaboration model requires a good relationship between teacher and students, alongside students' active participation. The students found the interdisciplinary learning experience beneficial to their learning achievements.

Introduction

To be able to keep up with the rapid innovative advances in technology many institutions in Taiwan have increased their demands for a technologically literate faculty*. The problem being that such demands increase a faculty's workload, and create additional time commitments on faculty staff who are already overburdened with traditional face-to-face instruction involving large class sizes. To date, very few faculties at a College of Languages in Taiwan (referred to as CLT hereafter) consider themselves prepared to meet such demands. In contrast many students of the new millennium generally possess more advanced computer skills than faculty members do in today's classrooms. Mitra (2003) describes students as having the potential to contribute their opinions to the school and can serve as a catalyst for improving teaching and curriculum. This also serves to improve students' learning by creating opportunities for students to work with and to provide an effective technology support for faculty.

All students at CLT are required to take computer courses. Engaging students as multimedia designers and technology assistants to create instructional multimedia materials not only reduces the faculty's workload but also enhances students' learning

* Throughout this paper, the term "faculty" is used exclusively to refer to faculty members of university departments, the term "discipline faculty" to faculty members teaching in a subject area.

by providing meaningful learning opportunities. In addition, bringing faculty members together from different subject areas maximizes the expertise each can offer, and pools the talent of the faculty in order to create a meaningful learning environment for students (Thomson, 2007). In this study, cooperation among the general faculty staff, IT staff and the students will help to ensure students learn how technology is used in a particular context, while studying their disciplines. Moreover, this study creates a co-mentoring partnership to promote the faculty technology development.

Review of the Literature

As a pedagogical approach *Learners-as-Multimedia-Designers* provides students with a meaningful learning context (Hofer & Swan, 2008; Lehrer, 1993; Liu, 1998; Liu, 2003; Liu & Hsiao, 2002). Many researchers (Chuang, Thompson, & Schmidt, 2003; Koehler, Mishra, Hershey, & Peruski, 2004; Riel, DeWindt, Chase, & Askgreen, 2005) indicate using their students' technological expertise as a means to provide effective support that promotes teachers' development in technology. A review of the literature related to teacher-student collaboration on designing instructional materials is herein presented.

Learners-as-Multimedia-Designers Pedagogy

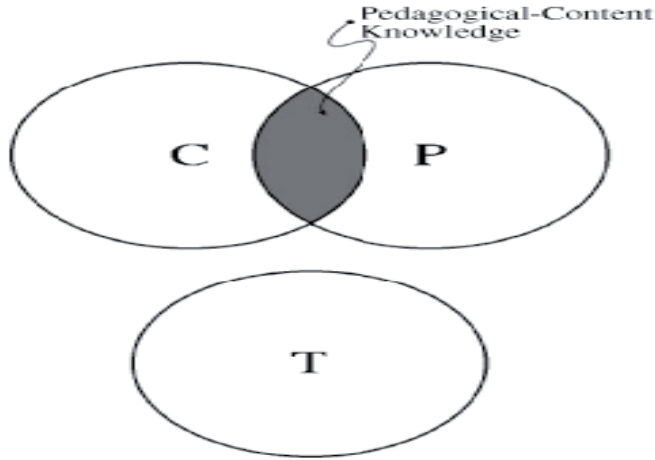
Engaging students in the role of multimedia designers not only enhances motivation, but also provides a meaningful context that can improve students' higher order thinking (Liu, 1998). Lehrer (1993) advocated Dewey's theory of learner-centered but teacher-guided education, and indicated that treating knowledge as a process of design redefined the teacher's former role of simply transmitting information to students. In another study, Liu (2003) also emphasized that design activities can promote learners' active pursuit of knowledge. The *learners-as-multimedia-designers* approach enables students to be creative in a constructive-learning process. However, designing a constructivist learning environment is a complex challenge (Liu & Hsiao, 2002). Successful implementation depends on particular elements interacting with each other – the learners, tasks, context, process, teachers, and the desired outcome.

Technological Pedagogical Content Knowledge (TPCK)

Throughout the past several decades research has placed emphasis on integrating technology into teaching, and many researchers agree traditional one-size-fits-all technology workshops are ill-suited to prepare teachers in doing this (Chuang et al., 2003; Koehler et al., 2004). Specific skills and strategies simply do not transfer well when they are not learned in situated contexts (Glazer & Hannafin, 2006).

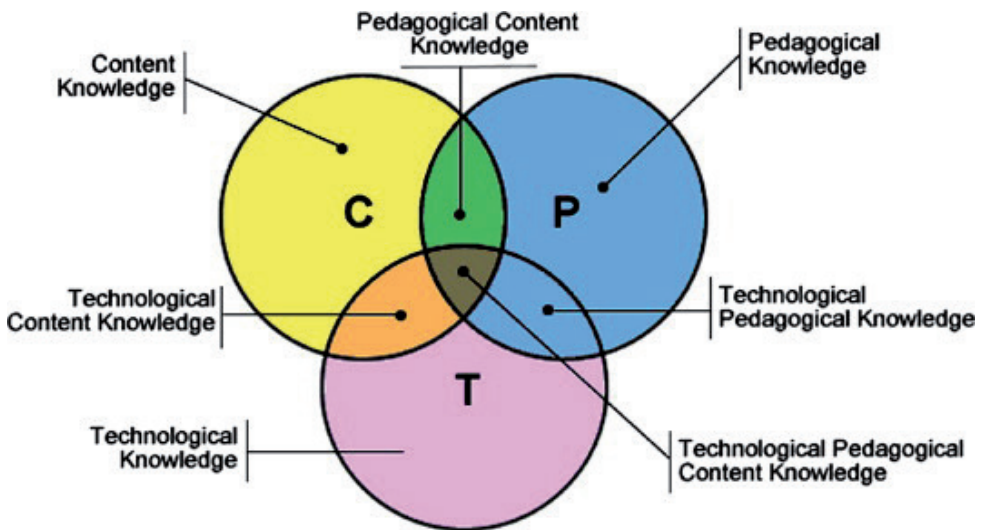
Mishra and Koehler (2006) developed a framework called *Technological Pedagogical Content Knowledge (TPCK)*, which builds on and extends Shulman's (1986) theory of pedagogical content knowledge (PCK). Mishra and Koehler discuss how knowledge of technology is often considered to be separate from knowledge of pedagogy and content arguing that knowledge about technology cannot be treated as context-free.

Figure 1: Technology Is Seen as Being a Separate and Independent Knowledge Domain (Mishra & Koehler, 2006, p. 1024)



To extend the notion of PCK with technology TPCK (see Figure 2) emphasises productive technology integration in teaching and requires a dynamic transactional relationship among the three components: technology, pedagogy and content (Koehler, Mishra, & Yahya, 2007). While some faculty members may have well-developed PCK, quality teaching with technological tools requires teachers to reconfigure not just their understanding of technology, but that of all three components. The TPCK framework could be regarded as an analytic lens for studying the development of teacher knowledge of technology.

Figure 2: Technological Pedagogical Content Knowledge (Koehler, Mishra, & Yahya, 2007, p. 742)



Xiao et al. (2005) proposed a model with students as teachers and teachers as facilitators. They presented a case study of students working with teachers, and identified some role reconstructions that occurred in the process, implying a whole new attitude toward teaching and learning. The students were more knowledgeable of technology than the teacher and became the technology experts. This process encouraged students to develop their problem solving and research skills through participation in real world projects.

In addition, Hofer and Swan (2008) explored the notion of TPCK in practice. They noted significant challenges in student-created video projects related to the interplay of content, pedagogy, and technology in teachers' professional development. Student-produced digital artifacts provided students with more authentic learning experiences, with a sense of ownership, and assisted students to engage more deeply within the subject matter.

Faculty staff members' technology integration could be conducted with the TPCK as a framework through students' participation and interdisciplinary cooperation. Students, who are often overlooked as a resource, can play important roles in the faculty's technology development.

Student's Voice in Faculty Technology Development

Much academic research testifies the importance of fostering student engagement and voice in school improvement (Cook-Sather, 2007; Frost & Holden, 2008; Mitra, 2004). Chuang et al. (2003) suggest the value of using students' technology expertise as a means to provide effective support, and to promote faculty technology development. Xiao et al. (2005) also clearly indicated that students and faculty working together, to develop and implement technology-enhanced lessons, constituted a different learning and teaching strategy for integrating technology into the school curriculum. In this experience, students and faculty shifted roles resulting in augmented learning outcomes for both. This new strategy changes the conception that faculty must undergo considerably longer training in order to master computer skills before applying them to their work. Instead, the extensive involvement of students in collaboration with faculty staff will be an effective way to foster technology skills of the individual faculty. Therefore, it can be argued that using students as co-creators and co-partners of curricula can move schools toward realizing a learning community (Chuang et al., 2003).

Establishing a Teacher-Student Collaboration and Co-Mentoring Partnership

The inclusion of mentoring and collaboration has served important functions in education, and has become a commonly recommended strategy to promote a faculty's technology development (Musanti, 2004). Several universities and schools within the United States of America have experimented with providing student technology mentors to staff. The findings in these studies indicated student mentors are an effective technology resource and support system (Beisser, 2000; Chuang et al., 2003; Leh, 2005).

Chuang et al. (2003) indicated how a successful partnership between faculty staff and students includes open dialogues, collaborative relationships, mutual benefits, and the establishment of a learning community among the group of student mentors. However, mentoring does not exist in a vacuum and will be influenced by the context. There are several factors affecting the development changes in the mentoring relationships such as mentor and protégé characteristics, types and frequencies of interactions, and supportive elements (MacArthur & Pilato, 1995).

In summary, with a co-mentoring partnership faculty members and students work together to form a new culture of learning. As a significant catalyst for change, a co-mentoring partnership promotes the development of new relationships between faculty staff, students, and institutional structures (Mullen, 2000).

Research Methodology

A case study research design was used to guide this research exploring CLT non-technology discipline faculty participants' experiences while they worked with students on designing multimedia course materials. It also examined the students' perceptions of such a learning experience. The researchers attempted to describe a rich teacher-student collaborative learning culture, transcending the one-size-fits-all approach that had failed to facilitate faculty technology development. The following research questions were investigated in the study:

1. What are the perceptions of the faculty, regarding student-generated multimedia artifacts, through teacher/student collaboration?
2. What are the perceptions of the faculty regarding their Technological Pedagogical Content Knowledge (TPCK) development when working with students to create multimedia instructional materials?
3. How does the teacher-student collaboration model affect students' learning?
4. What factors affect the teacher-student collaboration project when creating the multimedia instructional materials?

The Site and Participants

This study was carried out at a College of Languages in Taiwan. There are five language departments specialising in English, French, German, Spanish, and Japanese. Participants in this study included two sections of a computer course (50 students in each section), and two staff members. Students in Section A had a major in English, and a minor in German. Students in Section B had a major in German, and a minor in English. Staff member A had 15 years of German teaching experience, and 6 years of experience incorporating technology into teaching. She had taught the students in Section A for three consecutive years. Staff member B had 16 years of Geography teaching experience, and 10 years of experience incorporating technology into teaching. She had taught the students in Section B previously. IRB approval was sought, and the participants signed the consent form to indicate their voluntary participation in the study. Students formed teams and were assigned to either Staff member A or B. The students participating in the study were expected to work closely with their staff member.

Participation within the study was viewed as a great opportunity for the students to put the technology knowledge and skills gained from the computer course into real-world use, when helping the staff members to develop multimedia instructional materials.

Procedures

This study was conducted during the second semester of the 2009 school year (February - June). In the first stage of the course, students learned different software programs; PhotoImpact (graphic software), Movie-Maker (video-editing software), Goldwave (audio-editing software), and Microsoft PowerPoint (presentation software). Meanwhile, the faculty provided students with different resources related to each of the subject matters. Each student team picked one topic of interest and started to brainstorm the contents for which they would create the multimedia materials. In order to track the students' planning progress students were asked to post their progress status and their discipline faculty member's comments on the course WebCT each week.

During the second stage of the computer course a four-phase design model of planning, design, production, evaluation and revision, was introduced to the students who were then required to follow the same model. Students were expected to meet with their discipline faculty, staff member every week. In order to work closely with the student teams to facilitate the collaborative process a discussion board on the course WebCT was created, and the students were required to post a reflective journal every week reporting their collaborative progress and relationships. To help students gain explicit knowledge of what the real-world multimedia instructional materials look like, some well acknowledged samples were demonstrated on the course WebCT.

Data Collection

Creswell (2003) and Yin (2003) pointed out how the use of multiple data sources in case studies would allow for triangulation of data, enhancing the validity of the study. Therefore, multiple data collection methods including; in-depth interviews of faculty participants; end-of-term questionnaire; observational field notes; and students' multimedia artifacts were employed throughout this study in order to obtain authentic and rich information and to facilitate appropriate data triangulation.

Data Analysis

Creswell (2003) outlined that the process of data analysis in qualitative research consists of preparing and organizing the data for analysis, reducing the data into themes through a process of coding and condensing the codes, and representing the data in figures, tables, or a discussion. The researchers first transcribed interviews, typed the field notes, and sorted the data into different categories to help with the emerging themes and/ or or patterns. Transcripts were then returned to the faculty participants for member checking to confirm accuracy and to generate any further data from their comments and reflections. The findings were reported in a qualitative narrative.

Results and Discussions

Combining the data analysis results from multiple sources, this section explores the influence on both the teacher-student collaborative model on the faculty's technology development, and on the students' learning outcomes.

Faculty Barriers to Creating Multimedia Teaching Materials

Both faculty staff members had intermediate-level technology competence. They frequently used e-mail, word processing, internet research, and PowerPoint presentations within the class. They also held some knowledge of editing graphics, sound, and video, but still need help from the technology staff in these areas. Results indicated that they were confident about using computer technology during instructional activities, but thought their technological competence in the design of instructional materials could be improved. When they first started designing multimedia-teaching materials, both faculty staff members were provided training sessions by the school. Following these they attempted to design simple instructional materials using Microsoft Word or PowerPoint, helped by the technology staff. Gradually, with several modifications, the contents of the programs were perfected. Faculty staff member A commented, "My technology competence has improved through trials and errors. It needed time."

Both staff thought the use of technology would help students' learning, and that creating the necessary multimedia teaching materials was a challenge. Because of the rapid development of technology, they are not always equipped with enough time to research, prepare, and create, multimedia-teaching materials. From interviews, it was ascertained that the two staff were prepared to spend extra time working on designing the multimedia teaching materials. They both emphasized their need for more time in order to be able to master the skills. Staff member A said; "Designing a full-year course takes up all my free time, even in my summer and winter vacations. A lot of the time I just feel powerless, for it takes too much of my time and energy." The faculty staff member B pointed out how "the process of designing digital or multimedia teaching materials is really time-consuming. I can only try to do my best with so little time."

Faculty Opinions about the College's Support for Faculty Technology Development

The two faculty members expressed appreciation of both the opportunities and the support provided by the college for the faculty's technology development, which included computer software workshops, one-on-one technician service, and work-study students. Yet despite these efforts these resources have still not fully met the faculty's needs and expectations. For example, faculty staff member A pointed out how although the technicians were computer professionals, they knew little about teaching and the language being taught, and therefore some content-area related problems could never be addressed by these technicians. She had thought about hiring students from other departments with computer skills, but then gave up the idea because those students did not understand German. For faculty staff member B her concern was that the workshops provided by the college did not really help her in creating teaching materials. Many times she had found herself forgetting what she had previously learned, because she did

not have the opportunity to use those skills frequently enough, and the skills covered within the workshop were not relevant to her requirements. The support from the work-study students that was supposed to reduce the burden on the faculty was found to be unhelpful as the students did not always understand what they needed to do, when helping creating the teaching materials.

Although the technical support of the college did not seem to meet the needs of individual faculty members, it was still considered necessary by the faculty. However, in order to effectively provide support, the college would need to address the following problems: the shortage of technical personnel, the technicians possessing technical expertise but lacking content knowledge of the professional, the lack of training given to the work-study students and how to achieve maximum effectiveness with the smallest budget.

The Effects of Teacher-Student Collaboration Model and the Multimedia Material Products

The two faculty staff members expressed positive attitudes toward both the technical support from the students, and the quality of the multimedia materials produced through teacher-student collaboration. Faculty staff member A said, "The final products were helpful for me, and so was the course, in terms of both the quality and the quantity. Students also developed a sense of achievement by sharing their products with others." Faculty staff member B also stated, "In making the teaching materials, student's creativity is helpful in extending, and enriching the content of the materials."

For most of the students technology is an integral part of daily life. They often have more knowledge of technology and are more proficient in its use than their teachers. As faculty staff member A said, "Students learn technology quickly. When I told them what I expected, they used the multimedia technology they had learned in their computer class to present the product. I had thought I would need to spend more time than the students did. It really saved me so much time." Faculty staff member B also shared the same opinion by stating "Students' help in creating multimedia teaching materials really provided me with strong technology support. It is impossible for me to create different kinds of multimedia products in a short time."

In the past, teachers designed multimedia-teaching materials based on their own views which did not necessarily meet the individual student's needs. Moreover, sometimes it was not an easy task for teachers to use their computer skills to present their creativity and thinking in the chosen teaching materials. The students' assistance helped the faculty members to master the challenges presented by technology, and the staff found the discussions with the students, regarding the use of multimedia in the presentation of lessons to be very helpful. The teaching materials created with the students' help were richer and more diverse. As a result of teacher-student collaboration, both of the faculty members transformed their professional content knowledge, and learned to infuse multimedia technology of various forms into the curriculum. Faculty staff member A stated, "During the process of collaboration, I always ask students, as though I was a technology novice, how they perform some of the functions. I learn a great deal of technology from students." Faculty staff member B said "I enjoy the time

I spend learning technology skills from my students. They are patient and teach me step by step. In contrast to the technology training, the way the students' share their technology expertise is what I want. The technology skills I learned from students are not abstract as the students help me to apply them in creating my teaching materials."

They also pointed out the positive effect on student learning, gained by their participation in producing the multimedia materials. Faculty staff member A indicated, "During the process of producing multimedia materials students experienced learning by doing. They collected data, analyzed the German texts (in terms of vocabulary, phrases, grammar, and translation), utilized their expertise and professional knowledge, and presented the final products. They learned through real-world practice." Staff member B explained how "When working on these assignments, the students had to repeatedly review the information and media related to the course. It indirectly transformed the student's short-term memory into long-term knowledge."

The end-of-term questionnaires showed 80% to 90% of students thought the collaboration project helped their learning in both computer, and subject area, courses. The students specifically acknowledged the multimedia assignments helped them gain a better understanding of the topics in the subject course, as well as the applications of the computer programs, improving their ability of independent learning through problem identification, analysis, and resolving. Although student's creativity in producing the multimedia materials was highly praised by faculty staff members, the faculty's participants also pointed out the technological expertise itself was not a sufficient factor in the production as the understanding of the subject contents took time. The teacher-student collaboration project only lasted for one semester, and some student teams were not able to demonstrate depth in their products due to the limited discussion time with their discipline faculty, and limited knowledge of the subject content.

The Success Factors of the Teacher-Student Collaboration Project

When examining the data from the various sources within this study, the following factors were identified as key success factors for the teacher-student collaboration model:

- Non-authoritarian, teacher-student relationship
- Student-centered learning
- Teacher playing the role of a facilitator
- Students self-selecting the subject topics in the collaboration model
- Good teacher-student interactions
- Mutually set goals between teachers and students
- Students' positive attitude in participation
- Students' ability to understand the subject knowledge, and their attentive working styles in producing the materials
- The collaborative working time spent between teachers and students.

Faculty staff member A realized she should set aside the authority role of being a teacher, and instead see herself as a partner to guide the students: "When working with students, teachers must eschew traditional teacher-student relationships and

become the students' partner in order to guide them and provide them with resources. Students are the center in this relationship and we must inspire them to talk." Faculty staff member B also expressed a similar attitude and described how "differing from the traditional teacher-oriented mode of teaching, this collaboration model focused on students themselves, and group work. I first gave the students a general direction and description of the required tasks. Then the students would work independently, including the collection of details and data, reading and digesting the materials, group discussions, and finally producing the materials. This is student-oriented learning."

The faculty participants also indicated how a successful collaboration requires active participation, and a positive attitude toward the assignment on the student's part. Frequent and effective communication with the faculty, while setting goals mutually with the faculty, was also mentioned as important for the success of the project.

The questionnaire showed 70% of students indicated the level of their interest, in a particular course topic, affected how much time they would invest into the work on that topic. Therefore, the fact that the students were allowed to choose the course topics they would like to work on, helped boost the students' motivation and engagement, and could enhance the quality of the students final products.

Benefits to Students' Learning Brought about by the Interdisciplinary Collaboration

Being their first interdisciplinary collaboration project, both faculty members provided positive comments on the experience, and believed the experience was helpful to student's learning. Faculty staff member A said, "I saw the change in students' learning. Multimedia designer strategy helps students overcome the passivity of the traditional classroom, and makes students take more responsible for their own learning." Faculty staff member A also indicated it would be impossible for her to create such a variety of teaching materials in a short time, and the power of the student's inventions impressed her. She had the opportunity to see the different interests, and the diverse ideas of the students, within the multimedia products. This helped her to better understand, the needs of her students, and to be prepared to incorporate more appropriate and customized teaching materials in her future course designs. Faculty member B believed through this single assignment, students were exposed to the various and diverse learning resources, across the two disciplines, which helped them efficiently meet the learning outcomes of both courses. She explained how "Multimedia design provided an opportunity for students to choose their own paths on a topic based on their individual abilities. Some students struggled with ways to represent their knowledge. Some students demonstrated more thought, and devoted more effort. They were motivated by the variety of media format, and they felt that this made the abstract content easier to understand."

The questionnaire showed 80% to 90% of the students found learning in such an interdisciplinary collaboration fashion to be effective, and although it may have required a lot of efforts; the experience was rewarding. Through this interdisciplinary collaboration experience, the students not only achieved meaningful learning but also better understood the hard work their teachers had to put into the production of course materials.

The collaboration between the discipline faculty staff and the computer course

instructor included: discussions about the course curriculum and instructional materials, at the beginning of the semester. They also held meetings continuously throughout the semester to discuss the difficulties students were faced with when developing the multimedia materials, and to provide technical support that could help them overcome these difficulties. The following are selected comments from the student's questionnaire:

Student A from Section A: *"I learned two subjects at the same time and had better understanding of the course content through producing the multimedia materials."*

Student B from Section A: *"I was inspired to put in greater effort to study German."*

Student C from Section B: *"It is just like hitting two birds with one stone. I not only learned computer skills but also reviewed what I had learned in the subject course."*

Student D from Section B: *"I learned a lot through this assignment (in terms of both computer skills and professional knowledge). I also realized that it is very difficult and time-consuming, in addition to being creative and patient, to make the teaching materials."*

As for the assessment of the students' products, it was conducted formatively. The students completed mutual evaluations for each other's products. They received feedback from their discipline faculty, and the computer instructor, in order to keep improving their products. This process went on until the end of the semester, when the students then put their products into showcases and received the final evaluation and feedback from their fellow students and the faculty members.

Implications and Recommendations

Based on the mutually beneficial effects of the teacher-student collaboration model, this section contains discussions of the educational implications of this study and the recommendations for the future incorporation of such a model.

Increasing Students' Involvement in Instructional Material Production

The results of this study demonstrated how participating within the production of multimedia instructional materials brought about students' better understanding of the subject course contents, increased their motivation in learning, and helped them with higher-order thinking in a meaningful learning context. These results supported the constructionist paradigm proposed by many researchers, and provided examples for future studies as to how to engage students in real-world practice, creative thinking, and independent learning. The findings of this study will also be helpful to the faculty support mechanisms in universities around the world. Students who have had previous experience in teacher-student collaboration projects would be better work-study candidates as the faculty will find work-study students are more capable of helping them, and meeting their needs.

For other universities and colleges like CLT, where taking a computer course in learning various software applications is required by every department, if an IT department can work with faculty members without these skills to design the assignments of the computer course relevant to the course contents of other subject areas, it will not only help students better understand the contents of both courses, but also provide students with an authentic and real-world working experience.

Conclusion

This study combined the advantages of engaging students as designers (Hofer & Swan, 2008; Lehrer, 1993; Liu, 1998; Liu, 2003; Liu & Hsiao, 2002), and established collaboration between faculty and students, by employing students to infuse technology into the curriculum (Chuang, Thompson & Schmidt, 2003; Koehler et al., 2004; Riel, DeWindt, Chase, & Askgreen, 2005). The rationale behind the teacher-student collaboration is the desire to effectively integrate technology with teaching, requiring a dynamic, transactional, relationship between the three key components: technology, pedagogy, and content. Through this pedagogy, faculty members will be able to create multimedia instructional materials which prove to be an innovative strategy worth being adopted by higher education institutions.

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The Pacific Circle Consortium for Education

The Pacific Circle Consortium is an organization dedicated to the improvement of teaching about peoples and nations within and around the Pacific Ocean, and in Asia. From 1997 to 2004, the Consortium was an official program of the Centre for educational Research and Innovation of the Organisation for Economic Cooperation and Development (OECD/CERI). Currently, the Consortium is an independent organization.

The purposes of the Pacific Circle Consortium are to:

- Share ideas, resources, information, material and personnel among Pacific and Asian countries and educational institutions;
- Promote internationally co-operative research and development in education; and
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The membership of the Consortium is made up of individuals from many institutions. Recent membership is drawn from countries as diverse as New Zealand, Australia, Samoa, Fiji, Japan, Malaysia, Vietnam, South Korea, China, Hong Kong SAR, Taiwan, Thailand, the United States, Canada, Mexico, Ecuador, Latvia, and the United Kingdom.

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