
Cooperative Education Through a Large Scale Industry-School Partnership

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Abstract

In most of the advanced economies, students are losing interest in careers especially in engineering and related industries. Hence, western economies are confronting a critical skilled labour shortage in areas of technology, science and engineering. Decisions about career pathways are made as early as the primary years of schooling and hence cooperation between industry and schools to attract students to the professions is crucial. The aim of this paper is to document how the organisational and institutional elements of one industry-school partnerships initiative — The Gateway Schools Program — contribute to productive knowledge sharing and networking. In particular this paper focuses on an initiative of an Australian State government in response to a perceived crisis around the skills shortage in an economy transitioning from a localised to a global knowledge production economy. The Gateway Schools initiative signals the first sustained attempt in Australia to incorporate schools into production networks through strategic partnerships linking them to partner organisations at the industry level. We provide case examples of how four schools operationalise the partnerships with the minerals and energy industries and how these partnerships as knowledge assets impact the delivery of curriculum and capacity building among teachers. Our ultimate goal is to define those characteristics of successful partnerships that do contribute to enhanced interest and engagement by students in those careers that are currently experiencing critical shortages.

Keywords: Industry-school partnerships; curricular reform, knowledge transfer, professional education, transforming schooling,

Introduction

Although this study is situated in Australia, it concerns a compelling problem faced by many countries seeking to ensure that their economy is competitive in a knowledge age. New knowledge including the processes that creatively transform and adapt knowledge for

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deployment in economic activity needs to connect with those organisations involved in education in new ways. Policy initiatives are encouraging educational institutions such as schools, colleges, universities and the community to collaborate to ensure that educational organisations are creating, acquiring and transforming knowledge in ways that prepare their students for the new economy (Kapitzke & Hay, 2009a, 2009b). In a global knowledge economy, knowledge that is critical for economic sustainability is assumed to move through networks that link key production nodes in global production chains (Castells & Cardoso, 2006). The challenge is to ensure that this knowledge is made available and influences educational practices. The aim of this paper is to analyse the operation of a partnership program in which a range of industries in the minerals and energy sector have collaborated with over 30 secondary schools across Queensland to provide work-integrated learning experiences that are aligned with economic priorities.

In 2004, the State Government of Queensland, as part of an overall strategic initiative to build a knowledge economy instigated the Gateway to Industry Schools program. The Gateway initiative was a key policy strategy aimed at knowledge transfer and featured 1) a public system-wide approach, 2) multiple sectors (i.e., state, Catholic and Independent schools) and global industry partners, and 3) an inclusive focus on student learning including for those transitioning into higher education or directly to skilled employment. The initiative was a workforce development strategy to support the long-term growth of a highly skilled workforce by providing opportunities for industry and schools to collaborate on the delivery of relevant and contemporary learning experiences. A range of activities were designed to support students and teachers to explore work learning opportunities complementing formal school learning.

Gateway partnerships represent a significant deviation from traditional models of school-industry partnerships especially through the existence of an overarching organisational structure. They comprise 1) a system-wide approach, 2) multi-sector and global industry partners, and 3) an inclusive focus on student learning including for those transitioning into higher education or directly to employment (Hay & Kapitzke 2009). Significantly there exists a formalised partnership between the Queensland Resources Council, the peak industry association with responsibility for strategic labour force planning, and the Queensland Government through a statutory authority, the Queensland Minerals and Energy Academy (QMEA). The QMEA coordinates and supports activities in more than 30 Gateway to Industry schools associated with the project. Funding and in-kind support is provided by both government and industry.

Theoretical Framework

Our analysis is informed by program theory (see Suchman, 1967; Weiss, 1997). Suchman (1967) discussed two kinds of reasons for an unsuccessful program: failure of the program

to put the intended activities into operation (implementation failure) and failure of the activities to bring about the desired effects (theory failure). Program theory provides explicit explanations of how change processes in an intervention occur and how they contribute, or do not, to desirable outcomes. It attempts to articulate the links between goals, activities and outcomes. Proponents argue that program theory incorporates a theory of change and a theory of action (Funnell & Rogers, 2011). Theories of change attempt to explain how stakeholders appreciate the drivers for change and engage with the intervention while theories of action represent how different strategies are implemented to facilitate the change.

Program theory has appropriated the logic model of evaluation. The logic model (Weiss, 1997) provides a way of representing the mechanisms that lead to change and action. Hence the logic model provides a lens for examining the Gateway initiative implementation and analysing its strategies and outcomes. Insights into the overarching design of the Gateway initiative as it unfolded has been explored through retrospective mapping and reported elsewhere (Hay & Kapitzke, 2009; Kapitzke & Hay, 2011). However, the focus in this paper is on the early phases of implementation. The model thus enables us to describe and analyse the activities and outcomes of a program (e.g., Cooksy, Gill, & Kelly, 2001). The outcomes can be described in terms of short-term outputs that are associated with the activities embedded in the project. Such outputs might be new curricular materials, teacher professional growth or resources that facilitate student learning, student placements for School-Based Apprenticeships and Traineeships (SATs) and work experience placements. The longer-term outcomes are seen in the impact of these outputs on the engagement and career trajectory of students including student post-school destinations. A central activity of the project that we explore in this paper is work-integrated learning.

Methodology

This study adopted a case study approach. Although 20 schools and training organisations from a possible 111 were selected across six Gateway School programs, we concentrate this report on four schools associated with the minerals and energy industry. Schools were selected as representative of the three sectors providing school education in Australia (government, independent and Catholic geographical location (e.g., rural or urban) and demography. First, a detailed analysis of documents relating to the establishment and development of each of the Gateway Schools programs (e.g., partnership agreements, policy documents) and socio-demographic data for each school participating in the study was undertaken. These data were entered in a matrix identifying key features and the relationships between the features. Second, a semi-structured interview (40-60 minutes) was conducted with the project managers involved with the establishment of the minerals and energy Gateway School project to identify governance structures, roles and relationships established between schools and workplaces within the project, government and industry support, strategies for facilitating knowledge sharing and perceived benefits and limitations. Third, schools were visited and semi-structured interviews (60-120 minutes) were conducted with key stakeholders (Principals, Teachers). Resources and documents relevant to each school

site were also examined. Analysis of data followed normal qualitative analytical practices with transcripts being coded and themes identified abductively informed by relevant theoretical frameworks (Saldaña, 2009). Coding was undertaken by the team of researchers using Nvivo and differences in codes and thematic categories reconciled by discussion (e.g., Bazeley, 2007; Richards, 2009).

Findings

We profile four case schools that we call: Dragline State High School (DSHS), Black Rock State High School (BRSHS), Western Plains College (WPC) and Metropolitan College¹ (MC). Table 1 provides a profile of the activities that these four schools including those curriculum initiatives that are aligned with the Gateway project. The two state high schools are centrally located in mining districts whereas the two colleges are located in large economically diverse cities. These four schools are part of a network of schools aligned to the Minerals and Energy Project and spread throughout the state. Networking among participating schools is limited but stronger networks, brokered by the Minerals Academy exist between major industry partners and individual schools through the various activities supported by the QMEA.

Regional project coordinators work closely with each school to broker activities, share information, develop curriculum materials and courses and provide moral support.

Thus, the partnerships are to some extent instigated and maintained by a top-down approach by the QMEA. The QMEA coordinates the partnerships through four “hubs” which correspond to key mining regions across Queensland. Queensland High Schools located within these hubs are partnered with participating companies in the minerals and energy industry. These include large scale multinational corporations with operations in Queensland including BHP Billiton, Rio Tinto, Anglo Coal and Xstrata. Regional project coordinators work closely with each school to broker activities, share information, develop curriculum materials and courses and provide moral support. Limited financial support for activities conducted by partnership schools is also provided from the Academy. The strength and depth of the partnership networks vary depending on a wide range of factors including the level of personal commitment of teachers at the school level, time available for teachers to commit to project activities, geographical location of the school including proximity to mining activities, and the socio-demographic characteristics of the school population. For instance, Dragline State High School is in a relatively small town and solely exists to service children of people who work in the local coal mines and related support industries. There is a relationship where support in terms of resources and direct teaching by mine staff is significant. In this case, vocational education and training (VET) for some students was delivered by a technical-trades person from the partner mining company during one day per week. Furthermore, knowledge transfer in this instance was reciprocated through close contact among key stakeholders namely frontline technical staff in the major mining companies and teachers in the school.

¹ High Schools provide for students in Years 8-12 (approx 13-17 years of age). Colleges provide both primary and secondary education usually Years 5-12. Colleges are non-government schools.

The findings are discussed in terms of outcomes for three sets of stakeholders: teachers, students and the local community. In this phase of the study, outcomes for industry as the fourth stakeholder were not explored. Many of these activities are core business and not unique to Gateway schools. Indeed, teachers at the Gateway schools are often uncertain which activities are direct consequences of partnerships with industry or the outcome of other initiatives. This uncertainty suggests that initiatives emerging specifically from the Gateway schools program often articulated with pre-existing programs in a way that made the distinction between the two, and thus the unique contribution of Gateway schools project, difficult to ascertain. For instance, the VET coordinator at Dragline explained how her school became part of a network associated with minerals and energy in the Gateway program:

every area was experiencing skills shortages and so they realised then that the only way that they're going to fill it is to be putting programs in schools, it's too late to wait for kids to just do whatever they were doing at school, come out and hopefully go into a career in the mining industry or the energy industry.

Schools have been encouraged to engage in many projects involving school-industry partnerships, some of which are federally funded and some state particularly in relation to trade training (Hay, 2009). However, schools are assuming a role that is unfamiliar and for which few teachers and school leaders have been trained to broker and manage. The teaching of content relevant to most of the trade certificates generally requires specialist trade or industry experience. The implication is that schools are operating in dual systems offering trade or workplace training (VET) as well as traditional school curricula (Higher Ed).

Table 1
School profiles and partner industry related activities.

School name	Students	Major Industry Partners	Workplace relevant courses/units
Black Rock SHS	524	Coal mining industry* BHP Billiton Mitsubishi Alliance Anglo Coal	1. Get Set for Work 2. Australian Brick & Blocklaying Course 3. Construction 'Blue' Card 4. Generic Induction Program 5. Advanced Skills Training program for high quality trade students 6. Certificate I & II in Resource & Infrastructure Operation (RIO) 7. Certificate II in Workplace Practices Context based School subjects Year 11/12 Physics unit
Dragline SHS	187	BMA (BHP Billiton Mitsubishi Alliance)	8. Certificate I & II in Resource & Infrastructure Operation (RIO) 9. Certificate II Engineering (Mining focus) 10. Integrated mathematics science curriculum 11. Context based school subjects Engineering studies
Western Plains College	740	QMEA	12. Cert I Engineering
Metropolitan College	1250	QMEA	Context based school subjects Engineering Technology 13. Engineering Technology 14. Earth Science

As noted above, there is a regional strategy linking schools to the various mining areas identified in Academy documentation. New schools were brought into the project as requested by industry partners in response to the growth areas of the minerals and energy industry.

Outcomes for Teachers

Teacher Capacity Building represents a short-term outcome, but one which is regarded as a key outcome for Queensland's industry-school engagement strategy. Through teacher capacity building initiatives the various Gateway projects seek to align curriculum content and pedagogical practices to ensure that learning outcomes are congruent with the human capital needs of particular industries. Two subthemes could be identified from the data: (1) re-engaging teachers with contemporary subject area knowledge in new ways, and (2) acquiring practical industry-relevant skills.

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Reengaging: The interview data pointed to an underlying assumption that teachers were out of touch with potential applications of their subject knowledge to authentic problems. To address this deficiency, administrators saw a need for teachers to engage in some learning activity or experience that linked school curriculum to knowledge applied in workplaces. For example, several key school principals or project leaders identified the importance of sending teaching staff to industry sites to renew their professional knowledge with

applications for their teaching area. One school administrator from Metropolitan College, an elite non-government school, noted the importance of providing opportunities for teachers to attend camps organised by the Project:

So to go on a camp, to have your again, your feet on the ground in a mine site, in a truck, in a ute, staying, living on campus, talking to engineers about their pathway from school to uni and then taking those stories back to students is really powerful and we know that our teachers are learning real stories is the most powerful tool really. (DPMC)²

Camps were held annually at a major mining site.

The goal valued in this activity was to enable teachers to provide prospective engineering students with insights into the life of an engineer and the relevant job prospects and pathways. This orientation is aligned with likely career destinations of many students at this particular private school. The interviewee continued elaborating on the theme and the advantages of participating in camps:

Where we do benefit, and we need to continue to benefit, is the gap between being a teacher in a classroom and pointing in directions for students and then where does your knowledge stop and being an expert on those pathways and what it's like to be in industry is the challenge for many teachers and young teachers.

² Deputy Principal
Metropolitan College

Practical workplace skills: A second theme emerged in relation to participation in the Academy Professional Development Workshops. The benefits of participating in this program were clearer for some participants than others. For instance one Academy Project Officer responsible for coordinating a number of schools in central Queensland emphasised the practical industry based knowledge that teachers gained in the workshops:

We are sending our manual arts teacher and so he goes to that week and they are going to take him through the workshops and say this is what our industry is and this is when we talk safety, this is what it is. So that when he comes back to his classroom, "You need a c-drive down and the button up, why?" That's why he's on site, that's the requirement, that's the standard and that's ... the benchmark. So what we do in the school should reflect what is happening in the industry. [Academy Project Officer]

The rationale was to up-skill teachers, particularly "young and new teachers", on competency based assessment and how to plan for it. The importance of linking teachers with industry was seen as a key activity and actioned through "industry evenings": "We bring all the industry in and we say to teachers to come along and these are people in your neighbourhood out here, talk to them about what they do" (Academy Project Officer). This represents a shift in educational responsibility for mainstream high school teachers assuming a greater role in the provision of vocational education and workplace training and liaising with local industries to facilitate this reorientation.

At Western Plains College, greater curriculum emphasis was placed on engineering and construction rather than the core minerals and energy focus that the partnership was intended to foster. This school was already committed to partnership programs in Manufacturing and Engineering with large local manufacturers as they were located in an agricultural geographical location. The responsible staff at the College reported that they felt peripheral to the project in part because of irregular contact with the regional Field officer whose focus was on the minerals and energy industries. Thus they remained unclear about the aims of the QMEA and the role of the school within the project. Hence, the focus at that school was on upskilling teachers in academically oriented engineering subjects. The Gateway coordinator at the school admitted how the school capitalised on workshops provided by the Academy: "we are doing Engineering Technology as a subject next year. So, three industrial tech teachers have gone down for a two-day in-service in Brisbane, which was wonderful, absolutely wonderful." However, the experience was discussed in conjunction with a range of other professional activities including upskilling senior mathematics teachers without acknowledgement or awareness that these in-service workshops were specifically instigated as part of the Gateway initiative targeting the mining industry. It would seem that teachers and schools took advantage of a range of initiatives without clearly recognising that the activities were associated with the partnership arrangements. Thus, in those schools not geographically located in the minerals and energy industry areas, such as Western Plains High School, and Metropolitan College the partnership assumed a minor but important role in building teacher capacity in advanced academic subjects. In those schools closely associated with the minerals and

energy industry the outcomes contributed to teachers' knowledge but also students benefited from direct contact with industry personnel with a greater focus on vocational education.

Outcomes for students

Emerging outcomes seen to be relevant to students included: (1) Authentic Career Experiences (2) Industry readiness, (3) scholarships and (4) new curricular resources.

Career Experiences: Affirmation of career directions was a theme that emerged in several interviews. The relationship and activities of the mining Academy was raising the profile of mining and mining related occupations. One administrator saw this as of mutual value to the economy and to the profile of the school.

I can see the benefit to Queensland and I can see the benefits to us I think, to get the boys thinking about their careers. As I said, you know the long term strategic thinking we want the boys to do. (Deputy Principal MC)

The opportunity for students to participate in the mine camps was seen to have limitations in that only a small number of students from each school could attend but at the same time for those who could it was deemed very useful:

the best and most genuine camps around, in the state probably in any profession because you're just not doing menial tasks and they make a big effort to get you connected with a real engineer in a real job. ... but those boys will often come back and say the words directly to me, "Sir I can't wait to finish now and get up there", you know they really – they love it and the experience (Deputy Principal MC)

Providing opportunities for students to "connect to a real engineer" was singled out as the major benefit of the program for one school.

For this school, the perceived benefits related to the practical experiences of working on a mine site in a variety of roles and engaging in authentic problem solving with the mine staff. Providing opportunities for students to "connect to a real engineer" was singled out as the major benefit of the program for one school. Students attending Metropolitan College are unlikely to have had much experience of workplaces, especially remote mining operations and were generally oriented towards professional careers. Although participation was by a very small number of students from this school, the experience was lauded as authentic and relevant to the needs of those students who were able to participate.

Similar sentiments were expressed by the Head of Department at one mining town high school in relation to undergraduate engineers:

[the mining company] does their vocation programme so in their second year at university they can come here and work in their Christmas holidays and get you know some money and see what it's like and so it's, I guess it's opening up their eyes to what is out there. (DLSHS)

Industry ready workers: In Australia, school students can complete a trade apprenticeship whilst they are still at school. This is known as an Australian School-based Apprenticeship (SBATs) scheme. The Australian Qualifications Framework, managed federally, authorises trade qualifications. Apprenticeship training is recognised through the award of Certificates from level 1-4. A Certificate 1 is a base level qualification that assumes graduates have knowledge and skills of a particular topic for initial work and/or community engagement. In one school, the principal saw school based apprenticeships as pivotal to the relationship with local industry with spinoffs for social stability in the local community.

They're getting quality training. Quality apprentices that are really well prepared for the mining industry and the advantages for them is that you know out here accommodation and workforce, if they can secure these young guys now, keep them here in town, they don't have accommodation issues, they have families who are living here, the kids want to stay here helps to sustain the town. [Principal BMSHS]

Opportunities to do school based apprentices at remote sites and for extended periods of time were valued by one school because of the continuous experience albeit with some concerns about providing a duty of care to young students being away from home in an adult environment:

definitely school based apprenticeships because we have kids who do school-based apprenticeships in Longreach, so they need to do 48 days a year and they don't do it one day a week, they do it in blocks when they go home. (Teacher WPC)

It was also claimed that school had introduced courses in response to claims from industry that first year apprentices struggled with fitting into the work place. One Head of Department described her program:

So this course is a work preparation mine readiness course that gets them ready for the industries. So by the time they leave that course, they are completely conversant with toolbox talks, safety shares, risk assessments, standard operating procedures, communication systems.

Provision of industry experiences also helped develop generic understandings of workplace etiquette and practices. Outcomes related to issues around safety, work practices, and broad understanding of what is expected of workers in a mine site were emphasised by the teacher at Black Rock SHS who argued that industry claimed that these pre-apprenticeship experiences were valued by industry as a preparation for work — “nurturing grounds for the apprentices for the mines”. It was also reported that students attending the partnership school were given priority in the appointment of new apprenticeships.

Scholarships and prizes: Although limited in scope to a handful of students, scholarships were also identified as an outcome that supported students to pursue academic careers. In some partnerships, industry provides scholarships up to \$50000 per year over four years (total) to cover living costs for up to 10 students per region. However, these were

not wide spread and were industry specific. Limitations in awarding scholarships were identified. For instance, a teacher at BMSHS suggested that negotiations had been undertaken to encourage industry to provide scholarships to more academic students to undertake university studies but to return to the community on completion. However, issues around return on money appear to constrain these initiatives. Industry would appear to prefer to support students who would immediately take up work positions in the mines.

Outcomes for the community

A strong theme emerging from the two mining town participants was the role of partnerships in supporting the community. At one level as described above industry is supporting local employment or using the local community as a reservoir of labour. However, the partnerships are also providing community benefits. In part, this was being achieved by sharing resources. For example, a teacher at Dragline SHS commented:

So I think we're trying to be more community focused and create the high school as more of a community type training, learning centre and that has only happened through our Partnership, yeah so we've moved away from being solely focused on ourselves to what can we, what will benefit us but then benefit the community which then in turn benefits BMA because they will get the employees that they need.

These comments were further supported by evidence of substantial funding to the school to upgrade turf on the school's playing field which could be used as a community resource.

Curriculum outcomes

It is unclear what specific curriculum outcomes have been achieved. In response to a direct question, a teacher at Western Plains College commented:

I would say that we have not had yet a sufficient enough support or I mean opportunity, unit writing it takes time. After saying that, Barb in Science, she went out to a day at Dalby and someone from QMEA had written a unit. Those teachers looked at those units and gave advice on them for embedding into grade 7 to grade 12 I think it was.

Other respondents were able to identify specific activities or topics such as “robotics in mining”, embedding “careers education” into syllabus documents, Certificates in Resource Management developed by industry partners, and an integrated curriculum package (ICP). ICP was developed at one mining community school and as described by the principal at Black Mountain State High School:

we offer ICP which is their Maths and Science curriculum and that's been run here, so that's where they advise a curriculum but let's say what goes on in the Blue shed certainly is influenced by, we have things we have to do to meet the requirements of the certificates but it's about them saying yeah this is how we do it in industry.

To support the delivery of this curriculum, the trainer from an engineering consultancy company undertakes work experience to update his skills.

Discussion

The aim of this study was to explore how industry and schools can collaborate through school-industry partnerships to support teachers and industry to share content and pedagogical knowledge; resources; and develop curriculum and assessment procedures relevant to contemporary work needs. We assumed that the establishment of the minerals and energy project was based on some theoretical position that by engaging schools and industries in partnerships there would be reciprocal knowledge transfer. A clear emerging broad conclusion is that for some schools the partnerships signify a transformation in the way schools and their communities engage. This approach signifies a new way for schools in this jurisdiction to engage with their communities given the broader neoliberal policy which has emphasised partnerships. However, what has occurred in some places particularly such as Rock Hill and Dragline State High

A clear emerging broad conclusion is that for some schools the partnerships signify a transformation in the way schools and their communities engage.

Schools is a contemporary rebranding of relationships which already existed between schools and industry. Schools had been working with their local major industry to address immediate career opportunities for students particularly in the trades. Nevertheless, the Gateway project could be seen as an attempt to reconfigure the relationships between

schools and industry to establish networked spaces and social relationships that provide opportunities for enriching the experiences of students and teachers. According to Castells' organisational theory (Castells, & Cardoso, 2006), individual schools function as nodes in a flexible network. Those nodes that are misaligned with the logic or purpose of the network are eventually excluded. The policy objectives stated for the project namely to address long-term skills shortages in traditional and emerging industries were understood by most of the principals and teachers in the project but often expressed in terms of building knowledge to gain access to careers related to mining. These have always been central considerations in the curricula of schools located in the mining industry regions.

Thus, Gateway was seen as one of a number of initiatives some funded through the State government and some through the Federal government aimed at providing support and infrastructure to achieve greater cooperation between schools and potential employers. The visibility of the initiative was substantially higher in Black Rock and Dragline State High Schools as both of these schools serviced the mining community and there was close proximity to the mines. The nature of engagement of industry and schools was more intense with direct contact between industry and school personnel. In contrast, the visibility and significance of the initiative for Metropolitan College and Western Plains College was low and primarily the initiative provided an opportunity for a small number of students to experience work conditions in mines as potential

professional engineers or to receive scholarships for further study. One finding is that the physical proximity provides no guarantee that organisations will be incorporated into knowledge networks in meaningful and productive ways. What is more significant is the common understanding of purpose of the relationships and the coherence of the networks.

The major beneficiary so far appears to be a range of teachers who are directly involved in curriculum related to minerals and energy — primarily science and technology. These teachers have benefited from professional development and up skilling. This is essential but also a problem in that the two mining schools are in remote locations and subject to rapid turnover of staff.

The primary benefit or outcome for students is that some students in these schools appear to have gained work place skills that position them well in terms of employability. Whether the program would have made any difference is an issue as in the mining towns the industry would appear to prefer to give priority to local school graduates in any case.

To what extent has this approach in which knowledge is contextualised provided a contrast to past approaches? Past approaches assume that teachers have the capacity or at least the schooling sector has the capacity to facilitate knowledge transfer. Historically, teachers were trained to deliver standardised curricula based on well defined subject matter in accordance with the goal of preparing all young people to be active and reflective citizens capable of participating in the social, economic and political life of the community. To this end, compulsory education provided opportunities for students to become literate, numerate citizens with a general knowledge of social and natural sciences and the arts. Students who wished to pursue trades or manual work exited the school system at the conclusion of compulsory education in year 10. They either went directly into employment or entered Technical Training Colleges to acquire an apprenticeship to a trade. Post-compulsory education as the stepping stone to higher education provided more in-depth specialised educational experiences in the various disciplines. This clear demarcation in the past decade has become blurred in that approximately 80% of students in this jurisdiction are completing year 12. Of these a substantial proportion, in places the majority, are undertaking vocational education programs. Programs such as the Gateway initiative appear to be a reaction to the limitations of the school sector to provide vocational education instruction. Gateway Schools may be seen as a response to the general broadening of education beyond the academic curriculum which is inadequate in catering for the large numbers of students who are now required to remain in schooling to year 12. Retaining students at school to they are 18 years of age is both a state and national policy possibly to camouflage youth unemployment statistics. However, a necessary response is the need for providing training opportunities and up skilling teachers who are not trained for this in their degree programs. Few traditionally trained teachers have the experience or knowledge to provide the knowledge that is required for vocational training especially in the areas of focus of the Gateway initiative.

Ghost (2002) argues that, to ensure the relevance of learning in school education, educators need to understand how workplace skills are continually changing. At the same time, industry needs to understand the school environment and how to contribute to skill formation in schools. Traditional research into curriculum innovation has examined the process from the perspective of hierarchical diffusion of knowledge from centralised curriculum planning agencies through schools to classrooms within educational institutions (Fullan, 2001). The Gateway initiative is significant because it adopts a system-wide approach to documenting the uptake and translation of ideas across multiple industry sectors, across school sectors (public and independent), and within and across local schools to generate theoretical frameworks for informing national and international partnership strategies (see Griffiths & Zammuto, 2005).

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