The articulation of school- and work-based education and training: Tractions and tensions in the organisational alignment of philosophy and pedagogy

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Abstract

This paper reports on a preliminary investigation into organising innovations in Senior Learning (Year 10, 11, 12) through the introduction of vocational education and training. This is a key issue of national and international policy and pedagogical concern. Specifically, this paper reports on aspects of a study which is investigating organisational innovations in Senior L/earning in Queensland through a study of development of a "hub and spoke" model for institutionalising in Vocational Education and Training in (and through) Senior Secondary Schooling (VETiS). 'Organisational innovation' is conceptualised through a historically informed account of tensions involved in the century old efforts to institutionalise VETiS. The review of the research literature points to the history of the tensions in relation to VETiS is analysed from this theoretical perspective. The research process used in this study draw from the established practice of case study methods for the purposes of data collection and analysis. For the purpose of this paper, web-based documents, including School Annual Reports, 2008 Next Step Reports and Newsletters provide the evidence which has been gathered and analysed to explore on organisational innovations in Senior Learning. This research provides insights into what is now being done to realise the organisational innovations through which school-based and work-integrated education and training may gain increasing traction.

Introduction

Organising innovations in Senior L/earning (Year 10, 11, 12) through the introduction of vocational education and training has been part of the tensions driving Senior

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Secondary schooling for nigh on a century. It remains a key source of national and international policy and pedagogical tensions. This paper provides a preliminary report on aspects of an Australian Research Council study which is investigating organisational innovations in Senior L/earning in Queensland through developments in Vocational Education and Training in (and through) Schools (VETiS). The tensions involved are situated historically. Using evidence from the Queensland Minerals and Energy Academy and three of its schools, this paper provides base-line data for a study of the tensions and tractions involved in establishing a "hub and spoke" organisation.

Literature Review: Organisational innovation in Senior Secondary Schooling

There are different ways of conceptualising the debates over the tractions and tensions in the organisational innovations to Senior Secondary Schooling in Australia (Billett 2004; Connell, 1980; Hughes & Brock, 2008). For the purposes of this paper, we depart from these conventional approaches by using concepts that indicate the increasing complexity of Senior Secondary Schooling across three periods as well as the growing sophistication of the theorisation used to better understand these tractions and tensions. These concepts are:

1. technical versus academic vocations.
2. schoolings' isolation from versus its integration into systems of production.
3. autonomous academic schooling versus heteronmous learning and earning.

First, it is useful to conceive the formation of Senior Secondary Schooling in Australia in terms of tensions between technical versus academic vocations. In the early twentieth century the tensions over public secondary schooling focused on whether it should provide technical or academic training (Bessant 1972; Connell, 1980). Some hoped that secondary schools would to be largely vocationally oriented, closely geared to the requirements of industry, commerce, and agriculture (Bessant, 1972, p. 125).

Proposals for close relations between secondary schooling and industry were intended to power-up Australia's struggle for world markets. However, various "strategies of reproduction" (Bourdieu 1996: 272-8) worked against this position gaining traction. At a time when the legal school leaving age was lower than it is now, high schools were developed to emphasise university admission and professional

vocations. Universities, which then controlled public examinations and university entrance, prevented changes that would affect academic prestige. Private secondary schools opposed State entry into secondary education. Fees were used to exclude those of low socio-economic status (Marks et el., 2000; Curtis, 2008). Some employers preferred graduates from academic rather than technical high schools. These strategies meant that State Senior Secondary Schooling was established for those of middle-to-upper socio-economic status. In 1932, 18% of NSW students were enrolled in post-primary schools and of these only 33% completed the fifth year of high school (Bessant, 1972). Effectively 94% students did not complete Year 12, a significant "elimination rate" (Bourdieu, 1996).

The outcome was a system of Senior Secondary Schooling that perpetuates the relations between its academic functions and the structure of Australian social relations, such as those based on socio-economic status (MacIntyre 1985). It was not until World War II that the Commonwealth took any interest in technical education and then it was only concerned with that which was specifically related to the war effort (Bessant, 1972, p. 140).

Second, the development of Senior Secondary Schooling from the 1940s to the 1980s involved the diversification of the student population through mass enrolments and immigration in response to changes in Australia's economy. Conceptually, it is useful to regard these developments in terms of debates over schoolings' isolation from versus its integration into the nation's system of production (Bernstein 1977). During this period, academic high schools expanded to provide a general education, with a core of common subjects linked to the needs of Australian urbanisation and the rising aspirations of city residents (Bessant 1972; Connell, 1980). The Senior Secondary Schooling curriculum across Australia was designed to select students for university entrance examinations, eliminating those unsuitable for professional vocations (MacIntyre 1985).

Fensham (1986) found that increasing Year 12 retention was paralleled by mounting alienation among students (especially those of low SES), from the exclusionary, selective Senior Secondary Schooling curriculum. However, Connell et al. (1982) reported that again vocational approaches to Senior Secondary Schooling failed due to the barriers of selected interests and exclusivity based on socio-economic status. Even so, at times of increasing unemployment technical and further education were seen as providing a solution (Kemmis et al. 1983; Rizvi & Kemmis 1987).

However, the academic curriculum proved more economical relative to the costs of appropriately resourcing Vocational Education and Training in Schools (VETiS). While most students undertaking secondary schooling were not destined for university, most resources were directed to those who were and these were, mostly middle to high SES students. To bridge the gap between schools and work Sweden also introduced VETiS, but faced similar problems regarding teachers' knowledge, content and students' interest (Frykholm & Nitzler 1993).

Third, conceptually, the development of Senior Secondary Schooling from the 1990s onwards can be understood in terms of the tensions between claims for autonomous academic schooling versus heteronmous learning and earning (herein l/earning) (Bourdieu 1996; 1993). VETiS was, in part a response to the privatisation of public enterprises that previously trained many skilled workers; the restructuring of work, labour markets and the economy due to recurring global financial crises; the rise of genetic, robotic, information and nano-technologies, climate change, and mounting indifference, if not despair among students about schooling, especially among those of low SES. Since 2000, leading-edge reforms by the Queensland, South Australian, and Tasmanian Governments have extended the compulsory participation of young adults in education and training. They now have to have one or more of the following: a Senior Certificate of Education; a vocational Certificate III; turned 17 years of age; or are working at least 25 hours per week. These States have established pathways that now see a convergence of Senior Secondary Schooling with university studies, trade training and paid work.

To varying degrees students are able to mix and match pathways composed of academic studies, vocational training and work by attending different institutions for accredited l/earning (Queensland Studies Authority 2007). Year 12 participation rates have increased with many enrolling in VETiS, as a result of reforms promoted by Federal and State Governments (Harreveld & Singh 2007; te Riele, 2004). For instance, in 2007, 34.4% of the Queensland Year 12 cohort went directly to university (an effective "elimination rate" of 65.6%), another 26.2% were studying VET courses, many of which provide for subsequent university entry (a "potential elimination rate" of 39.4%) (DETA 2008).

A research shows that "even senior school credentials are now seen as inadequate for secure employment and further training" (Te Riele, 2002, p. 253). Senior high school now serves more functions than preparation for university. Therefore, more

effective vocational education and training in schools is needed. However, according to te Riele's (2002, p. 255) research, VETiS remains "on the margins for those not bound for higher education, or as one-off interest subjects elected by academic students as a break in their otherwise generalist programme". The status of VETiS in the NSW HSC now lies with the universities because they control how each HSC course is considered in calculating a student's UAI score. The shape of Senior Schooling has yet to change away from classroom teaching to incorporate a range of other sites and providers. Thus, to bring VET in from the margins, and achieve equality with general courses, it must offer "at least similar rewards, in terms of access to tertiary education, probability of finding employment, and both short- and long-term comparable prospects regarding financial income (Te Riele, 2002, p. 258). A key is to ensure both general and vocational qualifications provide access to tertiary education. There is not enough evidence to indicate that "current policies in VETiS are undoing the narrow curriculum offerings that are the hallmark of senior secondary schools' pathway to employment (Te Riele, 2002, p. 258).

One argument for organising changes to senior secondary schooling is that student from low-income families; aboriginal students; country region students; homeless youth experience it as "negative: they do not get on with teachers, they find the curriculum irrelevant or too hard, and they find the school environment unsupportive" (Te Riele, 2002, p. 259). The new 'minimum' policy requires the completion of Year 12, or an equivalent matriculation qualification. Young adults who do not attain these outcomes, specifically those groupings named above, are "'disqualified' from most employment opportunities" (Te Riele, 2002, p. 260). Organisational innovations that bring a closer match between education, training and work is seen as potentially reducing unemployment among such young adults "being better prepared for lifelong opportunities for learning and work" (Te Riele, 2002, p. 260).

Methodology

The research process used in this study draws from established practices of case study methods for the purposes of data collection and analysis. For the purpose of this paper web-based documents, including newsletters, 2008 Next Step Reports and School Annual Reports provide the evidence which has been gathered and analysed to explore on organisational innovations in Senior L/earning involving

VETiS. The research strategy for this study involves an investigation of the QMEA's involvement in VETiS through it constituent schools, and the schools' representation of their involvement in VETiS, especially via the QMEA in order to explore the potential traction and possible tensions for this organisational innovation. This study aims to elucidate key features of the organisational innovations associated with reforms to senior secondary schooling by developing and evaluating potential theoretical explanations for the relations by changes in school and society. Three points relating to this case study are highlighted here, namely the delimitations of the case, data collection procedures and the conceptual categories of analysis.

The case of "Senior L/earning organisation"

New approaches to organising Senior L/earning involve VETiS using authentic learning situations where work-teams engage in cooperative learning processes, and involve partnerships between schools and communities (Te Riele, 2002, p. 263). Organisationally, VETiS brings "curricular complexity, multiple literacies, and disparate contexts and … pedagogical demands that [are] specific and situated" (Te Riele, 2002, p. 264). The role of VET in Senior Schooling is to re-engage alienated students with education by connecting with their interests in vocations and learning. VETiS is "more able than traditional academic subjects to build on students' existing interests and capabilities, integrate knowledge and skills, demonstrate the benefit of staying [enrolled] at school and gradually increase responsibility for demonstrating one's competency" (Te Riele, 2002, p. 262).

VETiS has a wide appeal among students, from those who are alienated to high achievers. Te Riele (2002, p. 261) notes, "higher education admission rules often deter high-achieving students from taking VET". The standardised, cost-effective academic curriculum prepares selected senior students for entry into higher education. This is "no longer relevant to the majority of senior high school students", the emphasis is now on "work experience programmes, and links with TAFE and with VET in school programmes" (Te Riele, 2002, p. 262). This is because students want to see how the knowledge is useful, or is linked with real life or with their own personal interests, needs, expectations and abilities. Educators are expected "to demonstrate usefulness and actively seek to connect knowledge with students' lives"

(Te Riele, 2002, p. 262). As a counter-balance to the standardised academic curriculum and its elimination mechanisms, VETiS has the potential to improve some students' commitment to complete Senior Schooling. The majority of students doing VETiS are concerned about keeping open the opportunity of getting a tertiary entrance score, wanting it to contribute "to social and cultural goals in exactly the same way that the traditional academic curriculum is seen to contribute" (Te Riele, 2002, p. 262). Through organisational reform, it may be possible to free some young adults from unsuitable and irrelevant schooling and to motivate them to pursue their prospects through a variety of learning settings. VET and VETiS provide the potential for more flexible and long-term career advances for at least some young adults.

Data collection and analysis

The Queensland Minerals and Energy Academy was chosen as the focus for data collection because of the economic importance of this sector to the Australian economy. Arguably, these industries are the mainstay of the nation's economy and significant contributors to the economic well-being of Australia. Beginning in 2007, the QMEA was

> developed in response to [the then] *skills shortages* in the minerals and energy sector, which [was then] experiencing significant growth, particularly in the face of increasing demand for resources from countries such as India and China.

The QMEA operates on a 'hub and spoke' model, having its head office in Brisbane, along with six school in south Queensland; nine schools in central Queensland, and three schools in northern Queensland. In addition to providing an analysis of QMEA as represented on its website, we chose to examine the School Annual Reports, 2008 Next Step Reports and Newsletters of one school in each of these regions to identify what they have to say about the place of VETiS in the development of this organisational innovation.

Arguably research into the relations between education/training reform and society has revolved around three different but interrelated traditions. Bowles and Gintis' (1976) conceived of, and argued that schools 'reproduce' predetermined socio-economic structures. Changes in organisation, philosophy and pedagogy were made outside school. Thus, changes in schooling were obtained only to meet the 'social control' interests of the ruling class. 'Social control' has been defined as a set of "structural constraints that can be tightened or loosened according to the malevolent (or benevolent) intentions of the educational state" (Hamilton, 1989, p. 10).

Young (1971), however, argued that schools are, or should be free of socio-economic structure, acting as autonomous sites of innovations in education and training (Hamilton, 1989). Thus, changes in organisation, pedagogy or philosophy originate from the capability of teachers to create new educational relationships within the status quo. Any transformation of schooling results simply from the "internal momentum of the education system" (Hamilton, 1989, p. 150).

Hamilton (1989) offers a different conceptualisation of social control to that of Bowles and Gintis. Hamilton (1989, p. 151) argued that "it is the presence of social control assumptions that makes 'schooling' something rather different from 'education'". He is interested in the different ways that social control is conveyed in the pedagogic lives of teachers and learners. The problem of 'internal momentum' theories of change in schooling lies in its idea of "one-dimensionality" (Hamilton, 1989, p. 11), that assumes subsequent one change leads to another in a unilinear order. Hamilton's resolution to this problem is that all forms of change to schooling "embody 'degrees of freedom' which allows for the possibility of subsequent change" (Hamilton, 1989, p. 11). Teachers and learners make use of this freedom through their daily work to realise their own pedagogic goals under policies and structures not of their own choosing. Hamilton (1989) conceptualises the changing relationship between schooling and society in terms of "reciprocal relationships that hold them together across time and space" (Hamilton, 1989, p. 151). He argues that the daily practices of schooling are necessarily "both socially-constructed and historically-located" (Hamilton, 1989, p. 151). That is to say that the practices of schooling are
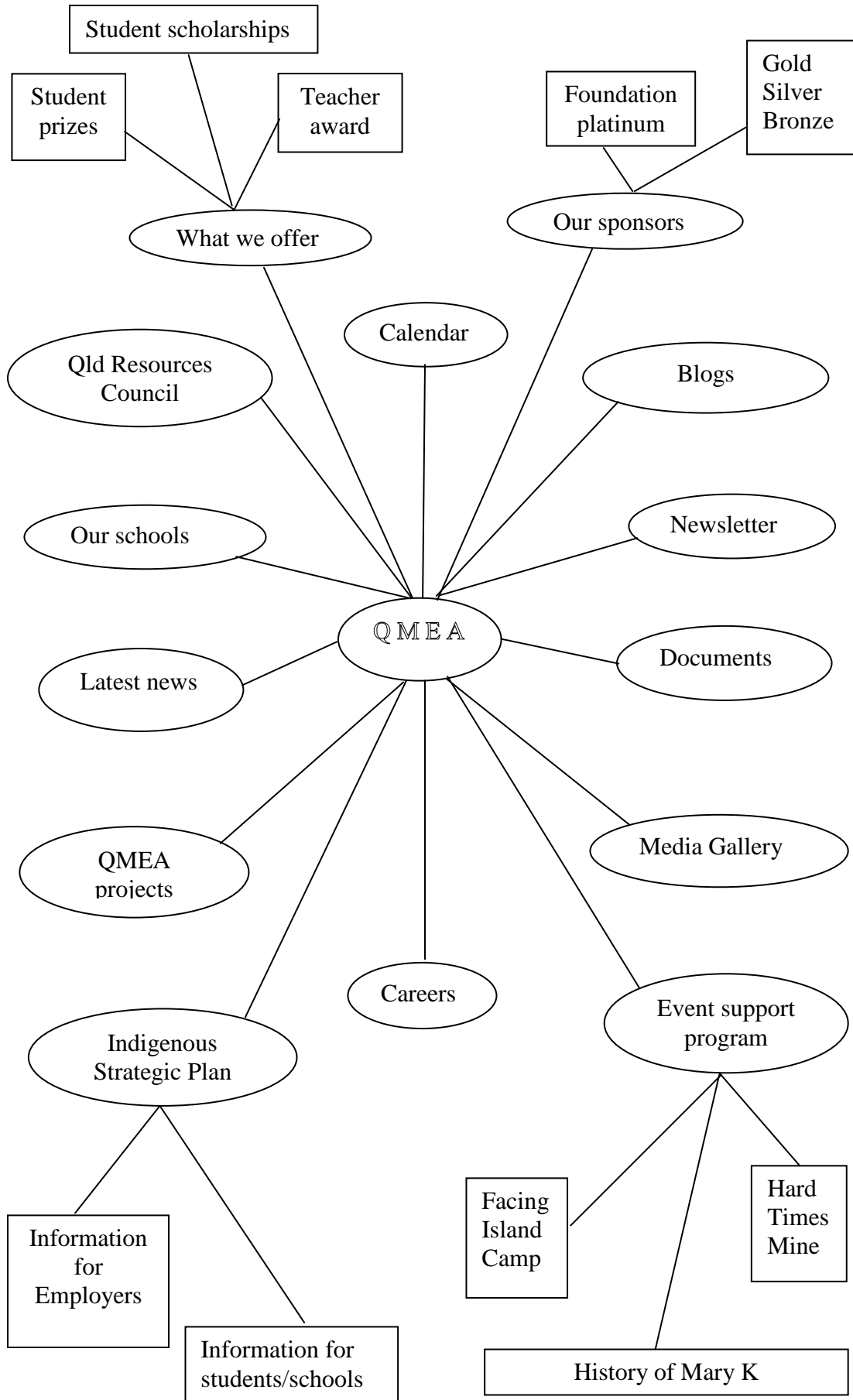
'in', 'of' and 'for' society. The history of organisational innovations in schooling are not quite as clear-cut either Bowles or Gintis (1976) or Young (1971) imagined.

Findings

The *Queensland Minerals and Energy Academy* (QMEA) is a partnership between the Queensland Government and the Queensland Resources Council (QRC), and is designed to encourage students to enter careers in the minerals and energy sector. The QRC was formed in November 2003 as a not-for profit peak industry association representing companies and individuals engaged in Queensland's minerals and energy sector, including miners, mineral processors, contractors, oil and gas producers, and electricity generators. The QMEA works with 18 State and private schools across northern, central and southern Queensland to enable students to access learning and career opportunities as skilled-operators, trades and professionals relate to minerals and energy. The QMEA provides students and teachers with close contact with minerals and energy companies via work experience, training, school-based apprenticeships, professional development and on-site and off-site activities.

An analysis of the QMEA website provides insights into key features of the 'hub and spoke' model of Queensland organisational innovation in articulating school- and work-based education and training. Prizes, scholarships and awards are offered to students and teachers. QMEA also has many sponsors in the categories of Platinum (Foundation), Gold, Silver and Bonze. The Event Support Program offered by QMEA includes Facing Island Camp, Hard Times Mine and History of Mary Kathleen. QMEA offers an Indigenous Strategic Plan which provides information for employers, students and schools. QMEA documents include information about Registration, Event Management and Planning. QMEA provides support for Projects, projects registration, projects proposals and Certificate I in Infrastructure and Resource Organisation (IRO), and information about careers. In the Media Gallery, there is curriculum information. The Newsletter and Latest News tell us what is happening at present. There are also the details about the QMEA's schools and blogs for students, teachers and QMEA staff.

Figure 1: An Overview of Queensland Mineral and Energy Academy

Student scholarships

Student prizes

Teacher award

Gold Silver Bronze

Foundation platinum

What we offer

Our sponsors

Calendar

Qld Resources Council

Blogs

Our schools

Newsletter

QMEA

Latest news

Documents

QMEA projects

Media Gallery

Careers

Indigenous Strategic Plan

Event support program

Information for Employers

Information for students/schools

Facing Island Camp

Hard Times Mine

History of Mary K

Among the QMEA projects, excursions and activities for 2008-2009 there was a workshop on 'Women in Mining Workshops for Year 9-10 students'. This workshop entitled 'Dressed for Success' was conducted at CQ State high school in conjunction with BMA to raise awareness of occupations in the mining industry for females. At the event 'Science and Engineering Challenge', a $ 500 grant was awarded to SQ SHS towards trophies and catering for the Engineer Mentors at a one day Engineering and Science Challenge held in March 2009. From the October 2008 newsletter, 14 Years 11/12 students and teachers from CQ SHS and other schools took part in the CQ Engineering Camp. CQ SHS was presented with an award by the Minister for Education, Training and the Arts at a gala function in Brisbane. Three students from CQ SHS were given prizes by the QMEA. The following provides a cross case analysis of three schools in QMEA.

A cross case analysis of three QMEA schools

In this section, the analysis of evidence from three schools, one in each of Southern, Central and Northern Queensland, are presented. The analysis focuses on *curriculum offerings*, *Year 8-12 retention rates*, *Outcomes for the Year 12 cohort*, v*alue added*, *future*, and *the main destinations of Year 12 completers*.

Curriculum offering

SQ School's curriculum offering includes, a "variety of QSA registered subjects providing *vocational outcomes,* including *Certificates 2* with the subjects linked to *school based traineeships.*" These offerings also include an *agricultural program* involving cattle breeding, handling and showing.

CQ School provides students in Years 9 and 10 with such subjects as Manual Arts, Home Economics, Business, Art, IT and Drama, in addition to obligatory core subjects. Within its Senior school it offers Queensland Studies Authority (QSA), Study Area Specification (SAS) and school subjects. Senior students are given "greater flexibility to engage in *vocational education* with approximately 1/2 of students continuing on to complete further studies".

NQ School has distinctive curriculum offerings, working closely with local industry partners. In 2004, in partnership with Xstrata it introduced a Bursary program for Year 11 students: "selected students attend Xstrata one day a week in Year 11 and during their holidays. This is then progressed into a SAT [School-based Apprenticeship or Traineeship] once students have identified their area of preference". Additionally, close links with the TAFE College have enabled courses of NQ School to be embedded into the school timetable. NQ School also offers extra curricula activities, including

1. school-based apprenticeships/traineeships for Years 10-12 (35 students in 2007)
2. structured Industry Placements for Years 10-12 (over 300 placements)
3. Xstrata Bursaries for Years 11-12
4. QMEA's Senior Engineering Camp

Year 8-12 retention rate

In 2007, the retention rate of Year 12 student enrolment as a percentage of the Year 8 student cohort was 84% for SQ School, 75% for CQ School and 59% for NQ School. No explanations are provided for these rates.

Outcomes for Year 12 cohort (2007)

The total number of Senior Certificates awarded was 90 for SQ School, 25 for CQ School and 131 for NQ School. 54%, 44% and 64% of eligible students in SQ , CQ and NQ Schools respectively gained an OP (Overall Position) of between 1-15. 58% of students in SQ School, 64% in CQ School and 46% in NQ School were awarded both a Senior Certificates *and* a Vocational Education and Training (VET) qualification. Overall, 78% of students in SQ School, 92% in CQ School and 67% in NQ School were awarded Senior Certificates that gained OP-eligibility *or* were awarded a VET qualification. 98% of Queensland Tertiary Admissions Centre (QTAC) applicants in SQ School received an offer, while 100% of QTAC applicants in both CQ and NQ Schools received an offer.

Table 1 Outcomes for Year 12 cohort (2007)

Schools	SQ	CQ	NQ
Total number of Senior Certificates awarded	90	25	131
Percentage of Overall Position (OP) -eligible students with OP 1-15	54	44	64
Percentage of students awarded Senior Certificates and awarded a Vocational Education and Training (VET) qualification	58	64	46
Percentage of students awarded Senior Certificates with OP-eligibility or awarded a VET qualification	78	92	67
Percentage of Queensland Tertiary Admissions Centre (QTAC) applicants receiving an offer	98	100	100

Value added

SQ State High School draws from an area that "experiences considerable economic disadvantage, a demographic which is very often associated with poor academic outcomes and poor school climate". However, SQ State High students regularly attain excellence across a range of academic destinations. In 2007, it is reported that "two students gained *entry to university* courses to study medicine, another … to study law, this within a cohort which typically sends 25% to tertiary courses at universities throughout Queensland and beyond". Additionally, an unspecified number took trade-based courses as *apprentices, trainees and some entered TAFE colleges.*

In 2007, CQ School was "a Showcase State Finalist for Excellence in Senior Phase of Learning, [recognised for] Excellence in Leadership for the Skilling Students for Success program, and [participated in the] CQ School Community Pathways Program". Students at CQ School have access to a range of *education and training opportunities* and *career pathways*, as a result of the partnership between School and *BMA coalmines*. CQ School provides students with "training opportunities, *job seeking support*, literacy and numeracy support [so they] are more highly skilled prior to entering the workforce". The link with BMA coal mines has enabled the school to "undertake Adopt-a-Student program, Mine Tours, participation in the Queensland Minerals and Energy Academy and direct curriculum links to professionals on the mine sites". As a result, students have obtained "*apprenticeships*, completed Cert I RIO (Resources and Infrastructure Organisation) and are being groomed to undertake university courses in areas of need (every Year12 school leavers are offered five

tertiary scholarships from BMA)". In 2007, the school's annual report was able to say that "there has been *0% unemployment* for SQ school leavers for the past four years".

The Assessment Centre of NQ School continued to provide focussed support for students to "ensure that they are able to achieve the *best possible outcomes*". Students are "*case managed*" both in class and in the Assessment Centre. In NQ School the embedding of Reading Teacher Aides has supported students "who have arrived at secondary school with literacy development needs". The teacher assists students both individually and in small groups to improve their reading ability. A new initiative in 2007 was "the launch of the Queensland Minerals and Energy Academy's Senior Engineering Camp".

Future

SQ School intends to improve its OP scores and *vocational outcomes, particularly school based traineeships,* and to improve academic results for Indigenous students.

CQ School will assist teachers to "ensure implementation and alignment of Curriculum/Pedagogy/assessment"; to promote alliances with *local business* and community organisations especially in the further development of *SBT/SBA* "to enhance students *learning opportunities"*; to provide a senior curriculum that "incorporates maximum flexibility for students to achieve to their potential and meet their individual needs though alternative methods of delivery – VSS, SDE"; to ensure equity for all students; and to enhance retention rates.

NQ School will focus on "improving outcomes for our Indigenous students through participating in the Indigenous Education Support Structures program". This program provides "additional staff resourcing to enable the school to further refine its already embedded Case Management process". This three year program will focus on improving retention and outcomes of Indigenous students.

Main destinations of Year 12 completers

In 2008, 46.5% of young adults at SQ School, 50% at CQ School and 63.3% at NQ School who completed their Year 12 in 2007 continued in some recognised form of

education and training. The most common study destination was university (14.1%) for SQ School, but for CQ School it was traineeships (16.7%) and for NQ School it was apprenticeships (30.6%). The combined VET study destinations accounted for 32.4% (SQS), 41.7% (CQS) and 52% (NQS) of respondents, including 14.1 % (SQS), 8.3% (CQS) and 11.2% (NQS) in campus-based VET programs. 2.8 % (SQS), 8.3% (CQS) and 2.0% (NQS) of Year 12 completers entered programs at Certificate IV level or higher. 18.3% (SQS) commenced employment-based training, either as an apprentice (12.7%) or trainee (5.6%). In addition to trainees in CQS, a further 12.5% of respondents commenced employment-based training as apprentices. 8.3% entered degree-level programs at university. In addition to the apprentices for graduates from NQS, a further 17.3% of respondents commenced employment-based traineeships. The third most common study destination for NQS' students was university (11.2%). In addition to the above study destinations, a further 8.5% (SQS), 8.3% (CQS) and 3.1% (NQS) of respondents deferred a tertiary offer in 2008. 53.5% (SQS), 50.0% (CQS) and 36.7% (NQS) did not enter post-school education or training, and were either employed (40.9% SQS, 33.3% CQS and 29.6% NQS), seeking work (9.9% SQS, 16.6% CQS and 6.1 NQS) or neither studying nor in the labour force (2.8% SQS and 1.0% NQS).

Table 2 Main destinations of Year 12 completers

Schools	SQ (%)	CQ (%)	NQ (%)
Year 12 completion	46.5	50.0	63.3
University	14.1	8.3	11.2
VET Cert IV	2.8	8.3	2.0
VET Cert III	4.2	4.2	1.0
VET Cert I-II/other	7.0	Not given	1.0
Apprentice	12.7	12.5	30.6
Trainee	5.6	16.7	17.3
VET total	38.6	41.7	52
Working FT	26.8	20.8	24.5
Working PT	14.1	12.5	5.1
Seeking work	9.9	16.7	6.1
Not studying/NILF	2.8	Not given	1.0
Not in full time education, training or work	26.5	29.2	12/2

Table 3 shows a cross-school comparison in six aspects among three QMEA schools, with one from Southern Queensland, one from Central Queensland and one from Northern Queensland.

Table 3 Cross-school comparison

	SQ School	CQ School	NQ School
Curriculum offering	A range of QSA registered subjects	Core subjects, MA, HE, Business, QSA, SAS, Art, IT, Drama	Curriculum working closely with local industry partners, extra curricula activities
Year 8-12 retention rate	84%	75%	59%
Outcomes for Year 12 cohort (2007)	Senior Certificate 90 OP 1-15: 54% SC & VET: 58% SC with OP/VET: 78% QTAC: 98%	Senior Certificate 25 OP 1-15: 44% SC & VET: 64% SC with OP/VET: 92% QTAC: 100%	Senior Certificate: 131 OP 1-15: 64% SC & VET: 46% SC with OP/VET: 67% QTAC: 100%
Value added	Excellence across academic destinations	Quality education and training opportunities and career pathways, job seeking support	Best possible outcomes , case-managed students
Main destinations of Y 12 completers (%)	Y 12 completion: 46.5 University: 14.1 VET Cert IV: 2.8 VET Cert III:4.2 VET Cert I-II: 7.0 Apprentice: 12.7 Trainee: 5.6 VET total: 38.6 Working FT: 26.8 Working PT: 14.1 Seeking work: 9.9 Not studying/NILF: 2.8	Y 12 completion: 50 University: 8.3 VET Cert IV: 8.3 VET Cert III:4.2 VET Cert I-II: X Apprentice: 12.5 Trainee: 16.7 VET total: 41.7 Working FT: 20.8 Working PT: 12.5 Seeking work: 16.7 Not studying/NILF: X	Y 12 completion: 63.3 University: 11.2 VET Cert IV: 2.0 VET Cert III:1.0 VET Cert I-II: 1.0 Apprentice: 30.6 Trainee: 17.3 VET total: 52 Working FT: 24.5 Working PT: 5.1 Seeking work: 6.1 Not studying/NILF: 1.0
Future	Improved vocational outcomes and academic results for Indigenous students	To ensure implementation and alignment; to promote alliances; to provide a senior curriculum; to ensure equity for all students; to enhance retention rate	To improve retention and outcomes of Indigenous students

Research into organisational innovations in secondary education and training and their relations to society has centred on three different but interconnected views (Bowles & Gintis, 1976; Hamilton, 1989; Young, 1971). One view sees changes in schooling as reproducing socio-economic structures. The organisational changes to create the "hub and spoke" structure of the Queensland Minerals and Energy Academy originated outside eighteen schools involved with the Queensland Government and the Queensland Resources Council. Thus, it might be argues that the changes in schooling involving the QMEA happen only to meet the 'social control' interests of these authorities.

A second view sees schools as autonomous sites of educational innovation, free of socio-economic structures. Thus, teachers construct new education and training relationships within the inherited status quo. However, historically that status quo has been shown to favour academic over technical vocations (Bessant, 1972; Connell, 1980), the imagined isolation of schoolings in opposition to its integration into systems of production (Bernstein 1977). Thus, any change of schooling that comes from the internal impetus of the educational system can be expected to privilege autonomous academic schooling over heteronmous learning and earning (Bourdieu 1996; 1993).

Although in its early stages the Queensland Minerals and Energy Academy could represent an important change in the relationship between both schooling and society, and through its "hub and spoke" structure, an important change in the relationship between schooling, time and space (see Figure 2). The annual reports and the post-school destination data indicated that the practices of schooling being socially reconfigured by this innovative organisational structure as much as by its historical location in what in 2007 was a booming industry. The evidence suggests that the practices of schooling are 'in', 'of' and 'for' Australian society. The creation of the QMEA and the changes to its participating schools has been socially constructed by the government and big business and it was initiated at a historically propitious time, the economic boom in minerals export to China. Organisational innovations in Queensland schooling are not as insular or as quite straightforwardly control driven as might be imagined; further investigations are required.
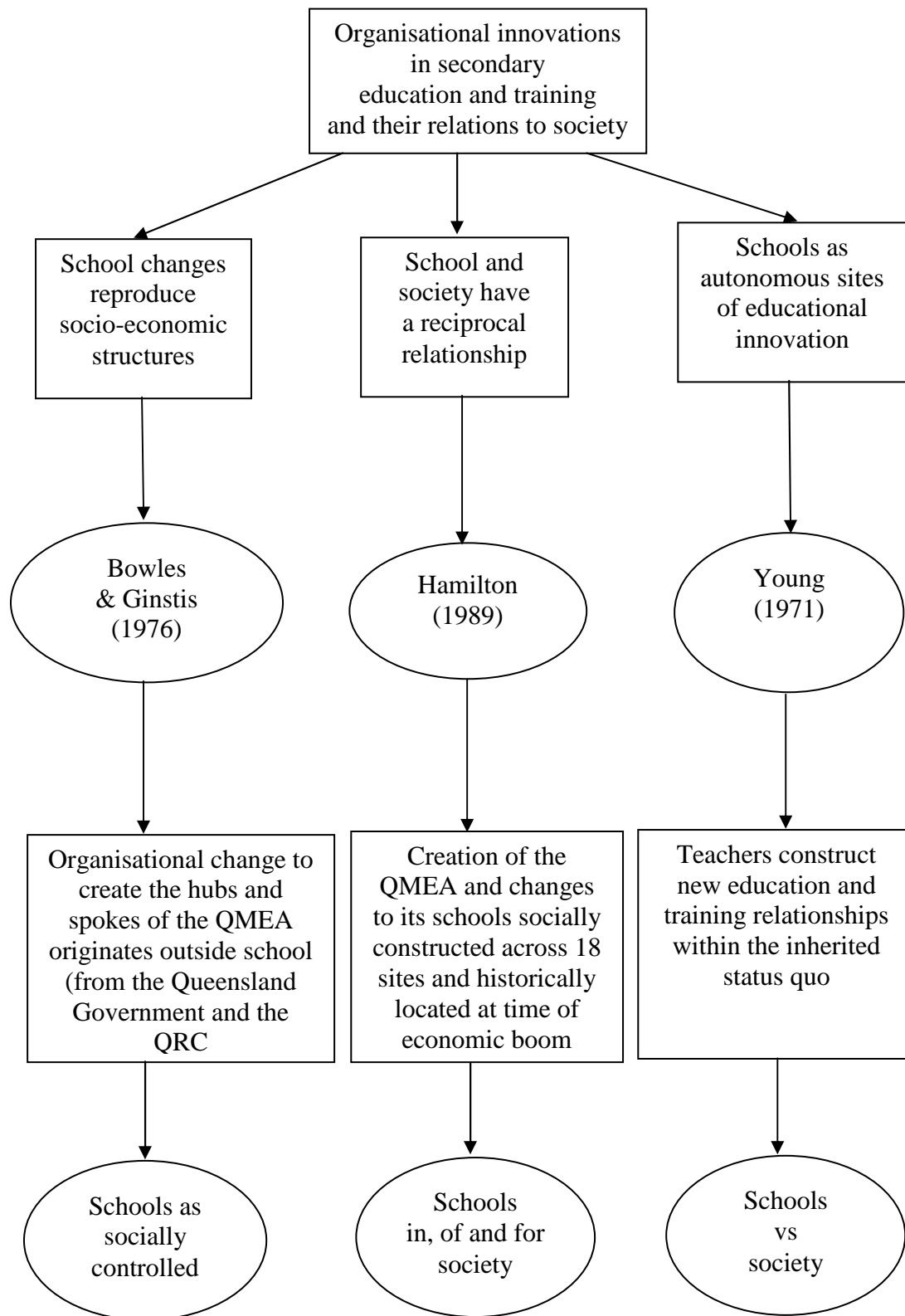
Figure 2. The relations between education and training reform and society

Conclusion

The "hub and spoke" model has been an approach to investigate organisational innovations in Senior Learning in Queensland involving developments in Vocational Education and Training in (and through) Schools (VETiS). Specifically, the Queensland Minerals and Energy Academy could, potentially, represent a significant 'organisational innovation', providing a historically important change to institutionalised schooling. The research literature pointed to the tensions across three areas as vocational education and sought to gain traction in Australian secondary education, only to be beaten back by tensions stimulated by academically privileged resistance. The data from the QMEA and three of its schools it was found that QMEA has a platform for successful implementation. The three QMEA schools have VET courses and/or activities, which await further integration into the QMEA. This occurred probably due to the fact that we investigated the first year in which the QMEA was establish and will study its progress over the next three years when we expect the better development of this Academy. This research will provide preliminary insights into what is being done to gain traction in the organisational innovations through which school-based and work-integrated education and training.

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