

# Walking the Tightrope: market drivers vs. social responsibility with implications for LLN and inclusive teaching

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## Abstract:

For the past two years TAFE Queensland Brisbane (TQB) and one of its amalgamated branches Metropolitan South Institute of TAFE have been conducting a collaborative action research project investigating how best to support their very diverse vocational students successfully complete their studies. This is in a climate of devaluing vocational education, reflected in drastically diminishing funding with spending per VET student plummeting over a ten year span (1999-2011) by 25% (Noonan, Burke, Wade & Pilcher, 2014) with public vocational providers such as TAFE receiving even more severe funding cuts in the past three years, losing thousands of highly qualified teaching staff. This paper therefore addresses how in this difficult marketized VET environment successful LLN and Inclusive teaching practices can be effectively delivered to maintain the engagement of an increasingly diverse student cohort and how follow up ongoing learning support needs to be adequately funded and flexibly provided for continued student engagement.

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**Key Words:** Vocational Education and Training (VET), Language Literacy and Numeracy (LLN), Foundation Skills, Funding, Australian Core Skills Framework (ACSF), Learning Support

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## Introduction

In the past two decades, it seems government policies and legislation regarding VET have steadily moved away from a social justice framework, a framework which values building social capital in individual citizens to enhance society as a whole, to a marketized view of society. Succinctly put by VET educator and well known Australian academic, Leesa Wheelahan:

[T]he problem that since the 1980s we've had the transformation of society from a society in which the market supported the broader society, to a market society where the point of society is to be a market (Forward, 2014, para.13).

Consequently one of the issues this paper investigates is the effect of marketization on learning and teaching in the VET sector, particularly within TAFE. Another issue of concern for VET education is the high attrition rate of vocational students. Mark and Karmel reported in 2010 that vocational education completions in Queensland were under 40%, while in 2013 'ACTU secretary Dave Oliver said new research, commissioned by the unions, showed less than 50% of those who start an apprenticeship were actually finishing' (Lacey, 2013, ¶3). Additionally some have linked poor completion rates to inadequate levels literacy, numeracy and learning skills [often called foundation skills] (Industry Skills Councils, 2011). TAFE NSW admitted that an 'upfront LLN and learning difficulty assessment' is needed to ensure students have the ability to complete their courses. The regulating body of vocational registered training organisations Australian Skills Quality Authority (ASQA), in their standard clause 1.7 also emphasise the importance of assessment and support of students'

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LLN and learning skills, considering these foundation skills as essential for course completion and industry employability requirements (Australian Government - ASQA, 2015).

Emanating from these three intertwining issues: marketization, high VET attrition rates, and low LLN and learning skills, this paper reviews an action research project which likewise located these three issues as critical to student engagement; then sought how best to improve students' needed LLN and learning skills gaps; and at the same time improve vocational teachers' pedagogical practices. In so doing it was hoped that student retention would improve with an equal improvement teaching practices. In breaking this national problem a model for vocational teaching and learning could be developed to inform teaching, organisational planning and policy formation.

### **Background**

#### ***Importance of high level of Language, Literacy & Numeracy in 21<sup>st</sup> Century workplaces***

As workplaces demand higher and higher LLN skills performance from their employees, with even those on the production floor having to fill out more complex forms, make multiple calculations, and take greater responsibilities for production errors, this has placed a greater need for vocational education and training to meet the needs of learners with low Language, Literacy and Numeracy (LLN) skills (Mikulecky, 2004; Searle 2002; Benseman et al., 2012). Resulting from the phenomenon of globalisation and the exponential expansion of information technology, the subsequent growth in global service markets has brought a requirement for structural adjustment across a range of industries, which have led to an increasing demand for employees who can be quickly trained with productivity enhancing skills (Martin, 2008; Short & Harris, 2014).

As such, LLN provision is becoming an important training focus in the Vocational Education and Training (VET) sector. National policy discourse has emphasized LLN skills development as necessary to safeguard productivity and the achievement of national health and wellbeing along with economic goals (Hanushek, Schwerdt, Wiederhold, & Woessmann, 2013). Recognising this, Australian governments have promoted policies and reforms directed at education and training to ensure an educated, highly skilled working-age population. Of concern for Australia's skills growth, though, is the continuing extent of low literacy and numeracy among Australian adults.

*More than 7.5 million Australian adults do not have the literacy and numeracy skills to participate fully in today's workforce (COAG & SCOTese, 2012, p.3).*

To tackle this challenge in 2011, the Commonwealth government established the National Foundation Skills Strategy to improve adult language literacy and numeracy (LLN) skills and ensure that more Australians are work ready, productive, and can participate meaningfully in economic and social life. This was followed by the 2012 National Partnership Agreement on Skills Reform (NPASR), which along with Queensland's Higher Skills Program Policy 2014-15, targeted investment and initiatives across the Vocational Education and Training (VET)

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sector to redress the foundational skills deficits that affect employment and productivity across the workforce. To maximise funding from NPASR, the Queensland government agreed to develop a managed market approach, firstly by ensuring governance arrangements for TAFE to operate effectively in a competitive environment, and secondly by creating a more open and competitive training market by increasing the ability of Registered Training Organisations (RTO) to offer income contingent loans to students (Council on Federal Financial Relations, 2013).

This recent reform agenda has established a market-determined approach for skills development. However, there are disparities, notably between a market-determined VET system and agendas espousing learning as a core skill to generate equity and access. In a submission to the Commonwealth Government, the Australian Industry Group recommendations included:

Providing the National Foundation Skills Strategy with an adequate budget, and a national awareness campaign needs to be developed and implemented in consultation with industry and other key stakeholders; *and*

Significantly expanding funding allocation for English literacy programmes like WELL to provide Language, Literacy and Numeracy skills program access for existing workers (Australian Industry Group, 2014, p.5).

However of these two recommendations – the WELL program has now ceased, and Noonan et al. (2014; Appendix A) report that funding for VET programs in general has greatly diminished over the past 10 years:

*Public expenditure per VET hour of training is actually falling (around 25 per cent over the period [1999-2011]) (ibid., p.9); and*

*Expenditure on education by sector 2003/4 – 2012/13 reveals an increase for Higher Education of 40%, for Schools 23%, but VET has only received an increase of 15% (ibid., p.5).*

Another part of the reform agenda have been reviews of Training Packages conducted in 2013 (Industry Skills Councils, 2014; Australian Government, Department of Education and Training, 2014). Part of this review process is to inculcate *into the vocational training package units*, ACSF levels (Australian Core Skills Framework) that is national diagnostic levels of literacy, numeracy, and learning skills appropriate to each qualification level, from Certificate I through to Advanced Diploma and Bachelor degrees. In May 2013 one industry council released a training package specifically addressing the ACSF core skills. The council was Innovation and Business Skills Australia (IBSA) which developed the FSK Foundation Skills Training Package. The aim being to directly build LLN, Digital and Learning skills linked to vocational training units and certificate levels, as well as one of 5 literacy levels as outlined in the Australian Core Skills Framework (Innovation and Business Skills Australia, 2014b).

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Pertinent to the action research is the way the Foundation Key Skills (FSK) Training Package has been used to build essential LLN skills needed for competency in health units. FSK units utilized were:

*FSKNUM14 Calculate with whole numbers and familiar fractions, decimals and percentages for work* – A maths medications calculations workshop to support the nursing medications unit HLTEN507

*123 Program: get ready for Health Studies* – a pathway to the Diploma of Nursing, a two week program for commencing students, to build Reading/Writing/Digital/Learning skills necessary to succeed in the Diploma of Nursing course, connecting to anatomy units, HLTAP 401B, HLTAP501C; Infection control unit HLTIN301C; and comprising:

- *FSKDIG03 Use digital technology for routine workplace tasks*
- *FSKRDG07 Read and respond to simple workplace information*
- *FSKLRG11 Use routine strategies for work-related learning*
- *FSKWTG09 Write routine workplace texts*
- *FSKRDG10 Read and respond to routine workplace information*

By implementing an upfront LLN skills building model as well as a short training workshop during enrolment, these two LLN programs have fulfilled ASQA's requisite for maintaining standards by registered training organisations, with particular reference to Standard 1, Clause 1.7 'Support Learners', which mandates:

- identify any support individual learners need prior to their enrolment or commencement (whichever is the earliest)
- provide access to that support throughout their training (Australian Government ASQA, 2015, para 3).

With a further explanation that, 'This may include providing:

- Language, Literacy and Numeracy (LLN) support
- assistive technology
- additional tutorials
- other mechanisms, such as assistance in using technology for online delivery components' (ibid., paras. 4 & 5).

This paper therefore describes the ongoing collaborative process of reviewing present LLN teaching and learning practices and then developing and delivering LLN support materials to both raise students' LLN abilities to grapple with the complexities of their VET courses, to be workplace ready; and additionally as a means to mentor teachers in how to improve their own vocational teaching materials and practices to inculcate LLN strategies into daily teaching practice. This paper's focus is specifically on the programs as described above, the *123 Program* which has a literacy focus, and the *Nursing Medications Calculations Workshop* with a focus on numeracy, both of which emanated from the action research process and were developed to support the Diploma of Nursing students and teachers.

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### ***Workplace focus – Enrolled Nurses and their LLN needs***

The *Diploma of Nursing (Enrolled/Division 2 nursing)* the subject of this research is mapped to the Australian Nursing and Midwifery Council National Competency Standards for Enrolled Nurses. On successful graduation students can register as an Enrolled Nurse through the Australian Health Practitioner Regulation Agency. Graduates must complete the equivalent of 1.5 years full-time study. As diploma students the expectation is that graduating students should have acquired all the literacy and numeracy skills required for university entrance, which is ACSF Level 5.

The language literacy and numeracy (LLN) skills that are required in the workplace for Enrolled Nurses are considerable. Core skills include: being information technology literate, critical and reflective thinking, contributing to the formulation of care plans, interpreting patient's charts (temperature, pulse and respiration rates), administering and monitoring medication, and knowledge of legislation and common law pertinent to enrolled nursing practice (Australian Nursing Council, 2002). These tasks are essential to National competency standards and necessitate a high level of proficiency in language, literacy and numeracy skills, particularly in oral communication.

### **Action Research Project**

#### ***Methodology – Action Research***

Conducted using an action research methodology, this project adhered to the framework of 'observation, reflection, planning and action' and 'sharing' (Crane & O'Regan, 2010, p.1). A method of collaborative action research was employed so as to develop a support program which rather than being imposed from an external 'expert' would give teachers ownership and a stake in the program, with a corollary of overcoming resistance to change. During the action research process teachers would become critical of their own practices and active change agents in their faculties. A further purpose was by collaborating with and drawing on the industry expertise of vocational teachers, the support programs would be more connected to current vocational practices, and so it was hoped to have a more beneficial outcome as regards to student attrition, engagement and employability. So as opposed to the purpose of pure research which is only to analyse, inform and make recommendations with participants as contextual informants rather than active agents, participants in this research were actively involved in the production, implementation and modification of research resources and strategies.

This process that Crane and O'Regan likened to 'a rolling ball – multiple cycles over' (2010, p.1) began the collaborative process of developing support resources for the Health faculty in 2013 and still continues, but now has expanded to other faculties at campuses across TQB. However, for the purpose of this paper only research regarding the Health faculty will be discussed. The format of the study was both qualitative and quantitative, drawing on participant perceptions, numerical and documentary data. Thus conforming to an underpinning critical realist philosophy of revealing then combining or triangulating: the

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empirical (participants' reality), the actual (statistical and documentary data – what actually seems to be happening) to arrive at the real (what really is happening) (Sayer, 2004).

### *Participants – Campuses, Students and Teachers*

The research began in April 2013, initially with a wider purview of reviewing past investigations and support programs across MSIT, with the researcher meeting with staff at three of MSIT's main campuses in the faculties of Community Services, Early Childhood, Business and Legal Studies as well as the Health faculty's Aged Care and Enrolled Nursing teachers. She was situated at the Loganlea campus within the Health faculty staffroom with the initial task of investigating how to best support Health teachers and students at the Loganlea and Alexandra Hills campuses. These two campuses according to the Australian 2011 census statistics seemed to draw on fairly similar demographic populations (Australian Bureau of Statistics, 2014a, 2014b & 2014c).

However, when visiting the two campuses there appears to be a much wider cultural difference than is apparent in the ABS statistics. Loganlea campus has an impression of being filled with students from every corner of the globe dressed in colourful cultural attire, while the Alexandra Hills students appear to be of a more homogenous European, 'Aussie' culture. Consequently the research drew on TAFE documentary data to further examine this apparent disparity between perception and ABS data for these two campuses.

Because of the high attrition rate from enrolment to course completion in the *Diploma of Nursing (Enrolled/Division 2 nursing)*, study participants most of interest from the Health faculty were those involved as teachers or students in the Diploma of Nursing at both the Alexandra Hills and Loganlea TQB campuses. Students included those with English as a first language, English as a second language from culturally and linguistically diverse backgrounds (CALD), as well as a substantial proportion of International students.

Two intakes of students of particular interest were: (i) January 2013 students who participated in the *Nursing Medications Calculations workshop* after completing their first semester; and (ii) January 2014 students who participated in the *123 Program: Get ready for Health Studies – a pathway to the Diploma of Nursing* prior to starting their nursing units at the very beginning of semester one.

Students who had commenced in January 2013, were offered the medications calculations workshop between semesters in June and July before they commenced their 2<sup>nd</sup> semester when they had to undertake *HLTEN507C Administer and monitor medications in the working environment*. This workshop was also offered just before their HLTEN507C exam in September 2013 and was only offered at Loganlea campus. A total of 43 students attended out of an enrolment of just over 120 students.

In January 2014 a total of 108 students participated in the literacy program, *123 Program: Get ready for Health Studies – a pathway to the Diploma of Nursing*. They included students from both Alexandra Hills and Loganlea campuses, the program being delivered at both campuses.

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Teachers participating in the action research in each year (2013 & 2014) included approximately 19 teachers per year, delivering across both campuses. Teachers were a combination of hospital and university trained Registered Nurses who were still actively nursing, some with supervisory positions at various hospitals and health facilities. Their main teaching qualification was the *Certificate IV in Training and Assessment* (Innovation and Business Skills Australia, 2014a); however, some were currently studying for their Masters degree in teaching or in their professional area of expertise.

### *Findings – LLN Strategies & Outcomes*

#### *Action Research Phases: Observe, Reflect, Plan, Act*

Although adhering to action research phases of observation, reflection, planning and action, in reality these four phases, rather than taking place in a purely circular motion, were implemented in more of a criss-crossing zig-zag constantly informing and reinforcing process.

*Phase 1. Embeddedness and Conversation:* To develop a collaborative spirit and gain teacher support, the researcher was given a desk located within the Health staff room at Loganlea, where following the methods of early ethnographers from the Chicago school (Deegan, 2007) she was able to begin the process with informal conversations later noted down regarding:

*Teacher perceptions surrounding their students:* motivation, learning skills and LLN levels, impact of being second, third or fourth language speakers, cultural and social backgrounds.

*Teachers also spoke about difficulties of delivering dense content:* that once was a two year delivery, then a one year, and now a year and a half delivery timetable; the squeezing of dense content into shortened timeframes.

*Teachers shared curriculum materials and explained:* administrative requirements as well as content demands of their courses which vocational registration required to be included. Such requirements included the demand for nursing students to gain 100% in their nursing medications exams.

*Phase 2. Classroom observations:* Classrooms were observed employing an LLN template to code student/teacher interactions, and then later develop an expanded suite of effective student and teacher LLN multimodal strategies. This template was based on Cope and Kalantzis' (2000) *Multiliteracies*' five semiotic codes: auditory, gestural, linguistic, spatial and visual. Additionally a seating diagram was used where the researcher went into the room before the observation and drew a diagram of all the desks/seats, then during the class students were coded according to linguistic background and also according to how many questions or answers they initiated or participated in. In this way the researcher was able to ascertain the amount of classroom talk and how many times individual students participated, as well as the number of times the classroom teacher initiated a question.

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*Phase 3. LLN and Inclusive Practices PD for Teachers:* feedback on above observations was given to teachers at professional development sessions, not only to the Health faculty but also to other faculties, such as Community Services, Early Childhood, Business and Legal Studies. Some key feedback from observations with suggested strategies were:

*Few students were taking notes* – strategy of saving lecture PowerPoint slides as PDFs with 3 slides per page and adjacent note lines, then printing out the first two lectures to model as an example for students to print out following lectures for note taking; emphasising the importance of listening, and writing for remembering content material – and of taking down what the teacher is explaining rather than rewriting the already available slides.

*Classroom delivery* – the main format in the classrooms was lecture style with the teacher at the front of the class; alternative strategies were group work with butcher's paper displaying group's findings, or having individual students come and scribe their answers on the whiteboard. There were also 'prac' sessions which were taught in well equipped practicum rooms set up identical to a hospital ward with nurses stations, where students had to demonstrate their theoretical knowledge with teacher feedback. Several teachers attended in these prac sessions. Each individual student received immediate verbal feedback in these sessions.

*Classroom interactions were varied* – communicative strategies were both positive and negative: generally interactions only took place between the teacher and three or four students, with some of the more talkative students often dominating, and with almost no responses from CALD or international students. In one class with a significant number of international students the teacher engaged students by walking around the entire classroom and quizzing students individually. This was helpful for the students in the immediate vicinity of the teacher, however those at the other end of the class appeared distracted. Another class preparing for an exam played a quiz game in teams, which had the entire class engaged. From these observations a chart was shared with the teachers, detailing 5 multimodal forms of communication for both teachers and students in classrooms, including how to improve visual design of curriculum materials.

*Phase 4. Responding to teacher requests for assistance:* as teachers became more comfortable with the researcher's presence requests for further classroom observations and for assistance with rewriting assessment materials and workbooks have continued. For example:

*One requested classroom observation was for the purpose of ascertaining the understanding of international students* who the teacher suspected lacked adequate literacy levels to comprehend lectures and content materials – observation and interview revealed none of the students were taking notes, only one student was making affirmative utterances to indicate understanding of what the lecturer was saying; when interviewed this one student had been in Australia for over 6 months whereas the others had only recently arrived; when questioned about IELTS levels students said they had scores of between 6.5 and 7, however when they were given slide print outs of the lecture they had just listened to, it was evident that no student actually had the claimed adequate IELTS

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level as they all lacked decoding ability of even simple everyday language. The student with the least decoding and reading ability was the one with a claimed IELTS of 7! This confirmed their teacher's suspicions that 'they were not getting it'.

*Manager and teacher consensus of the most needed support program* was a request to develop a maths program to assist with Medications Calculations unit *HLTEN507C Administer and monitor medications in the working environment*, as the nursing manager reported that in recent time between 33% and 50% of students were passing this core unit.

*Phase 5. Facilitating greater collaboration between library, learning skills staff and nursing teachers – consistent Literacy testing across campuses + additional Numeracy testing.* From the commencement of the project, and as a learning support teacher herself, the researcher was able to liaise with learning support and library staff across the two campuses to gain their perspectives on the learning needs of nursing students. Apart from general library staff, at Loganlea there were two learning support teachers and one tutor, and at Alexandra Hills one learning support teacher. Support teachers worked from class rooms within the two libraries. They were already supporting students in one-on-one or small group sessions, as well as workshops. Additionally initial literacy testing was taking place when students first began their courses. A literacy assessment program titled Basic Key Skills Builder (BKSB), a UK based program, was used along with a teacher interview and a short writing piece. However, the learning staff had not seen the need to test students' numeracy skills, whereas nursing manager and teachers believed this was a key area of weakness; students having to achieve 100% in their medications course (HLTEN507C) to become an enrolled nurse. Thus by constant conversations the researcher was able to have numeracy testing introduced at both campuses. She was also able to work with the commercial officer responsible for the BKSB to make it more contextualised to the Australian language and vocational environment. These changes were accepted by the BKSB UK company.

This new contextualised version of the BKSB is now being implemented across all TQB campuses to assess commencing students' literacy and numeracy attainment and provide students with ongoing online support to remediate their LLN skills gaps.

*Phase 6. Collaborating with HLTEN507C teachers and learning support staff to develop a 2 day numeracy workshop.* Medications calculations teachers shared their workbooks and resources as well as offered input into areas of need. The students' BKSB numeracy diagnostic spikey profile was also analysed to find which numeracy skills applicable to medications calculations were most lacking. These were: fractions, decimals, formula, and basic areas such as division, multiplication and metric conversions (Tables 1 & 2). A workshop was developed commencing with building students' basic numeracy skills and proceeding with skills to manipulate formula in the form of fractions. This was developed at ACSF Level 3 extending to ACSF Level 4 for more complex formula calculations. It combined a face-to-face animated PowerPoint presentation method, with students simultaneously completing a workbook based on the PowerPoint delivery. Assessments utilized a medications computer program available in the Learning Support Rooms but very

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much underutilized, and also a practical session with students calculating and then practicing drawing up correct amounts with various sized syringes [without needles and using water]. Additionally students practiced each formula with exercises from a textbook available in the library where the workshop took place. The workshop was reviewed by the lead HLTEN507C teacher before the June delivery and then again before the September delivery, with suggested changes being made. The researcher also sought the opinions of students, learning fractions support and library staff to make further updates.

Table 1. Example of a Spikey Profile – Course and Student spikey profiles

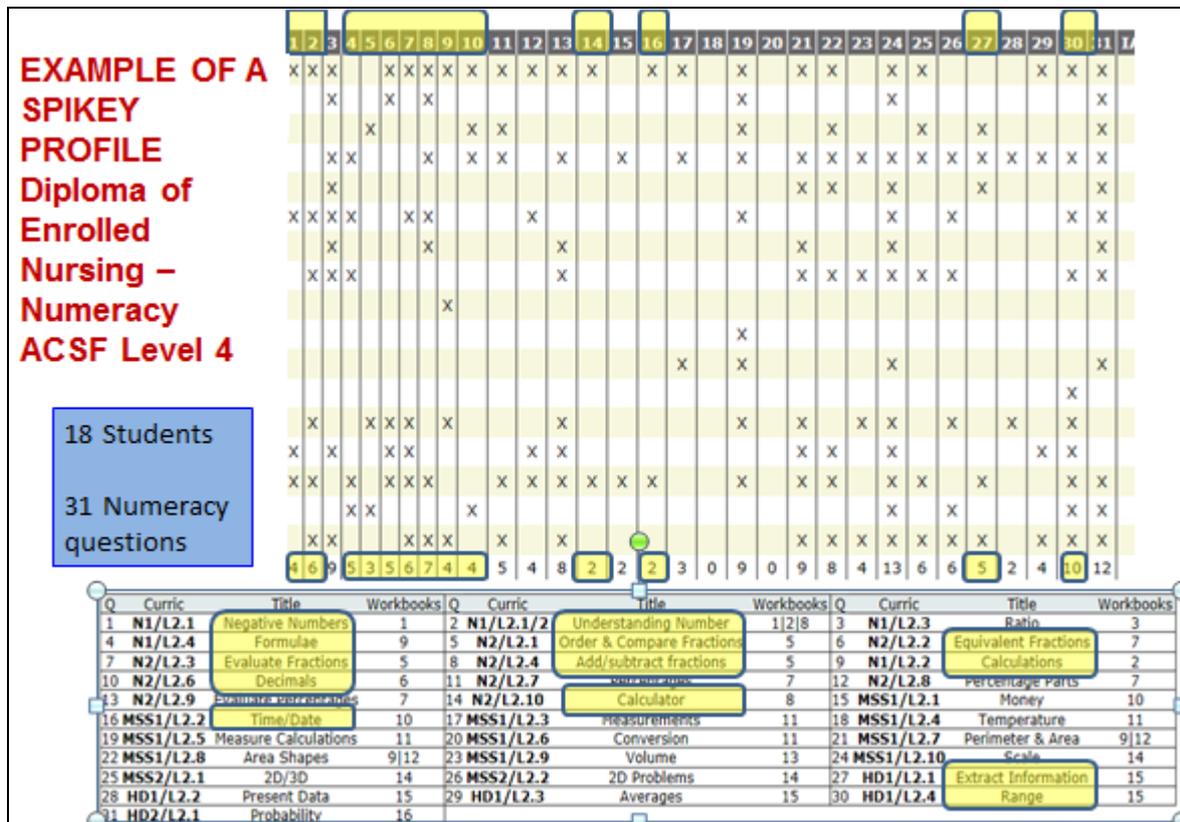


Table 2. Example of identifying Critical Skill Gaps - Numeracy for Diploma of Enrolled Nursing

13 of 30 NUMERACY QUESTIONS NEEDED FOR NURSING [medications calculations]					
IN ORDER OF IMPORTANCE:					
1. FRACTION Q.s	5 Order fractions	6 Equivalent fractions	10 Decimals	7 Evaluate fractions	8 Add/subtract fractions
2. NUMBER Q.s	1 Negative numbers	2 Number	9 Calculations	27 Extract Information	30 Range
3. BASIC SKILLS Q.s	14 Calculator	16 Time & Date	4 Formulae		

STUDENT ERROR RATE [18 students] – colour coded for Questions above

HIGHEST ERROR RATE	2	7	8	30		
2 <sup>ND</sup> HIGHEST ERROR RATE	1	4	6	9	10	27
LOWEST ERROR RATE	5	14	16			

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*Phase 7. Collaborating with teachers and learning support staff to develop an initial 14 day literacy & learning skills program.* The health manager then requested a further literacy program to be developed. One problem she and other teachers had talked about was plagiarism, as well as lack of class participation, the latter had already been noted by the researcher. Based on this information, earlier noted conversations and classroom observations, the researcher developed the *123 Program*, which apart from using the FSK units described above, linked to three nursing units: *HLTAP 401B confirm physical health status*, *HLTAP501C Analyse Health Information* (two anatomy units) and *HLTIN301C Infection Control*. It additionally sought to build critical thinking, which every teacher in the nursing staff room had commented on as lacking, and linked critical thinking to the practices/ethos of Florence Nightingale, which still underpin the nursing profession; in this way enculturating students to become aware of the ‘Discourse’ of nursing, the learning and employability skills needed. Note taking and classroom participation without plagiarism were other themes of this program. One method was to utilize a lecture on the history of nursing with note taking practice, then teaming up students from diverse cultural backgrounds to work on a research project regarding an outstanding Australian nurse [as listed in their nursing fundamentals textbook], with individual and group assignments to be submitted.

The program has since been conducted over a shortened time of ten days for a smaller mid year intake, and then as a one week program followed by a half day for five weeks in January, February and March of 2015. As part of the cyclical process these various options are now being reviewed as to their effectiveness – with teacher and student feedback as well as data analysis.

*Phase 8. Collecting and analysing data from the above two programs.* Data that has been collected and analysed includes students’ BKSB literacy and numeracy scores, student attendance and assessment outcomes for the two support programs, as well as data regarding successful completions of nursing units, *HLTEN507C* and *HLTAP401B*. This is more fully described in the DATA section below.

*Phase 9. Continuing the cycle in the Health faculty – and recommencing the process in other faculties.* The same process has now been conducted for Diploma of Small Business and Justice Studies students as well as an ongoing process with Health faculty. Collection and analysis of student data has been a key part of this process.

### *Data re LLN Levels & Student Completions*

Apart from developing and implementing LLN support strategies by means of the action research cyclical phases, the study reviewed literacy and numeracy diagnostic data from the BKSB testing, as well as unit completion data. Unit completion data was data from 2013 semester 2 students, for the medications unit *HLTEN507C* linked to the numeracy workshops. The second set of data was linked to the literacy *123 Program* and its effect on completions for the very first nursing unit *HLTAP401B* regarding the difficult topics of anatomy and physiology.

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*Using Numeracy data and students' spikey profiles to develop a Numeracy Program:* to devise a program to assist students pass their medications calculations unit HLTEN507C, apart from reviewing unit workbooks and other related curriculum materials and gaining teacher insights, results for students' numeracy BKSBS testing at Level 4 ACSF were reviewed – particularly the spikey profile for all students in individual classes. Additionally the course spikey profile of mathematical skills needed for nursing medications was also analysed. BKSBS assessment included 31 numeracy skills questions. Those skills specifically needed for medications calculations were highlighted. They constituted the course spikey profile. The class error rate in those crucial numeracy skills for nursing constituted the class spikey profile, the numeracy skills gaps. In order of importance they were: first, fractions (decimal and common fractions); second number manipulation; and third, basic numeracy calculations.

Students' error rate was analysed and it was found the highest error rate for calculating with fractions was how to evaluate fractions and how to add and subtract fractions. The second highest error rate also related to fraction problems: understanding equivalent fractions and decimals, with lesser problems occurring with ordering fractions. In other words common fractions and decimal fractions were areas of high need. Analysing the rest of diagnostic assessment, it was evident that out of the course spikey profile skills, only time and date along with using a calculator were areas not needing much attention. Other skills involved with number interpretation and calculation were of high or medium need and therefore also had to be included in the support program.

Next medications support program attendance data was correlated with outcomes for the nursing unit, HLTEN507C, it supported. Figures available for one class at Alexandra Hills are outlined in Table 3, indicating a positive impact for those attending the tailored numeracy support class. A limitation has been although data was collected for Loganlea. It was collected as a combined result for both theory and calculations. So information regarding the impact of the purely *calculations* workshop is not available for Loganlea.

**Table 3. Data re Calculations Workshop participation & successful HLTEN507C Calculations Exam**

Alexandra Hills - HLTEN507C 2nd Sem, 2013 class	No students attending	No. of passing students	% Pass Rate
Students attending Medications Calculations Workshop	7	6	86%
Students not attending Meds Calcs workshop	22	9	41%
TOTAL number of students attending HLTEN507C	29	15	52%

*Data indicating impact of LLN levels on learning and engagement:* Data for the two campuses confirmed observational conclusions that there was a greater difference in populations than was apparent in the ABS information. This was data for 140 commencing

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nursing students, the entire newly enrolled nursing cohort for January 2014 at both campuses. Documentary data was collected from TAFE administrative records for the first completed nursing unit *HLTAP401B Confirm Physical Health Status* as well as data from the researcher's introductory LLN foundation skills program *123 Program: get ready for Health – a pathway to the Diploma of Nursing*, which 108 students participated in.

To fully cope with the requirements of an AQF Diploma course, entering students need to be competent at ACSF Level 4. This means students assessed using the BKSB needed to attain 75% to be competent at ACSF Level 4. Data collected revealed the following:

Students at Alexandra Hills achieved an average of 46% literacy and 43% numeracy with a scores ranging for literacy from 29% to 66%, and for numeracy from 29% to 77%. Interestingly all of the four students who achieved either the lowest or highest scores successfully completed their HLTAP401B unit. Also all four students attended the *123 Program*.

Students at Loganlea achieved an average of 39% literacy and 44% numeracy with a scores ranging for literacy from 14% to 66%, and for numeracy from 14% to 87% - evidencing a wider disparity in LLN acquisition than at Alexandra Hills campus. Two students scored 14% in literacy. One of these did not complete the numeracy assessment, yet went on the successfully complete the first nursing unit; the other student scored 23% numeracy and had not completed HLTAP401B. The student who scored 14% in numeracy with a 38% score in literacy also failed to complete the first unit. These very low LLN scoring students had also participated in the *123 Program*.

Thus it was evident that at Loganlea there was a greater range of literacy levels. At Alexandra Hills the lowest literacy score was 29% whereas at Loganlea the lowest literacy score was 14%. These ranges were significant when considering successful completions in HLTAP401B.

*Comparison of completion data for HLTEN401B with 123 Program Attendance & ongoing Individual learning support:* The impact of very low literacy levels became evident when reviewing data for 123 Program attendance linked to completion of the first nursing anatomy and physiology unit HLTAP401B. Initial analysis indicates there was a significant benefit to students from attending the *123 Program's* intensive 14 day literacy program which included digital literacy, reading for technical vocabulary, in depth reading, writing and learning skills – all of which were directly connected to the Discourse of nursing, the generic LLN needs vocational nursing units and to three specific units. However when including the literacy data above, an assumption could be made that when students' literacy drops significantly below 30% at ACSF Level 4, in spite of receiving intensive literacy and learning skills support, this support is not sufficient to enable success in a diploma level vocational unit.

Details of effect of the support program at the two campuses are as follows:

At Alexandra Hills forty four students were enrolled in their first nursing unit HLTAP401B, thirty three of these students also attended the literacy *123 Program*. Of the students

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attending, thirty one passed their nursing unit, that is 94% passed. Of the eleven students who did not attend the literacy support program six students passed their first nursing unit, that is a pass rate of 55% (Table 4).

**Table 4. Alexandra Hills correlation HLTAP401B outcomes & 123 Program attendance**

Alexandra Hills	No. Students attending	No. of passing students	% Pass Rate
Students attending 123 Program	33	31	94%
Students NOT attending 123 Program	11	6	55%
TOTAL number of students in HLTAP401B	44	37	84%

At Loganlea ninety six students were enrolled in their first nursing unit HLTAP401B, seventy five of these students also attended the literacy *123 Program*. Of the students attending the *123 Program*, fifty two passed their nursing unit, that is 69% passed. Of the twenty one students who did not attend the literacy support program seven students passed their first nursing unit, that is a pass rate of 33% (Table 5).

**Table 5. Loganlea correlation HLTAP401B outcomes & 123 Program attendance**

Loganlea	No. Students attending	No. of passing students	% Pass Rate
Students attending 123 Program	75	52	69%
Students NOT attending 123 Program	21	7	33%
TOTAL number of students in HLTAP401B	96	59	61%

Additionally, ongoing individual learning support data available from the Alexandra Hills campus showed that of the 25 students who accessed this ongoing support, 24 students had also attended the *123 Program*. Of these 24 students 96% were successful in their first nursing unit HLTAP401B. Therefore it could be said that participating in an initial intensive literacy program, followed up by ongoing learning support had been extremely beneficial for the students. Although there was no similar data for the Loganlea *123 Program* students, Loganlea learning support data revealed that in July, August and September of 2014, a total of 332 visits to the Learning Skills centre was made by nursing students (at the time an average

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of 220 students were enrolled at Loganlea who were 1<sup>st</sup> semester, 2<sup>nd</sup> semester and 3<sup>rd</sup> semester students).

### ***Effects of funding cuts on student support***

However, even though ongoing learning support seems to be a vital contributor to students' success because of funding cuts to the entire VET sector in Queensland, this has bitten deep into TAFE staffing, with presently a drastic curtailment in support hours available at the two campuses in question.

Research reveals that from March 2012 to the end of December 2013, TAFEs across Queensland lost '1,610 full time positions and 1,889 positions by headcount' (Terauds & McCollow, 2014, p.10) with \$78.8 million being cut from training, tertiary education and employment in Queensland at this time (Wheelahan & Sheehan, 2012). Between 2013 and 2015 there has been even more 'shedding' of both teaching and administrative positions. Added to this is the added cost to TAFE of 'renting' their previously owned premises from the newly constructed statutory authority Queensland Training Assets Management Authority (QTAMA); for example, nearby TAFE Queensland South West now has to pay an increased rent of \$4.1 m (Backhouse, 2015).

Even more recently, during 2014 draconian funding cuts adversely affected the student experience. This is exemplified at the research sites regarding access to learning support: previously at Alexandra Hills campus a support teacher was available four days a week and she was able to arrange her time to flexibly fit in with student timetabling. In first semester 2015 in a response to funding cuts at Alexandra Hills, learning support was only available once a week - for the entire campus – and at a time when nursing students were attending their nursing class.

At Loganlea at the commencement of 2015, three teachers had been lost from the Learning Skills centre, with only one tutor available daily for the entire campus of 1,959 enrolled students. This one tutor was often sent to other campuses to support students elsewhere leaving the support centre closed. Some efforts to improve this situation have occurred with a fully qualified support teacher now being available five days a week but the one supposedly now full time tutor is still often only present twice a week. An academic higher level academic skills adviser is now available once a week in the library. The library has also begun an online support where students can connect to support teachers at Southbank; however, at the time of writing no students had availed themselves of this. Teachers had offered the view that for any students to come to learning support, rather than being online, it first needs to be face-to-face for students to feel confident in accessing this needed support. To have sufficient teachers physically present therefore is highly desirable for positive student outcomes.

Consequently the new Queensland government's promise to employ '100 new full-time equivalent teaching and support positions' across TAFE, as well as to 'invest \$3.1 million in student support services' (Queensland Labor Opposition, 2015, p.3) would go some way to

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alleviating the problem of funding needed support for students with significant LLN needs at TQB's diversely populated southern campuses. However at the time of writing this funding had not been forthcoming.

### **Conclusion**

The action research has shed light on the positive impact on support services, but also on how foundation skills training packages can be utilized cost effectively to improve student outcomes, with vocational and support teachers working more collaboratively together to improve the student experience and engagement.

Statistical data has also revealed that TQB's vocationally based LLN program, *the 123 Program*, followed up with ongoing student centred learning support can provide optimal success for students - even for those with significantly lower than ideal levels of literacy and numeracy. However there is a cut off point (for example those with between 14% and 29% LLN achievement) when students need to be redirected to ELICOS or other significantly longer LLN programs, before returning to their desired higher level courses, such as a diploma or advanced diploma.

That TQB is presently instituting rolling workshops and teacher up-skilling sessions linked to LLN teaching strategies, improved digital literacy delivery skills, and inclusive practices, plus campus wide LLN testing of all students to ascertain their literacy and numeracy levels is a positive way forward in progressing the action research and walking the tightrope between social responsibility and market forces.

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### Reference List

- Australian Bureau of Statistics.(2014a). Data Cubes, Adult literacy and numeracy skills, 1996, 2006, 2011-12, *Programme for the International Assessment of Adult Competencies, Australia, 2011-12, (Cat.no.ABS 4228.0)*. Retrieved from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4228.02011-12?OpenDocument>.
- Australian Bureau of Statistics.(2014b). Logan (C) (LGA). *Regional statistics-national regional profile-local government areas-Queensland*. Retrieved from [http://stat.abs.gov.au/itt/r.jsp?RegionSummary&region=34590&dataset=ABS\\_NRP9\\_LGA&geoconcept=REGION&maplayerid=LGA2012&measure=MEASURE&datasetASGS=ABS\\_NRP9\\_ASGS&datasetLGA=ABS\\_NRP9\\_LGA&regionLGA=REGION&regionASGS=REGION](http://stat.abs.gov.au/itt/r.jsp?RegionSummary&region=34590&dataset=ABS_NRP9_LGA&geoconcept=REGION&maplayerid=LGA2012&measure=MEASURE&datasetASGS=ABS_NRP9_ASGS&datasetLGA=ABS_NRP9_LGA&regionLGA=REGION&regionASGS=REGION)
- Australian Bureau of Statistics.(2014c). Redland (LGA). *Regional statistics-national regional profile-local government areas-Queensland*. Retrieved from [http://stat.abs.gov.au/itt/r.jsp?RegionSummary&region=36250&dataset=ABS\\_NRP9\\_LGA&geoconcept=REGION&maplayerid=LGA2012&measure=MEASURE&datasetASGS=ABS\\_NRP9\\_ASGS&datasetLGA=ABS\\_NRP9\\_LGA&regionLGA=REGION&regionASGS=REGION](http://stat.abs.gov.au/itt/r.jsp?RegionSummary&region=36250&dataset=ABS_NRP9_LGA&geoconcept=REGION&maplayerid=LGA2012&measure=MEASURE&datasetASGS=ABS_NRP9_ASGS&datasetLGA=ABS_NRP9_LGA&regionLGA=REGION&regionASGS=REGION)
- Australian Government – ASQA. (2015). Clause 1.7. *Users Guide to the Standards for Registered Training Organisations 2015*. Canberra: the Author. Retrieved from <http://www.asqa.gov.au/users-guide-to-the-standards-for-registered-training-organisations-2015/about-the-standards-for-rtos/standard-one/clauses/clause-1.7.html>.
- Australian Government, Department of Education and Training. (2014). *Review of Training Packages and Accredited Courses – Discussion Paper*. October. Canberra: the Author. Retrieved from <http://www.asqa.gov.au/users-guide-to-the-standards-for-registered-training-organisations-2015/about-the-standards-for-rtos/standard-one/clauses/clause-1.7.html>.
- Australian Industry Group. (2014). *Ai Group Pre 2014-15 Budget Submission to the Commonwealth Government*. Sydney: The author
- Australian Nursing Council. (2002). *National Competency Standards for the enrolled nurse*. Melbourne: Australian Nursing Council.
- Backhouse, A. (2015). Toowoomba teachers protest cuts to TAFE. *The Chronicle (Toowoomba)*. 29 January.
- Benseman, J., Sutton, A., & Lander, J. (2005). *Pedagogy in practice: an observational study of literacy, numeracy and language teachers*. Wellington: Ministry of Education Tertiary Education Learning Outcomes, New Zealand Government.
- Council of Australian Governments (COAG) & Standing Council on Tertiary Education, Skills and Employment (SCOTESE). (2012, Sept.). *National foundation skills strategy for adults*. Canberra: Australian Government Department of Industry.
- Council on Federal Financial Relations. (2013). *Queensland Implementation Plan – national partnership agreement on skills reform*. Canberra: the Commonwealth of Australia.

## Walking the Tightrope: market drivers vs. social responsibility with implications for LLN and inclusive teaching

---

- Crane, P., & O'Regan, M. (2010). *On PAR - Using Participatory Action Research to Improve Early Intervention*. Canberra: Department of Families, Housing, Community Services and Indigenous Affairs, Australian Government.
- Cope, B., & Kalantzis, M. (Eds.). (2000). *Multiliteracies – Literacy Learning and the Design of Social Futures*. South Yarra, Melbourne, Australia: MacMillan.
- Forward, P. (2014, January 15). *TAFE in the era of skills reform - an interview with Leesa Wheelahan*. Retrieved October 24, 2014, from The Scan, tertiary sector news and views: <http://the-scan.com/2014/01/05/tafe-in-the-era-of-skills-reform/>
- Hanushek, E., Schwerdt, G., Widerhold, S., & Woessmann, L. (2013). Returns to Skills around the World: Evidence from PIAAC. *European Economic Review, Elsevier*, 73(C), 103-130.
- Industry Skills Councils (Australia) (ISC). (2011). *No more excuses: an industry response to the language, literacy and numeracy challenge*. ISC Australia. Retrieved from [http://www.isc.org.au/pdf/NoMoreExcuses\\_FINAL%20single%20page.pdf](http://www.isc.org.au/pdf/NoMoreExcuses_FINAL%20single%20page.pdf).
- Industry Skills Councils. (2014). *Shared responsibilities, shared solutions - Analysis of the Training Package Continuous Improvement Process for the Industry Skills Councils Forum*. Industry Skills Council.
- Innovation and Business Skills Australia (IBSA). (2014a). *Frequently Asked Questions related to the TAE Training and Education Training Package*. May 15. Melbourne: the Author. Retrieved from <https://www.ibsa.org.au/training-education-tae>.
- Innovation and Business Skills Australia. (2014b). *Foundation Skills FSK information*. Retrieved November 4, 2014, from Innovation and Business Skills Australia - about us: <https://www.ibsa.org.au/foundation-skills-fsk-information>.
- Lacey, B. (2013, March 5). Review of apprentice wages to address issue of drop outs. *Toowoomba Chronicle*. ¶3. Retrieved from <http://www.thechronicle.com.au/news/review-apprentice-wages-address-issue-drop-outs/177784L9/>
- Mark, K., & Karmel, T. (2010). *The likelihood of completing a VET qualification: A model-based approach*. Adelaide: National Centre for Vocational Education Research (NCVER). Retrieved from <http://www.ncver.edu.au/publications/2272.html>
- Martin, A. (2008). Digital Literacy and the “Digital Society”. In C. Lankshear & M. Knobel (Eds.) *Digital literacies: concepts, policies and practices*. New York: Peter Lang. pp.151-176.
- Mikulecky, L. (2004). *Workplace literacy*. Indiana University. Retrieved 8 July 2015, from <http://www.sil.org/silewp/2005/silewp2005-007.pdf>
- Noonan, P., Burke, G., Wade, A., & Pilcher, S. (2014 Oct.). *Expenditure on education and training in Australia*. Melbourne: Mitchell Institute for Health and Education Policy.
- Queensland Labor Opposition. (2015, Jan.). *Rescuing TAFE*. Brisbane: Queensland ALP.
- Sayer, A. (2004). *Realism and Social Science*. London: Sage Publications.
- Searle, J. (2002). Situated Literacies at Work. *International Journal of Educational Research*, 37, 17-28.

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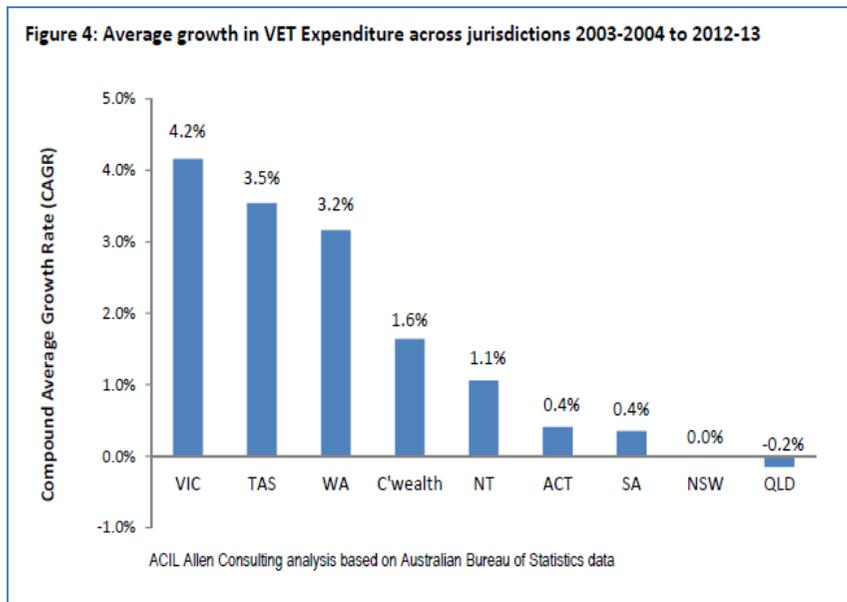
Short, T. & Harris, R. (Eds) (2014). *Literacy and workplace change*. Singapore: Springer Science + Business Media.

Terauds, D., & McCollow, J. (2014). TAFE in 2014: an update. *Queensland Teachers' Journal*. March 14.

Wheelahan, L., & Sheehan, B. (2012). TAFE cuts will affect everyone: state governments should think again. *The Conversation*. September 20.

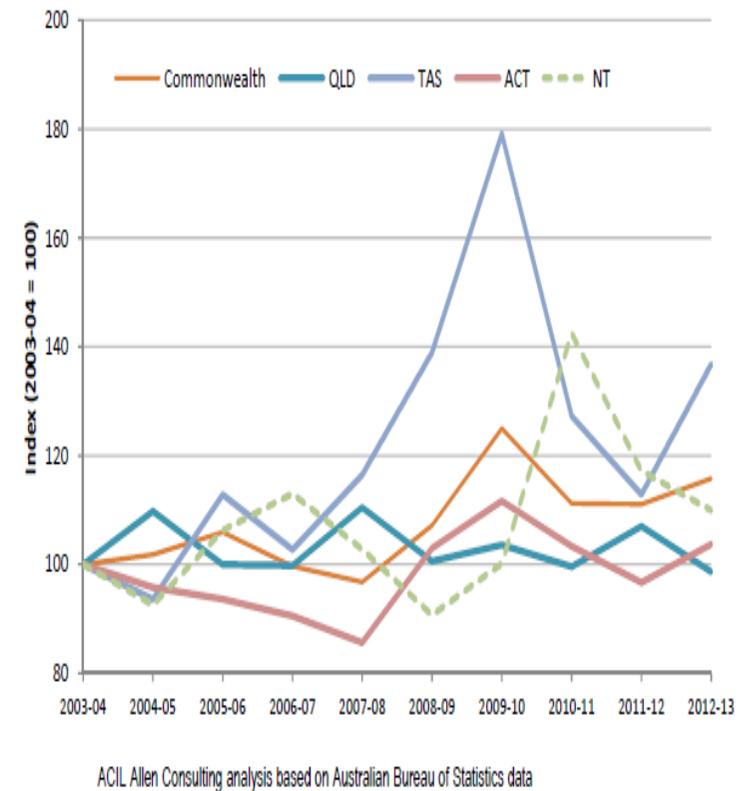
APPENDIX A. Education Expenditure across Jurisdictions – federal & state funding  
(Noonan, Burke, Wade, & Pilcher, 2014 Oct., pp. 6-8)

***i) Federal funding comparison:***



**Figure 3: VET Expenditure across the federation 2003-4 to 2012-13**

**Comparison 2 – Commonwealth, Queensland, Tasmania, ACT and NT**



APPENDIX A. Education Expenditure across Jurisdictions – federal & state funding  
(Noonan, Burke, Wade, & Pilcher, 2014 Oct., pp. 6-8)

***ii) State funding comparison:***

