

# The Australian literacy and numeracy workforce: a literature review

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Foundation Skills Literature Review Project  
Scholarship recipient

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# About the research

## *The Australian literacy and numeracy workforce: a literature review*

Joanne Medlin

Building the research capacity of the vocational education and training (VET) sector is of key interest to the National Centre for Vocational Education Research (NCVER). The Foundation Skills Literature Review Project, funded by NCVER, provided scholarships to practitioners to develop their research skills through undertaking literature reviews focused on key topics relating to foundation skills. Here 'foundation skills' refers to adult language, literacy (including digital literacy) and numeracy skills, as well as employability skills, such as problem-solving, collaboration and self-management.

The four main topic areas were:

- perspectives on adult language, literacy and numeracy
- policy contexts and measures of impact
- context and sites – pedagogy and the learners
- workforce development.

The literature reviews will form a key information source for the Foundation Skills Pod, a new resource hosted on VOCEDplus <<http://www.voced.edu.au/pod-foundation-skills>>. The Foundation Skills Literature Review Project is a partnership between NCVER and the University of Technology Sydney and the Australian Council for Adult Literacy.

In this review the focus is on workforce development. The continuing development of the adult language, literacy and numeracy, and employability skills workforce is critical. The National Foundation Skills Strategy for Adults includes a specific priority focus on workforce development, with the aims of this priority focus being threefold:

- to build the skills of specialist language, literacy and numeracy practitioners
- to develop the workforce to enable the effective teaching of employability skills
- to support vocational trainers to better integrate foundation skills with vocational training.

In undertaking a review of literature from the last 10 years, Medlin focuses on the literacy and numeracy workforce. She highlights the tensions for practice, professional development and the identity of the literacy and numeracy workforce that have arisen from the different perspectives on the contribution of adult literacy and numeracy to economic productivity, social cohesion and the development of the individual.

Dr Craig Fowler  
Managing Director, NCVER



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# Introduction

This report reviews literature on the Australian adult literacy and numeracy workforce. The review begins with the historical development of the field of adult literacy and numeracy teaching in Australia. It then provides information from literature published between 2006 and 2016 on the composition of the current Australian literacy and numeracy workforce, including comparisons with Canada, the United Kingdom and New Zealand, followed by research describing Australian literacy and numeracy practitioner qualifications. Also discussed are the roles of unqualified workers, volunteers and students and the link between teacher qualifications, teacher characteristics and student outcomes. The review includes literature on professional development and covers modes of training, useful professional development content and the efficacy of professional frameworks for the literacy and numeracy workforce.

## Methodology

To locate current literature, online academic databases and other sources were searched. Professional networks were also drawn on and clarification sought from six writers in the field<sup>1</sup>, personnel at LINC Tasmania<sup>2</sup>, and at the Transitioning Programmes/Foundation Skills Branch, Australian Government Department of Education and Training.

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1 K Yasukawa, P Osmond, M Circelli, B Boughton, S Hodge and L Wignall.

2 A.Planchon: Manager, Literacy Services & M.Christie: Services Coordinator, Literacy and Learning Policy.

# Historical development of the literacy and numeracy workforce

According to Quigley (2006), adult literacy classes, as a documented event in the Western world, have been traced to the 1812 Bristol Adult School in England, where classes were initially established to teach locals to read the bible. A succession of discrete and unrelated programs across the United Kingdom, the United States and Canada from that time established literacy classes for adults as a social movement outside mainstream education, without the support of a formalised professional field. Organisers and teachers were driven by the underlying purpose of the instruction, which at times included religious proselytisation, social indoctrination, relief from poverty and the improvement of the armed forces (Quigley 2006).

One hundred and fifty years later, countries with compulsory education systems, including Australia, assumed that illiteracy in their adult populations was 'confined to an irreducible minimum, composed mainly of the mentally incapable' (UNESCO 1953, pp.9–10). In reality, up until the 1970s, the majority of the population left the schooling system early and many occupations did not require highly literate or numerate employees. Some remediation of literacy problems for adults occurred in the armed forces, where literacy problems had been recognised during the Second World War (Nelson 2010), but was not common in other education sectors.

Meanwhile, other areas of the world were making significant progress in the development of literacy programs for adults. By 1961 Cuba had a mass literacy campaign underpinned by the belief that universal literacy leads to human liberation (Nassif 2000, in Boughton & Durnan 2014). This inspired other African and Latin American countries to introduce large-scale, community-embedded literacy programs, including in Brazil, where Paulo Freire became an influential literacy leader (Boughton & Durnan 2014).

Scholars who have traced the history of literacy and numeracy in the UK, US, Canada and Australia claim that the adult literacy and numeracy movement emerged in the 1970s in response to movements to expand access to education and in the belief that social power and literacy were interdependent (Osmond 2016; Campbell 2009; Hamilton & Hillier 2006; Quigley 2006; Johnston, Kelly & Johnston 2001). In Australia at that time one of the champions of adult literacy was the Australian Association of Adult Community Education, which established a working party to focus on adult literacy (Nelson 2010). This led to the formation of a national literacy and numeracy professional body to disseminate information and to provide voluntary networking opportunities – the Australian Council for Adult Literacy (ACAL), established in 1977 (Nelson 2010; Johnston, Kelly & Johnston 2001).

Adult literacy entered the mainstream education system in Australia in 1974, when the Kangan report proposed that the TAFE (technical and further education) system include literacy as part of its offerings in general education (Kangan 1974). The report, entitled *TAFE in Australia* (Kangan 1974), made recommendations that significantly impacted on the way in which the professional field of literacy and numeracy teachers developed (Osmond 2016). Osmond (2016) explains that the Kangan report situated literacy and numeracy alongside technical training but without imposed delivery structures. This allowed the teachers and learners to shape the field of adult literacy and numeracy in Australia so that

it centred on learner needs and holistic provision (McKenna & Fitzpatrick 2005). The Kangan review also resulted in opportunities for teachers to be employed full-time with a title directly linked to literacy and numeracy – a significant step towards professionalising the field.

This stage of adult literacy and numeracy provision in Australia could be described as a grassroots social movement, one driven largely by student-centred holistic provision, with teachers basing the design of resources and the teaching and learning activities on the learners' needs. Brennan, Clark and Dymock (1989) found that most literature available at the time focused on advocacy issues. With neither regulated frameworks for delivery nor a body of literature informed by research, professional development centred on teachers' immediate needs. In analysing articles in the Victorian Adult Literacy and Basic Education Council (VALBEC) journal during the 1970s and early 1980s, Campbell (2009) identified multiple approaches to teaching, based on different philosophies and pedagogies.

In an era when the Australian literacy and numeracy profession was defining itself, the work of Paulo Freire was influential, particularly following his Australian visit in the early 1970s (Osmond 2016; Yasukawa & Black 2016; Campbell 2009; Johnston, Kelly & Johnston 2001; Coben & Chanda 2000). The mass literacy campaign model used by Freire makes literacy a community business rather than the domain of the literacy and numeracy specialist, so it is perhaps ironic that Freire's philosophies were often adapted to underpin the ethos of the emerging profession. Freire's influence can be seen in the following teaching approaches:

- negotiated learning
- teacher as facilitator (as opposed to teacher as expert)
- drawing on the lived realities and experiences of students
- involving learners in goal setting and driving the content of learning
- in the 'concepts of emancipation and liberation prominent in the professional discourse for some decades' (Osmond 2016).

Although the National Board of Employment, Education and Training in Australia reported that prior to the 1990s there 'was little or no systematic professional development available for adult literacy teachers' (1995, p.95), those who have interviewed practitioners from the era paint a picture of dynamic professional development, which grew out of practical experience and student needs, as identified by the teachers. The humanist philosophy of education, which generally underpinned literacy and numeracy teaching in Australia at the time (Osmond 2016), is also evident in the manner in which practitioners shared the responsibility for educating each other by running workshops, sharing resources and contributing to publications coordinated by bodies such as the Victorian Adult Literacy and Basic Education Council, NSW Adult Literacy Information Office (ALIO) and the Adult Education Resource Information Service (ARIS; examples in Osmond 2016; Campbell 2009; Hazell 2002; Johnston, Kelly & Johnston 2001).

In the late 1980s government and business interest in adult literacy was sparked by the results of large-scale literacy surveys. In 1987 Canada conducted its first literacy survey called 'Broken Words', which revealed widespread literacy problems among the adult population. The results were met with 'doubts and disbelief amongst policy makers and the general population at the time' (OECD 2011, pp.23–4). This was followed by further



national literacy surveys in Canada and the US, which created international interest in adult literacy levels. Subsequently, an Australia adult literacy action campaign was implemented in 1987 and included a national survey of adult literacy, reported in *No single measure* (Wickert 1989). The title of the report was significant in communicating the view that literacy was a complex concept and that there was no single process or tool that could measure an adult's literacy.

The focus on adult literacy and numeracy created demand for trained teachers to work in a range of programs in the 1990s (Johnston, Kelly & Johnston 2001). The Coordinating Agency for the Training of Adult Literacy Personnel in Australia was granted \$4.5 million annually for three years from 1990 to expand provision and provide the opportunity for planned professional development (Ryan 1991). The Training Guarantee Act 1990 led to a competitive system of public and private providers tendering for federal education grants (Kell, Balatti, & Muspratt 1997). For the literacy and numeracy workforce this created different employment opportunities as new providers entered the 'market'. Literacy and numeracy teachers required professional development aimed at creating 'a repertoire of skills quite different from those associated with traditional roles of teaching' (Kell 1998, p.23). For example, during 1991–92 the role of Australian adult literacy and numeracy teachers expanded to include regulated formal workplace training through the Workplace English Language and Literacy (WELL) program. This meant teachers had to develop, deliver and assess customised workplace training and resources, and implement strategic initiatives for industry-wide projects and programs (Misko 2006; Berghella, Molenaar & Wyse 2006). Resources, workshops and networks were implemented to train staff throughout the lifetime of the program (up until 2015 when the final WELL projects were phased out).

The growing national focus on literacy for work changed the nature of professional development. Government bodies and employers of literacy and numeracy practitioners increasingly recognised the potential of investing in literacy and numeracy development and directing the types of training given to and required by literacy and numeracy professionals. For example, the 1993 National Collaborative Adult English Language and Literacy Strategy resulted in professional development 'to train specialists in writing integrated curriculum' (Kell 1998, p.17) and the 1993 National Framework for Professional Development of Adult Literacy and Basic Education Personnel provided a nationally consistent approach to professional development (Misko 2006). The professional development was underpinned by 13 principles, based on the main features of the vocational education and training (VET) environment, such as competency-based training, with the aim of expanding literacy and numeracy in VET via its integration into competencies (Misko 2006).

Another program which increased the demand for trained literacy and numeracy teachers and required specific methods of assessing, and therefore professional development, was the 1998 Literacy and Numeracy Program (LANT). This program brought a new cohort to classes – those in long-term unemployment and in receipt of unemployment benefits, who were required under the Australian Government's mutual obligation programs to study with the aim of developing their literacy and numeracy skills to improve access to further training and work (Misko 2006; Searle 2004). In 2002 the Literacy and Numeracy Program was superseded by the Language, Literacy and Numeracy Program (LLNP), in which LANT and the Advanced English for Migrants Program were amalgamated. English language and literacy and numeracy were combined in government documentation for expediency and to 'provide a more integrated management approach' (ACIL Allen Consulting 2015).

Practitioners were required to pre- and post-assess student performances in literacy and numeracy against the National Reporting System (NRS). Acceptable student outcomes were determined by the highly regulated program contract, which required teachers to closely monitor and report measurable gains. 'Soft' outcomes such as increased self-esteem and social and community participation, which had been important aims of literacy and numeracy delivery in the 1970s and 1980s, did not count for the purposes of meeting the contract requirements. Record keeping was central to the delivery process (Misko 2006), increasing the need for teacher training in both organisational processes and in assessing and measuring the literacy and numeracy outcomes defined by the NRS. (In 2013 the Language, Literacy and Numeracy Program was superseded by Skills for Education and Employment.)

The introduction of formalised training structures required further professional development for the literacy and numeracy workforce. For example, the introduction in Victoria in 1993 of an accredited course, the Certificate in General Education for Adults (CGEA), created a model through which teaching was to be approached, with four domains as the focus of learning. Professional development was required to train teachers to fulfil the regulatory requirements of the CGEA, such as participation in moderation sessions (Campbell 2009). Campbell explains that many in the literacy and numeracy workforce perceived accredited curricula as a change in the pedagogical understandings they required because it moved delivery from learner-centred to course-centred. There was a perception that teachers' work was being 'filtered through different regulatory practices, and exercised through the demands of funding agreements and accountability measures' (Campbell 2009, p.18). This grew from what McCormack (2016) identifies as a conflict in the perception of literacy: practitioners were focused on holistic literacy development while policy-makers saw adult literacy only in a workplace context.

In Australia in the 1990s there was no uniform qualification recognised as defining a literacy and numeracy practitioner, and no agreed concept of what constituted one. The settings in which adult literacy and numeracy practitioners worked were diverse and required varying skill sets and levels of qualification. Workplaces in which literacy and numeracy practitioners operated included TAFE institutes, community settings, workplaces, prisons, Aboriginal communities, neighbourhood houses, senior colleges and evening colleges (Scheeres et al. 1993). Scheeres et al. (1993) undertook research to define the literacy and numeracy workforce, the aim being to inform the development of literacy and numeracy staff training courses, including higher education courses. Their comprehensive analysis was a result of workshops, interviews, observations, reference to job descriptions, and consultations with members of the profession and other researchers. They described the workforce as practitioners rather than teachers because of the multifaceted roles the teachers undertook. They emphasised the need for professional qualifications based on their findings: that the role of literacy and numeracy practitioner combined theoretical understandings, content knowledge and high-level communication and organisational skills (Scheeres et al. 1993).

In 1995 the National Reporting System further changed the teaching environment and created more teacher-training needs. The NRS was the first Australian national measure of language, literacy and numeracy and was to provide a common language and framework for the assessment and delivery of funded training where measured outcomes were required. (In recent years it has been superseded by versions of the Australian Core Skills Framework.)

As literacy and numeracy practice in Australia moved closer to an outcome-focused model, where mechanisms such as the National Reporting System, accredited curricula and training packages directed and quantified student learning, multifaceted professional development was required. The literacy and numeracy profession needed both ongoing training and skill development in literacy and numeracy teaching methodologies and theory, as well as training in delivery structures and the bureaucracy associated with the educational environment in which they worked.

In response to a direction from the Commonwealth Minister for Employment, Education and Training, the National Board of Employment, Education and Training investigated the strategies that should be in place to provide quality delivery of literacy teacher education by the year 2000 (1995, p.5). The board described adult literacy as moving from a field based upon social justice imperatives, to one operating under an environment of economic accountability: 'career pathways for teachers of literacy should be explicit – not just for the benefit of teachers themselves, but to improve the quality of their teaching' (National Board of Employment, Education and Training 1995, p.48). The report discussed the need for opportunities for professional development throughout the lifetime of a practitioner's career, with an emphasis on the need to develop new skills related to changing technology, delivery structures and new theoretical and practical understandings (Wickert et al. 1994, in National Board of Employment, Education and Training 1995). The overall theme of the report was that professional development for literacy practitioners was inadequate. The lack of opportunities was linked to the employment status of the workforce: casualisation, part-time employment and employment contingent on funding, which was often short-term and did not create an environment where employers were committed to developing the existing skills of the workforce. Often professional development opportunities were negotiated and funded by the practitioners themselves, a situation described as leading to 'feelings of exploitation and resentment that are conducive neither to morale nor good teaching practices' (National Board of Employment, Education and Training 1995, p.51). The report called for defined, accountable and transparent understandings of the required competencies for entry-level teachers through to experts, although this was tempered by the acknowledgment that the vast range of contexts in which literacy teachers operated did not lend itself to prescribed generic competencies (National Board of Employment, Education and Training 1995). Around this time, US researchers also cautioned against over-regulation because the diverse contexts in which adult literacy and numeracy professionals operated required training that was contextualised to local settings and needs (Wagner & Venezky 1999).

The international surge of interest in adult literacy levels that started with the 1987 Canadian national literacy survey ultimately resulted in the International Adult Literacy Survey, conducted in many Organisation for Economic Co-operation and Development (OECD) countries (2011). Australia participated in this survey in 1996 through the Survey of Aspects of Literacy (Australian Bureau of Statistics 1997). The results of the International Adult Literacy Survey revealed that across the developed world a large proportion of adults, including Australian adults, did not have adequate literacy skills (OECD 2011); this ensured ongoing interest in adult literacy and numeracy in Australia over the following decades. Increasingly, the literacy and numeracy workforce role changed, as decision-making about content and assessment moved away from practitioners and into the hands of 'consumers, employers and industry' (Searle 2004, p.86).

Internationally, UNESCO (United National Educational, Scientific and Cultural Organization) was urging governments to take responsibility for developing the basic skills of their adult populations (UNESCO 2002). UNESCO's view of literacy was that it was a human right – in contrast to the OECD, which promoted literacy as an economic necessity (Black & Yasukawa 2010). Despite the interest in, and the increasing demand for, adult literacy and numeracy delivery, research into effective means of training literacy and numeracy practitioners was minimal. In addition to university qualifications, two statement-level courses were introduced in Australia in 1995 to increase capacity (Roberts & Wignall 2010): the Adult Literacy Teaching course and the Adult Numeracy Teaching course. Holding the Australian model as exemplary, Coben and Chanda (2000) praised the Adult Numeracy Teaching course for its progressive approach to addressing adult numeracy teaching and reported that it was being well received. However, the lack of research into the efficacy of professional development was noted by Condelli (2006), who particularly observed that scant research was conducted to determine the effectiveness of such courses. Condelli (2006) described this as typical of most professional development programs, explaining that, despite the popularity of training materials and programs, little or no research followed to determine how effective they were. Evaluation of professional development generally focused on participant satisfaction and rarely on genuine outcomes, which could be noted in changes to methodology or student performance (Belzer 2005).

In 2006 Australia participated in another international skills survey: the Adult Literacy and Life Skills Survey. Yasukawa and Black (2016) suggest the interpretation of the Adult Literacy and Life Skills Survey as a comparative tool was a pivotal step towards defining a single measure of literacy across populations, cultures and nations (in contrast to Wickert's notion of 'no single measure' in 1989), one that could be used to inform and direct policy development and to contain the national definition of literacy within a human capital framework. The OECD reported that low literacy and numeracy skills led to an increased likelihood of unemployment, low income earnings, lack of access to technology, poor health and low community engagement (OECD 2011). The results increased the momentum of literacy and numeracy delivery in Australia, particularly within vocational education, where it was seen as integral to course completion, skill development and subsequently employment. Literacy and numeracy was listed as one of four focus areas for strengthening the National Reform Agenda by the Council of Australian Governments (COAG; Choy, Haukka & Keyes 2006), which resulted in closer scrutiny of the literacy and numeracy profession. Defining the role and skill level of the literacy and numeracy practitioner became increasingly important as literacy and numeracy moved into a space where it was accountable to business and government. In the UK, Hamilton and Hillier described this space as a 'pivotal position within policy and within the discourses of human resource development and social inclusion' (2006, p.14).

Internationally there was a lack of agreement on what constituted a literacy and numeracy professional and whether any qualifications and skills could be considered uniform, given the different working contexts in which the literacy and numeracy workforce operated (Quigley 2006; Hamilton & Hillier 2006). In 2002 new qualifications for tutors were introduced in the UK (Hamilton & Hillier 2006) and by 2006 in the US 14 states either recommended or required adult literacy and basic education practitioners to have a basic education certificate (Quigley 2006). In Australia, Mackay et al. (2006) conducted research to examine the professional development needs of the literacy and numeracy workforce. They divided the field into three groups: literacy and numeracy specialists; literacy and

numeracy volunteers; and vocational teachers who catered for students with literacy and numeracy needs within the overall framework of their vocational courses. They found that much professional development was about compliance rather than literacy and numeracy teaching and content (Mackay et al. 2006).

In Australia, where there is no current national policy specifically focusing on literacy and numeracy, literacy and numeracy has recently been resituated in the educational landscape under 'foundation skills' – a term introduced to describe literacy and numeracy as part of a suite of skills linked to employability (Black & Yasukawa 2010). In examining literacy and numeracy in Australia, Perkins (2009) linked the absence of a current national literacy and numeracy policy to a lack of awareness by key decision-makers about literacy and numeracy issues and suggested that raising awareness could be achieved by changing the terminology used to a broad and easily understood term such as 'core skills or foundation skills' (Perkins 2009, p.8) because:

New policies may have more chance of influencing mainstream decision-making if they align with the emerging vision for Australia in 2020, and treat literacy and numeracy as a means to various ends.

The Standing Council on Tertiary Education, Skills and Employment (SCOTESE) released the National Foundation Skills Strategy for Adults in 2012 and explained that foundation skills covered English language, literacy, numeracy and employability skills (Standing Council on Tertiary Education, Skills and Employment 2012). Wignall (2015) undertook research to inform the development of a professional standards structure and found that among practitioners the term 'foundation skills' was increasingly accepted as a useful way to engage with stakeholders outside the field.

A professional standards framework for the foundation skills workforce is currently under development, following research and consultation by the National Foundation Skills Strategy into ways to strengthen the delivery of foundation skills (discussed in later sections). Research informing the framework indicated that specialisations within foundation skills may need to include English language, literacy, numeracy, digital literacy, work-readiness and possibly specific skills for delivery in particular contexts or to particular learners (Wignall 2015).

Language skills, referring to the acquisition of the English language, have increasingly been grouped with literacy and numeracy skills. This may be because it is expedient for funding bodies to group skill areas together. For example, the proposed amalgamation of Skills for Education and Employment and the Adult Migrant Education Program is recommended to the Australian Government as a way to provide economies of scale and scope and enhance program administration efficiency (ACIL Allen Consulting 2015). In relation to the introduction of foundation skills, the Standing Council on Tertiary Education, Skills and Employment states that 'establishing clear criteria for identifying foundation skills specialists will allow the purchasers of services to make informed decisions about the quality and suitability of practitioners' (2013, p.8). However, teachers of English language in Australian educational settings on programs such as Skills for Education and Employment, the Adult Migrant Education Program and English language acquisition courses in TAFE institutes and community providers have a specialist TESOL (teachers of English to speakers of other languages) qualification (VicTESOL 2016). For example, the largest employers in the sector, TAFE institutes, use different job descriptors and require different qualifications for

English language practitioners from those required for literacy and numeracy practitioners. The fields are not identical: 'while ESOL and literacy provision are related, they are not the same and there are important differences between the fields that should not be overlooked' (Benseman, Sutton & Lander 2005, p.72).

Due to the multicultural and multilingual nature of Australian society, it is necessary for literacy and numeracy practitioners to have a set of strategies to develop learners' existing English language skills, but typically a certain level of spoken English proficiency is assumed, enabling the learners to participate in literacy and numeracy learning where English is the language of instruction. If expected to teach across the range of foundation skills, the literacy and numeracy workforce will be challenged to develop additional expertise: the inclusion of English as a second/additional language or dialect in the teaching repertoire creates a challenge in terms of qualifications, expertise and experience. Similarly, many of those qualified in TESOL will be challenged to develop additional expertise in teaching literacy to learners for whom English is the mother tongue, and in teaching numeracy. Moreover, as foundation skills includes employability skills, according to the National Foundation Skills Strategy for Adults (Standing Council on Tertiary Education, Skills and Employment 2012), literacy and numeracy and TESOL professionals are challenged to consider how these can be embedded – or taught separately.

# The current literacy and numeracy workforce

While repeated attempts to comprehensively describe the literacy and numeracy professional have been inconclusive, the literature shows that identification of this role is deemed to be important for reasons that include:

- recognising and categorising knowledge, skills and experience
- communicating and employing literacy and numeracy practitioner skills effectively
- identifying deficits and informing professional development
- creating a basis from which to professionalise the field.

This section reviews surveys of workforces in Australia (Circelli 2015), Canada (Leckie et al. 2014), the UK (Cara et al. 2010) and New Zealand (Benseman 2014). Information from other countries was identified but was older than the period being considered. The methodology used to gather information in each survey has been described to provide insight into the difficulties encountered by researchers in reaching workforce participants. In the Australian survey the literacy and numeracy workforce was included under the umbrella of foundation skills, which also includes those working in the areas of English language and employability skills. The study was not restricted to teachers, and included a range of roles within the foundation skills area. The Canadian survey was of the literacy and essential skills<sup>3</sup> workforce. Similar to the Australian survey, the Canadian report covered a range of roles, not only teachers. The UK survey covered literacy, numeracy and ESOL practitioners. In New Zealand the research was of literacy and numeracy practitioners. The wide focus of some of the research makes generalisations about the similarities between literacy and numeracy workforces in the four countries difficult, but some general conclusions can be drawn:

- Practitioners work in a range of workplaces that include government and non-government agencies.
- The majority of the workforce is female.
- The workforce is aging (predominantly aged over 45 years old).
- Workers are highly qualified, with most holding a bachelor degree or equivalent.
- There are no formal mechanisms, such as a national register, to connect participants of the workforce.

Within the literature three factors create inconsistency when comparing and synthesising information about the literacy and numeracy workforce:

- Firstly, the content they teach is covered by a broad range of terms, such as: literacy and numeracy; foundation skills; core skills; basic skills; language, literacy and numeracy; essential skills; basic education; life skills; and further education.

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<sup>3</sup> Essential skills include 'thinking skills', oral communication, computer use/digital skills, working with others and the skills associated with continuous learning <[http://www.esdc.gc.ca/en/essential\\_skills/definitions.page](http://www.esdc.gc.ca/en/essential_skills/definitions.page)>.

- Secondly, the terminology relating to the workforce itself is inconsistent and includes labels such as teacher, educator, practitioner, assessor, specialist, trainer and tutor.
- Thirdly, adult literacy and numeracy workers might engage with learners in the community, in their homes, in an evening college, in a local health centre, at an educational institution, in a correctional centre, at a registered educational provider, online, in a homeless shelter or refuge, in a workplace, or in what Cuban refers to as 'borderlands, areas outside of formal educational frameworks' (Cuban 2009, p.5).

Without a centralised register by which to locate the literacy and numeracy workforce, identification of whom to include in research is problematic.

A common technique in much of the reviewed research into the literacy and numeracy workforce is that of allowing research participants to self-identify as literacy and numeracy specialists. This may introduce methodological flaws in the research, which should be considered when reading results. For example, where a large proportion of the workforce is part-time, contracted or casual, they may not see their role as qualifying for survey or research participation, where non-experts are ignorant of the criteria of expertise and therefore self-identify, or where those at grassroots who are 'doing' have the least time available to participate in research.

## The Australian literacy and numeracy workforce

In Australia there are no current data relating solely to the literacy and numeracy workforce. A summary by Perkins (2009) found that literacy and numeracy was being taught by specialists, practitioners with TESOL qualifications, WELL practitioners, vocational trainers and volunteer literacy and numeracy tutors. More recently, members of the literacy and numeracy workforce have been included in a study of the foundation skills workforce by Circelli (2015). In order to determine who delivers foundation skills in Australia, Circelli (2015) conducted a survey with volunteer respondents using convenience sampling. Convenience sampling was undertaken because there was no central register of foundation skills workers or a known sampling frame. Respondents were drawn from the areas of literacy, numeracy, language and employment skills and a range of employment settings, including TAFE institutes (the largest employer, at 41.4%), private training and/or education providers, community organisations, correctional centres, schools and government agencies (Circelli 2015). The roles reported by participants were varied: they covered direct delivery through to support roles such as resource development, pathways and support, capacity building and administration-related roles. The results revealed almost 80% were female and 78.8% were 45 years old or above. More than half of the respondents were employed on a full-time basis and most were highly qualified, with many holding several qualifications. For example, collectively, respondents to the survey held 687 qualifications at a bachelor degree level or above (Circelli 2015).

Although the Australian survey results show that the existing foundation skills workforce is well qualified (Circelli 2015), the strong relationship between vocational education and training and the literacy and numeracy workforce could result in a trend toward lower qualifications in the future. The VET sector continues to require only a certificate IV level qualification (or in some cases no qualification if supervised by a person with a Certificate IV in Training and Assessment). For vocational teachers the certificate IV is coupled with occupational (industry area) expertise (Hodge 2015). However, challenges arise for literacy



and numeracy practitioners, whose expertise is enhanced by high educational qualifications because teaching or education is their 'industry'. Higher-level qualifications, particularly knowledge-based qualifications, develop metacognitive understandings or 'access to the style of reasoning within disciplinary structures of knowledge' (Whelehan 2007, p.638). The risk is magnified by the age demographics of the workforce, which suggest many experienced and highly qualified practitioners will leave the workforce in the coming decades and may be replaced by practitioners who have competency-based certificate IV qualifications rather than knowledge-based higher-level qualifications, such as those from a university.

## International comparisons

Data exist for Canada, the UK and, to a lesser degree, New Zealand. In each instance the researchers faced similar issues of how to identify the literacy and numeracy workforce in order to obtain a representative sample. Leckie et al. (2014) surveyed the Canadian literacy and essential skills workforce using convenience sampling. Without a master list of practitioners, identifying who to include in the survey was problematic. The team therefore used a top-down approach by contacting organisations, who were asked to distribute the survey to practitioners. The original target was 3000 from an estimated 50 000 practitioners, but only 1575 respondents participated, with 690 surveys used (because those respondents answered more than half the questions). The results revealed that 86% of the workforce surveyed was female, 71% were aged 45 years or older and more than half were employed permanently (Leckie et al. 2014). Workplaces were diverse, with respondents working across seven provider types and a further 9% working in 'other' places. Respondents were well qualified, with 75% holding a bachelor degree or higher.

In the UK Cara et al. (2010) gathered data through a longitudinal panel survey of teachers involved in the National Skills for Life program over several years (2004–07). Initially the researchers sought to randomly select 1500 participants from 245 different educational providers with six different types of funding sources. The plan was altered as it was difficult to secure participation; instead 1027 volunteers were contacted via existing networks (Cara et al. 2010). By the second survey there were 755 remaining participants, with 560 by the final survey. In order to resolve inconsistencies caused by the attrition rate, the survey data were adjusted to produce a 'snapshot survey'. Of the workforce surveyed, 77% were female, 68% were aged 40 years or older and around one-third were employed permanently (Cara et al. 2010). Respondents were highly qualified, with 38% holding a doctorate, master's degree, postgraduate certificate or diploma and 30% holding a bachelor degree, graduate certificate or diploma.

In New Zealand Benseman (2014) prepared a general summary of the literacy and numeracy workforce by surveying practitioners who had enrolled in the National Certificate in Adult Literacy and Numeracy Education. Benseman found that there was no centralised database and located participants by contacting course providers, who in turn contacted the participants. There were 217 respondents (from approximately 2000 educators who had enrolled in the certificate at some stage) and Benseman states it is not known how representative the results are. Of the workforce surveyed, 70% were female and 69% were aged 45 years or older. Seven types of workplaces were identified and 45.2% of respondents held a degree or higher.

## Non-professionals in the Australian literacy and numeracy field

Non-professionals in the Australian literacy and numeracy field include paid tutors (without recognised qualifications), volunteers, and the adult learners themselves. For example, community members are trained to run literacy and numeracy classes in a program that uses a mass adult literacy campaign model in Australia (Boughton et al. 2014). Yes I Can has been running since 2012 in remote Australian Aboriginal communities and is coordinated by a central campaign authority, consisting of Aboriginal leaders in health and education, university staff and the local land council (Boughton et al. 2014, pp.5–6). The lessons themselves are taught by local people, who use materials provided by the central campaign authority and which are based upon a structured pedagogy (Boughton & Durnan 2014). Workforce development is embedded in the program: the materials teach the students how to become literacy learners and simultaneously train the local facilitators in how to deliver the lessons (Boughton et al. 2014). Formative assessment occurs as students complete the class activities, which have been mapped against the Australian Core Skills Framework. The results are reported as positive: the pilot programs had completion rates of 57.5% to 74.4% (Boughton et al. 2014).

Historically, volunteers have played a significant role in adult literacy and numeracy delivery in Australia. Australian literacy providers in the 1970s and 1980s actively sought to recruit and train large numbers of literacy volunteer tutors (Campbell 2009) and, although literacy and numeracy delivery was seen as the specific domain of specialists, it was able to be serviced by trained and supervised volunteers. In the current Australian literature there is little reference to developing literacy and numeracy practitioners' skills to train and work with volunteers, despite reports that volunteers have a positive impact on literacy and numeracy programs (Campbell 2009; Mackay et al. 2006; Johnston, Kelly & Johnston 2001) and that learners have better outcomes when they have volunteer assistance (Benseman et al. 2005, in Vorhaus et al. 2011). One exception is the Tasmanian state literacy campaign, where more than 1100 volunteers have been recruited to work with literacy and numeracy learners (Tasmanian Department of Education & LINC Tasmania 2015).

In addition to the volunteer workforce, students themselves were previously encouraged to become involved in aspects of delivery. This required having literacy and numeracy specialists with the skills to facilitate the process of active involvement, and the ability to create an environment where students play a central role in determining how they learn. In the 1970s and 1980s literacy and numeracy learners were representatives on state committees, in planning processes and in the development of publications (Campbell 2009; Johnston, Kelly & Johnston 2001). More recently there is little evidence of the student voice, nor of developing practitioner skills to involve students in a proactive manner. Searle (2004) suggests this occurred as a result of the increased role of government and industry in literacy and numeracy provision: in the 1970s and 1980s literacy and numeracy practitioners were influential in shaping provision, and therefore facilitating student participation, but by the late 1990s their role had changed to one of less influence in terms of policy, except as a mediating voice between learners and bureaucracy. Quigley (2006, p.25) questions why learners are no longer heard:

Why has the adult learner no voice, no role in professionalism when it is ultimately the learners' lives we are all talking about? After all, are we not supposed to be serving learners' needs in our search for professionalism?

Australian adult learners are not currently involved in shaping literacy and numeracy provision. Many recent Australian reports and strategy papers appear to flow from the OECD findings that a percentage of the population have low-level literacy and numeracy skills, but little research has been done following these findings to investigate individuals in Australia to determine whether they want or need literacy and numeracy development: calls for intervention are largely from the perspective of employers, business and government and are based on the perceived economic implications of literacy and numeracy deficiencies in the workforce. For example, the development of the Foundation Skills Training Package was informed by 'employers, unions, industry bodies, registered training organisations, regulators, employment service providers, corrections agencies, schools sector representatives and ... VET and LLN [language, literacy and numeracy] practitioners' (Roberts 2013, p.14) but not by the adult learners themselves. Boughton et al. (2014) is an exception; their work describes the involvement of students in the learning community and includes student evaluations in the program report. However, little current research into the student perspective exists elsewhere.

# Practitioner qualifications and student outcomes

## Australian qualifications

In Australia, a scan by the National Foundation Skills Strategy found few opportunities for training as a literacy and numeracy specialist. University courses specialising in literacy and numeracy were limited to two bachelor of education degrees with a specialisation or major in literacy and numeracy, one graduate certificate (literacy and numeracy), two graduate diplomas (literacy and numeracy) and one graduate diploma (numeracy) (National Foundation Skills Strategy 2015). When reviewing training packages, units and skill sets, the National Foundation Skills Strategy (2015) found two graduate diplomas in literacy and numeracy (one in practice and one in leadership), six individual units at Australian Qualifications Framework (AQF) level 4, one individual unit at AQF level 5 and five skill sets. There was one accredited course at certificate IV level (National Foundation Skills Strategy 2015). There was no information available about pathways for new entrants to the workforce or for defining career pathways for those already engaged in the literacy and numeracy workforce.

Government funding for initial training and professional development in Australia is low and has been described as 'a dimension of the adult literacy and numeracy field that has reached a parlous state and is badly in need of national renewal' (Black & Yasukawa 2010, p.51). Federally funded scholarships were offered to address the shortage of language, literacy and numeracy practitioners (Australian Industry Group 2013): the Australian Government approved \$1.6 million in scholarship grants of up to \$5250 each. Scholarships were provided to 347 individuals to study a suitable qualification to become an adult literacy practitioner (pers. comm., 25 May 2016: Programme Officer, Transitioning Programmes/Foundation Skills Branch, Australian Government Department of Education and Training). Research into the success of the scholarship program is not publically available, and the Department of Education and Training website provides only an anecdote of one recipient's completion (Department of Education and Training 2015). The scholarship program has now been discontinued (Department of Education and Training 2015). Moreover, several higher education specialist adult literacy and numeracy teacher education courses were discontinued at about the same time because of the limited number of Commonwealth Supported Places for postgraduate courses.

The 2011 report, *No more excuses* (Industry Skills Councils 2011), argued that building the capacity of the adult literacy and numeracy workforce was the responsibility of industry and all education sectors. It cited the limited number of language, literacy and numeracy experts, few of whom were willing or able to work in vocational areas, as one of the factors in the failure of training packages to address LLN needs (Industry Skills Councils 2011). The report raised the professional development of LLN specialists, by highlighting the need for specialists to develop skills to work effectively in the workplace and with vocational trainers to increase the LLN skills of industry (Industry Skills Councils 2011). This is echoed in research on integrated LLN delivery in VET (Black & Yasukawa 2013; Ivanic et al. 2009). The Australian Industry Group (2016) reported that the poor results of the most recent international literacy and numeracy survey, the Programme for the International Assessment of Adult Competencies, coupled with employer perceptions of low levels of literacy and

numeracy skills among their employees, were cause for concern and called for the expansion and professional development of the literacy and numeracy workforce to be prioritised: 'the LLN teaching workforce needs to be supported and expanded to meet the LLN needs of the workforce' (Australian Industry Group 2016, p.4). Although there are general calls for increased adult literacy and numeracy teacher qualifications in Australia (examples in Australian Industry Group 2016; Standing Council on Tertiary Education, Skills and Employment 2012; Roberts & Wignall 2010), only a few research projects have been carried out in this area.

## Importance of qualifications

Although scarce research exists that directly examines the impact of adult literacy and numeracy teacher qualifications on student outcomes, Vorhaus et al. (2011) note 'contrary to popular belief, teaching basic literacy and numeracy to adults is not something that anyone can do; having qualifications does make a difference' (p.78). There is general agreement in the literature that qualitative evidence shows that qualifications are important for literacy and numeracy practitioners. For example, in New Zealand, a national qualification 'made a positive contribution towards developing a more knowledgeable and skilled workforce' (Benseman 2014, p.122). In Australia, vocational practitioners who completed university qualifications reported improvements to their practice in both skills and in knowledge, including 'self-knowledge, pedagogical knowledge, ICT knowledge, and content knowledge' (Smith, Yasukawa & Hodge 2015, p.6). Studies in the UK associated with the Skills for Life program showed a general improvement in adult literacy provision following the implementation of requirements for particular levels of qualifications (National Research and Development Centre 2011; Cara et al. 2010). The OECD (2008) reported that strengthening qualification requirements was essential and practitioners required a knowledge background that encompassed pedagogical expertise, knowledge of subject matter and assessment skills.

Most available information on the effect of qualifications has been extrapolated from research on school teachers and their students (Vorhaus et al. 2011; Australian Government Productivity Commission 2011; Cara et al. 2010; Cara & de Coulon 2009). Although studies of school teachers and students suggest that higher qualifications positively affect students' numeracy scores, these results have not been replicated in studies of adult numeracy learners. Research that attempts to document quantitative results for adult literacy and numeracy practitioner qualifications has been inconclusive. In one study where teachers of numeracy held higher qualifications in mathematics, adult learners improved more between pre- and post-tests but there was little positive impact on the learners' self-confidence or their enjoyment of maths (Cara & de Coulon 2009). In other studies the results have been inconsistent and definitive conclusions have not been reached (examples in Brooks et al. 2013; Yin et al. 2013; Cara & de Coulon 2009).

## Other factors that influence outcomes

Studies have found a link between teacher experience and student outcomes, concluding that students with experienced adult literacy and numeracy teachers often demonstrate greater improvements in learning and engagement (Yin et al. 2013; Cara & de Coulon 2009). Research tends to suggest that adult literacy and numeracy outcomes are also linked to teacher characteristics and the way in which literacy and numeracy is provided: 'There is a

need for models of teacher training and professional development that emphasise both technical expertise and positive teacher qualities' (Vorhaus et al. 2011, p.79). For example, Dymock (2007) examined the role of community providers who offered non-accredited courses for literacy and numeracy. He found that the role of literacy and numeracy tutors was diverse and consisted of more than simply skills transmission. Similarly, in a summary study of literacy and numeracy provision across several OECD nations, it was noted that effective practitioners had soft skills such as 'humour, patience, flexibility and empathy' (OECD 2008, p.77). Successful provision depends on the teacher's ability to create and maintain positive, committed, respectful relationships with learners, build a social atmosphere that is unlike school and respond to individual learner needs with flexibility (Murray & Mitchell 2013; Widin, Yasukawa & Chodkiewicz 2012; Tusting 2009; Barton 2008; McNeil & Smith 2004, in Barton 2008; OECD 2008; Grief, Meyer & Burgess 2007; Berghella, Molenaar & Wyse 2006). Widin, Yasukawa and Chodkiewicz (2012) found that well-qualified, experienced teachers draw largely upon their ability to respond to each learner as an individual and that the relationship between the teacher, learners and within the learner group was pivotal to their practice. They further reported that expert teachers were able to respond to the wide range of contingencies that could impact on learners' participation in the classroom (Widin, Yasukawa & Chodkiewicz 2012).

# Professional development

## Benefits of professional development

In an examination of the Australian Workplace English Language and Literacy workforce, which included literacy and numeracy practitioners, Berghella, Molenaar and Wyse (2016) noted that the ability of practitioners to adapt effectively to new teaching requirements depended on professional development that informed them of changes and provided opportunities to understand and reflect upon the implications of the changes to their practice. However, there is a shortage of research into the impacts of types of professional development for literacy and numeracy teachers and whether it benefits students. A study in Massachusetts in the US found that including staff development among a range of initiatives to improve literacy and numeracy outcomes for students resulted in measurable improvements (Comings & Soricone 2005, in National Research and Development Centre 2011). Yin et al. (2013) were able to determine that participating in professional development sometimes correlated with student performance, but the results were not uniform. In New Zealand, Hunter (2016, p.235) reported that, while student feedback about what the professional development course had delivered was extremely positive, her anecdotal findings from a few students at later dates were:

when the course is finished, practitioners return to the constraining performativity culture of their teaching contexts. Moreover, new ways of thinking about literacy and numeracy may develop over time as affordances become apparent.

This suggests that, in terms of researching the impact of professional development on teachers' practice or efficacy, evaluations undertaken at the end of the course may not be indicative. Furthermore, in a practice context influenced by the needs of numerous stakeholders, beyond the learners, it is unlikely that a simple causal relationship could be drawn between professional development and learner outcomes, or other aspects of teacher efficacy.

## Training to target whole workforces

Professional development that addresses life-wide literacy and numeracy delivery (such as literacy for personal, community, study and work purposes) develops a flexible, adaptable and sustainable workforce. Recently in Australia substantial federal government funding has only been provided for employment-focused programs (Black & Yasukawa 2014), leading to professional development focused on literacy in the context of employment outcomes. The UK-based National Research and Development Centre (2011) contrasts the 'stagnation' of adult literacy and numeracy in Australia with 'structurally robust' literacy and numeracy systems in countries such as Sweden, which are sustainable and effective because they are based on a broad view of adult literacy, one that recognises the social capital as well as the economic outcomes. Nordic teacher training encompasses literacy from a range of perspectives, not just a human capital discourse. A human capital view of literacy and numeracy and a social capital view of literacy and numeracy are not mutually exclusive and can together effectively drive literacy and numeracy provision (Merrifield 2012; Black & Yasukawa 2010; St Clair 2008; Balatti, Black & Falk 2006). This suggests that the literacy and numeracy workforce would benefit from professional development in developing literacy in a range of contexts and for a variety of purposes.

The LINC Tasmanian state-wide community literacy 26TEN program provides an example of an Australian organisation delivering large-scale professional development to its literacy and numeracy workforce. The campaign is a community literacy program using a combination of literacy and numeracy professionals, volunteers and non-trained staff (Tasmanian Department of Education & LINC Tasmania 2015). Qualified literacy teachers support community and workplace programs. One of the goals is to develop the literacy and numeracy workforce with professional development through communities of practice and other professional development opportunities. The 2015 annual report showed there to be a high level of satisfaction from the adult students, who felt their individual needs had been met. The program also met community needs and created networks within and between communities (Tasmanian Department of Education & LINC Tasmania 2015).

## Professional development needs

The literature identified four broad areas of professional development required by literacy and numeracy practitioners:

- theoretical and conceptual understandings
- literacy and numeracy content
- the use of compliance systems
- skills for working collaboratively.

The importance of linking research to practice by enabling practitioners to be informed about new findings, particularly in relation to theoretical and conceptual understandings, is a prevalent theme in the literature, yet in Australia there are decreasing mechanisms for this to happen (Black & Yasukawa 2010). It is generally agreed that practitioners benefit from being aware of current research, which enables them to develop an understanding of the theories and conceptual frameworks that underpin literacy and numeracy learning and delivery models (Jacobson 2016; Wallace 2010; Swain & Swan 2009; Wheelahan 2007; Smith, Bingman, & Beall 2007; Morton, McGuire & Baynham 2006). Engaging with higher-order thinking allows teachers to participate in the field beyond their immediate work context. For example, Jacobson calls for professional development that focuses on more than 'technical answers to improve education', proposing that teaching should assist learners to understand the socio-economic and socio-political environment in which their training is placed (Jacobson 2016, p.14). Including research findings in professional development relies on having a strong body of rigorous research from which to draw. Recent research in Australia is described by Black and Yasukawa (2014) as often driven and funded by parties engaged in policy-making. This type of research seeks to support policy decisions and provide solutions to aid the implementation of policy without questioning the fundamental beliefs underpinning the policy and therefore the research. In contrast, critical academic research that examines and questions policy is rare. This is described as research 'for policy' in contrast to research 'of policy' (Black & Yasukawa 2014). Being able to critically evaluate research and policy is a challenge for the literacy and numeracy workforce, particularly given the fragmentation of the field at present and the diminishing opportunities to engage in a university qualification, where practitioners have traditionally refined their metacognitive understandings (Wheelahan 2007) and consequently their skills for engaging critically with research.



Practitioners' numeracy skills have been raised as a specific area of concern by some researchers (for example, Wignall 2015; Saliga et al. 2015; Tout 2014; Berghella & Molenaar 2013). Berghella and Molenaar (2013) included 44 self-identified numeracy specialists in their research and found few had specific numeracy qualifications and that most over-estimated their skills when required to self-assess. They called for further research into how to effectively test practitioners to determine whether their numeracy skills were adequate for a workplace context. No current Australian research was located that considers the numeracy teaching skills of literacy and numeracy specialists in contexts other than numeracy for work. Circelli (2015) found that around 41% of foundation skills practitioners who participated in the survey in Australia had been involved in the numeracy field for over 10 years, suggesting a significant bank of experience exists in the field. The data do not specify numbers for numeracy qualifications but reveal that respondents held a variety of high-level qualifications directly related to numeracy and mathematics, which included a doctorate, master's and graduate diplomas with adult literacy and numeracy specialties and bachelor degrees in secondary mathematics.

Another area of professional development content is that of digital or technological skills. While not specifically targeting the literacy and numeracy or foundation skills workforce, the Australian Industry Group notes that Australia is entering a digital age and new skills will be required by all workforce participants (2016). In the Foundation Skills Workforce Survey in Australia, many respondents were interested in developing both their own digital literacy skills and strategies for teaching learners how to use digital technologies (Circelli 2015). Professional development related to digital literacy was reported as having been undertaken and considered useful by most respondents (Circelli 2015). Mellar et al. (2007) found, for learners, there was no correlation between changes in digital skills and changes in reading and listening. They suggest the areas of skills are learnt independently. Similarly, Windisch (2015) reviewed international literature and found that there is not a large body of evidence to show that technology is an effective tool for learning literacy and numeracy but there is some evidence that when used in conjunction with a teacher (for example, as a classroom tool) it is useful. However, research does support technology as a useful method for engaging and motivating some learners (Windisch 2015; Mellar et al. 2007). The focus on digital literacy as part of the Australian foundation skills area (Wignall 2015) will require ongoing professional development for practitioners to maintain currency in their understanding of emerging technologies.

Compliance systems are integral to much literacy and numeracy delivery in Australia, yet research into professional development needs in this area or the effectiveness of compliance training is scarce. In Tasmania, Escalier McLean Consulting (2013) examined language, literacy and numeracy teachers working in the nationally funded Skills for Education and Employment program, who were required to measure learner achievement against the Australian Core Skills Framework. The research found that professional development may be needed by some teachers to help them use the framework to report gains in confidence and personal growth, inform curriculum planning, monitor progress and contextualise training (Escalier McLean Consulting 2013). The Foundation Skills Training package has been identified as another product that will require collaboration between vocational practitioners and foundation skills practitioners (Roberts 2013). In developing this training package, Innovation & Business Skills Australia emphasised the need for collaborative approaches to its implementation rather than specifying specific qualifications for the person delivering the package (Roberts 2013).

Increasingly, literacy and numeracy practitioners are required to work in new settings, and professional development to enable practitioners to adapt to new delivery contexts has been suggested as an area of need by some authors. Perkins (2009) noted that the literature pointed towards the need for practitioners to develop the ability to address the literacy and numeracy skills of learners in a workplace setting. Diverse settings result in different relationships, such as working collaboratively with non-specialists; the skills to do so effectively are identified by several researchers as an area of professional development need (Bak & O'Maley 2015; Roberts & Wignall 2010; Leske 2009; Barton 2008). Leske (2009) and Barton (2008) found that teachers required training in how to work with community workers. Leske (2009) examined the partnership between Australian literacy and numeracy teachers working with community service workers in a team-teaching environment. She concluded that one of the barriers to an effective partnership was communication, particularly a lack of a shared definition of literacy and uncertainty about the role of a literacy teacher. Professional development that develops skills in learning to work in partnerships to 'amalgamate ... work practices as well as understand how to go about achieving literacy and social capital outcomes' was recommended (Leske 2009, p.32).

Another example is from Bak and O'Maley (2015), who interviewed VET practitioners about their engagement with literacy and numeracy. In the Australian VET environment, vocational teachers have been increasingly called upon to take responsibility for addressing the literacy and numeracy needs of their vocational students (Bak & O'Maley 2015). They explored 'the shifting and emergent "professional" understandings of language and literacy' of eight vocational teachers (p.52). The study is limited in size, although the authors surmise from the findings that new ways of thinking about literacy and numeracy teaching are required, both for vocational teachers and literacy and numeracy specialists. The focus of the research is not on literacy and numeracy specialists, but it does raise questions about the roles and responsibilities in the literacy and numeracy field. The researchers suggest that VET teachers are not confident and willing to address language, literacy and numeracy issues, and do not clearly understand key concepts, such as embedding (integrating language, literacy and numeracy into the vocational content). They recommend that collaboration between the literacy and numeracy specialist and vocational teacher occurs. This recommendation points to a need for professional development in ways to work effectively with vocational practitioners.

## Effective professional development activities

Researchers have identified a number of methods for delivering professional development with successful outcomes for literacy and numeracy practitioners. The most effective professional development for literacy and numeracy practitioners involves engaging them in activity, particularly in research. Teachers draw on research they relate to, research that reflects their own experiences (Barton 2008): using practitioner-researchers is therefore an effective means of encouraging teachers to use evidence-based practice and, importantly, to disseminate their findings to colleagues (Duckworth & Hamilton 2016; Brooks et al. 2013; Barton 2008; OECD 2008; Smith, Bingman & Beall 2007). Practitioner research requires funding for appropriate supervision and skill development, which can be a limitation. Black and Yasukawa (2010) report that in Australia targeted funding available to implement literacy and numeracy practitioner-research programs has declined.

In addition to practitioner research, collaborative learning strategies have been used successfully. For example, providing opportunities to observe other practitioners, to interact with their peers in study circles and research groups and to use teacher portfolios (Swain & Swan 2009; Barton 2008; OECD 2008; Brooks et al. 2007; Smith, Bingman & Beall 2007; Morton, McGuire & Baynham 2006; Comings & Soricone 2005). Other professional development methods that allow interaction between practitioners such as seminars, conferences and case studies, when adapted to the context in which the participants work, are also valuable (Smith, Bingman & Beall 2007; Morton, McGuire & Baynham 2006).

Adapting professional development to the context in which the teacher is situated is important because of the varied settings in which practitioners work (Smith, Bingman & Beall 2007; Morton, McGuire & Baynham 2006). For example, Wallace (2010) examined a teacher training program in Scotland for experienced but unqualified literacy tutors and found that a collaborative group-learning approach, rather than input by experts (for example, in the form of lectures), was more suitable for the workforce because the participants were able to individualise, and therefore relate to, the content. Successful professional development focused on extending the reflective skills and critical awareness of the teachers (Wallace 2010).

Another successful method for delivering professional development is that of using practical activities where teachers are 'taught as they are expected to teach' (Morton, McGuire & Baynham 2006, p.5). For example, Swain and Swan (2009) found 'an iterative' model used for numeracy teachers resulted in success because it provided teachers with the opportunity to engage in a cycle of learning that involved reflecting, trialling, reviewing and reflecting again before finally refining 'concepts, ideas and tasks' (Swain & Swan 2009, p.89). To develop practitioners' skills in teaching numeracy, it has been suggested that it is essential to develop practitioners' own skills in numeracy and maths as a starting point (Nonesuch 2006). For successful student outcomes in numeracy, Swain and Swan (2009) determined that teacher training must include theoretical understandings of task design, management of tasks in the teaching space, formative assessment, questioning techniques and how to teach the learning strategies associated with collaborative learning and working in groups. Saliga et al. (2015) researched the outcomes of a series of numeracy workshops for adult numeracy teachers and found that professional development was affected by a lack of prior mathematical knowledge and the employment status of participants. They surmised that where employment status is not permanent or guaranteed, practitioners may not place priority on improving personal and professional skills. Overall, the research suggested that reducing anxiety about maths and increasing the teachers' confidence were essential components in numeracy professional development, and were initially more significant than increasing content knowledge and teaching strategies.

Mentoring new teachers in the workforce allows experienced practitioners to work with new staff, which is useful for providing opportunities for collaboration and knowledge sharing (Garbett, Orrock & Smith 2013; OECD 2008; Morton, McGuire & Baynham 2006). Issues that detract from this form of professional development are bureaucratic rather than pedagogical and include funding shortfalls, which do not allow mentors time to carry out their roles effectively, for instance, where institutions do not recognise time spent mentoring as part of a required program or do not provide sufficient support and funding (Garbett, Orrock & Smith 2013).

Specific research into professional development for teaching methodologies is limited in the current academic literature. Summaries in current work often draw on older research. However, one recent example, by Brooks et al. (2007), studied how to develop practitioners' skills in teaching reading. The study found better reading outcomes for learners could be achieved if teachers were taught five specific strategies before they began their teaching:

- oral fluency
- explicit comprehension strategies
- reciprocal teaching
- phonics
- language experience approaches.

Brooks et al. (2007) claim that teacher training is useful in the areas of assessing learner needs, adapting teaching strategies to suit individual needs, and managing different learning configurations (such as individual, pair and group work). Burton et al. (2008) had success delivering professional development on using phonic strategies for adults by running a four-day workshop, which started with theoretical underpinnings and progressed to practical understandings.

## Participant evaluation

Much research into professional development for the literacy and numeracy workforce relies on participant evaluation. This type of research does not critically analyse changes to teaching practices and methodologies or changes to student outcomes. The literature generally suggests that practitioners value professional development opportunities and, although often already highly qualified, they are receptive to ongoing development. Therefore, they engage regularly with professional development opportunities to maintain currency (Circelli 2015; Wignall 2015; Benseman 2014; Leckie et al. 2014).

In Australia the most common type of professional development is in reporting and systems compliance (Circelli 2015; Black & Yasukawa 2010), but in contrast the professional development that is rated as being the most effective is related to teaching methodology (Circelli 2015; Wignall 2015). Specific content that is valued by the workforce includes new resources and delivery methods; integration into vocational contexts and into life skills; learner groups; digital literacy, teaching theory; and employability skills (Circelli 2015). Moderation and collegiate support are also considered valuable forms of professional development (Escalier McLean Consulting 2013).

In Canada, Leckie et al. (2014) investigated professional development provision and needs through practitioner self-assessment and found the most popular modes were learning by doing, accredited training, informal mentoring, formal on-the-job training, job shadowing, volunteering and attending workshops, conferences and training events (Leckie et al. 2014). Paid release time and financial support for training were identified as the most important factors in facilitating participation in professional development (Leckie et al. 2014). Another important factor was encouragement by senior people to participate in professional development (Leckie et al. 2014).

# Professional frameworks

The literature suggests that literacy and numeracy practitioners have a sense of professionalism, which is associated with the altruistic nature of adult literacy and numeracy provision and their relationship with learners. However, there is also an ongoing issue with recognition for those within the field, both in terms of defining their own skills and in articulating them to others. A professional standards framework for the Australian foundation workforce, including literacy and numeracy practitioners, is proposed and is currently being developed. It aims to provide a mechanism by which to 'strengthen and diversify the identity of the foundation skills practitioner field' (Wignall 2015, p.20). Internationally there is research that both supports and questions professional frameworks. Researchers such as Wignall (2015), Dennis (2010), Ackland (2011), Cara et al. (2010) and Tusting (2009) have investigated who defines professionalism, who benefits from frameworks and standards, and ultimately how the literacy and numeracy workforce, particularly the teachers working with students, use the frameworks.

## Need for Australian frameworks and standards

In reviewing the literacy and numeracy workforce, Perkins (2009) suggested that literacy and numeracy practitioners would need to reinvent themselves to maintain relevance by responding to the need to achieve outcomes associated with social inclusion, workplace skills and improved productivity. Her research also pointed to the need to address lifelong literacy and numeracy:

With most members of the current language, literacy and numeracy practitioner workforce approaching retirement, there is a pressing need to find innovative ways of sourcing and training a 'new breed' of literacy and numeracy trainers with the specialised skills to deal with the complexity of contemporary literacy and numeracy teaching (p.7).

Resituating themselves in the foundation skills area is one such method by which literacy and numeracy practitioners can remain relevant in the current Australian adult education environment (Perkins 2009). To define the foundation skills workforce, the 2012 Australian National Foundation Skills Strategy called for a 'national framework of qualifications and skill sets for practitioners responsible for delivery of foundation skills' (Standing Council on Tertiary Education, Skills and Employment 2012, p.20). The framework aims to:

- enhance professional standards
- provide clear career pathways
- strengthen and diversify the identity of the field
- maintain professional expertise.

A professional standards structure would 'provide a consistent, shared language for talking about the range of roles and responsibilities in the foundation skills field, and document the types of capabilities demonstrated by those working within the field' (Wignall 2015, p.20). The benefit to practitioners is described as creating a 'multidimensional framework', one that allows the professional to define their own status, determine professional development needs and communicate their status and function to stakeholders outside the profession

(Wignall 2015, p.21). The initial project developed a draft of the Foundation Skills Professional Framework, available online. Although funding ceased before the framework was complete, a new funding round has been agreed and the framework will be complete by June 2017 (pers. comm., L Wignall, 9 May 2016).

## Who defines professionalism?

Within academic literature there is much discussion about who defines professionalism and whether it benefits literacy and numeracy practitioners. The OECD (2008) notes that there is a need to strengthen professionalism but some researchers suggest problems arise with the implementation and maintenance of professional frameworks and standards if there are discrepancies between how policy-makers or other stakeholders and the workforce participants themselves see their role, and therefore how the role is interpreted in the guidelines (Ackland 2011; Dennis 2010; Cara et al. 2010; Tusting 2009). As Cara et al. (2010, p.58) emphasise: 'If teachers do not trust educational reform to effect meaningful change for their learners, there is a negative impact on the altruistic aspects of their professional identity'.

One reason for the failure of frameworks is that there is not necessarily agreement between the practitioners themselves about what constitutes professionalism because of the diversity of the literacy and numeracy space (Ackland 2011). This may be an issue for some Australian literacy and numeracy practitioners as they are incorporated into the foundation skills framework; however, the consultation process informing the framework construction examined the attitudes of practitioners towards the term 'foundation skills' and revealed that, among those consulted, the term was widely accepted if it included the identification of specialisations within the field (Wignall 2015).

Inherent in the process of creating frameworks and standards is the question of what constitutes professionalism. Professionalism, as defined by other stakeholders, such as government and funding agencies, who situate literacy and numeracy in the dominant discourse (for example, a human capital discourse, where literacy and numeracy is a tool for enabling workforce participation and productivity) is in conflict with the ethos of professionalism held by many literacy and numeracy teachers, an ethos which is based on 'a commitment of horizontality in relationships, to equity and social justice' (Dennis 2010, p.38) and more directly related to their personal day-to-day interactions with students, colleagues and other close stakeholders (for example, in Yasukawa & Black 2016; Dennis 2010; Tusting 2009; Quigley 2006). For example, Jameson and Hillier (2008) researched part-time staff and found practitioners based their sense of professionalism on their ability to meet the needs of students. Tummons explains that the managerialist discourse defines professionalism in terms of compliance and control, while a practice discourse relates to teaching and interacting with students (Tummons 2014, p.41). Ackland (2011) identifies three interests in professionalising literacy and numeracy that may be in conflict: 'political, administrative and professional' (Hjort 2009, in Ackland 2011, p.67). In the UK two sets of standards have been attempted, but neither have been successful (Duckworth & Hamilton 2016; Tummons 2014). According to Tummons, the standards were not embraced because they were not reflective of the reality of teaching practice. They were criticised by several authors for 'positing a restricted, technicist discourse of professional knowledge within the learning and skills sector, akin to a competency-based approach to learning' (Tummons, pp.33–4). By contrast, in the development phase of the proposed Australian professional

standards framework there was extensive national consultation, providing ‘a rare opportunity for grassroots feedback’ to inform the content of the framework, with practitioners afforded multiple opportunities to provide input (Wignall 2015, p.24).

## Who benefits from frameworks and standards?

In considering why professional frameworks are desirable, Tummons (2014) suggests there are three functions to be considered: they allow the profession to be publically understood; they allow the development, delivery and assessment of qualifications to be designed; and they provide benchmarks against which to evaluate members of the profession. The benefit of allowing the profession to be publically understood accords with research (such as Leske 2009) that suggests a barrier to collaboration and community work is a lack of understanding of the literacy and numeracy practitioner role by potential partners. In surveying the Australian foundation skills workforce, Circelli (2015) found that the majority of respondents felt that a mechanism for increasing and documenting professional credibility was desirable. In Canada, Leckie et al. (2014) reported that practitioners found skills recognition gave intangible benefits such as professional pride, job satisfaction and motivation rather than tangible benefits, such as career advancement and increased earnings.

There are both pros and cons discussed in the literature with regard to how frameworks and standards impact on the development, delivery and assessment of qualifications and professional development. In Australian research, 78% of respondents to a survey of foundation skills practitioners would support ‘a formalised mechanism for recognising the professional development they had undertaken, similar to what occurs with professional associations’ (Circelli 2015, p.34). Respondents who were supportive indicated that such frameworks would encourage professional development participation, maintain standards of currency, increase and document professional credibility and facilitate a network of professionals (Circelli 2015). By contrast, 20% of respondents did not support a formalised mechanism, highlighting concerns relating to increased bureaucracy, the validity of the mechanism and relevance (Circelli 2015). Research showing that frameworks for literacy and numeracy workforces result in more or improved professional development is scarce. Some studies suggest standards may actually have unforeseen impacts in limiting the scope of the teacher role (Hunter 2016; Bathmaker 2000, in Morton, McGuire & Baynham 2006).

## How frameworks are used

Teachers will engage with and support the frameworks only when they are seen as relevant to, and reflective of, the individual teacher’s current context (Cara et al. 2010; Dennis 2010; Tusting 2009). Cara et al. (2010) note that experienced teachers link best practice to teacher autonomy, as it allows them to cater for diverse contexts and needs; for frameworks to be successful therefore they need to be flexible and non-prescriptive. When teachers are unable to reconcile their perceptions of their learners’ needs and their own roles with standards and frameworks, the literature suggests that experienced teachers comply to satisfy employment conditions, but seek creative ways to work within the frameworks to operate in ways they have experienced as being effective in meeting the needs of their primary stakeholders – the learners (Dennis 2010; Tusting 2009). For example, Tusting (2009) describes the teacher understanding of what a ‘good teacher’ does and suggests that when this is at odds with imposed frameworks and models of operating,

teachers engage in work-around strategies, described as 'various strategies of resistance' (Tusting 2009, p.22), where 'practitioners hijack the momentum and resource attached to policy to achieve their own purposes' (Dennis 2010, p.37).

The Australian professional standards structure is still in development phase. The method of implementation is yet to be tested. According to the recommendations, practitioners will be engaged effectively at all stages of implementation, with ongoing input from key professional groups and validation processes (Wignall 2015 p.25). The proposal calls for:

Continued engagement with the stakeholders who have been involved to date. Efforts will also need to be made to identify and engage with an even broader range of interested parties.



# Conclusion

The field of literacy and numeracy in Australia has undergone significant change, and in recent decades practitioners have moved from being highly influential in shaping the literacy and numeracy space to being almost absent as a voice in the literature. The inability of the literacy and numeracy workforce to present a cohesive professional voice is, in part, a result of the sporadic and disjointed way in which literacy and numeracy emerged as an area of education; it is also due to the diverse nature of the workforce and workplaces in which literacy and numeracy is practised.

This literature review has revealed the tensions for practice, professional development and the identity of the literacy and numeracy workforce that emerge from different philosophies on the contribution of adult literacy and numeracy to economic productivity and social cohesion, and the development of the individual. The concept of a literacy and numeracy specialist, which developed in the 1970s–1980s as the result of a holistic focus on the learner may become an historic artefact. In the environment of foundation skills, increasing alignment to VET and unclear career trajectories, literacy and numeracy practitioners face the challenges of maintaining specialisation and qualification levels while retaining a focus on individual learners. Current literacy and numeracy practitioners need to teach across multiple skill areas, meet multiple stakeholder needs for multiple contexts, function effectively under changeable funding conditions and develop new skills associated with emerging technologies. Research suggests literacy and numeracy practitioners already have the skills to achieve these outcomes: the historic perspective and current research reveal a workforce that has changed in the course of five decades but has always maintained a strong learner focus, regardless of their context or nomenclature.

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