

Exploring perspectives on adult language, literacy and numeracy

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Foundation Skills Literature Review Project
Scholarship recipient

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This document should be attributed as Mayer, D 2016, *Exploring perspectives on adult language, literacy and numeracy*, NCVER, Adelaide.

TD/TNC 126.20

Published by NCVER, ABN 87 007 967 311

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About the research

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Daniella Mayer

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. Skills were developed by 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, the University of Technology Sydney and the Australian Council for Adult Literacy.

In this review the focus is on the perspectives of adult language, literacy and numeracy. Language, literacy and numeracy are political. Different theoretical lenses and different perspectives lead to different understandings of what language, literacy and numeracy are and who is considered literate or numerate. Here Mayer has focused particularly on the human capital and social practices perspectives, which at times do not sit comfortably in relation to each other.

Human capital refers to the knowledge, skills and competencies people have that help facilitate their personal, social and economic wellbeing. In this context, language, literacy and numeracy are considered as discrete 'skills' that can be taught, with progress measured using instruments such as the Survey of Adult Skills, a component of the Organisation for Economic Co-operation and Development (OECD) Programme for the International Assessment of Adult Competencies (PIAAC). A social practices perspective is reflected in the *in situ* studies of adults' language, literacy and numeracy practices in the community and workplace, that is, investigations that look at how people actually use language, literacy and numeracy, with whom and why.

Dr Craig Fowler
Managing Director, NCVER

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Introduction

The field of adult language, literacy and numeracy (LLN) has been researched from a diversity of perspectives. Complex interactions exist between these different perspectives and with policies, politics, teaching practices and assessment. Moreover, these interactions cannot be understood as entirely local phenomena: the changing effects of globalisation are having an increased influence on national education and social policies, and with global testing regimes there is an increasingly global view of LLN (Hamilton & Pitt 2011). This report is a review of the literature on these different perspectives on LLN. It focuses on two major theoretical viewpoints in a field which is acknowledged to be both 'political and contested' (Waterhouse & Virgona 2004, p.12). The first viewpoint draws strongly on LLN as a creator of human capital and is represented most explicitly in political and policy implementations of LLN in Australia, the United Kingdom and the United States. The second perspective stems from an alternative discourse, one that explores the interactions of LLN in adults' lived experiences and social practices. This social practices perspective uncovers assumptions about what it means to be literate, as well as the power and inequality that may be perpetuated through different views of LLN. The role of technology has added a level of complexity to these perspectives and will be discussed with reference to the two theoretical lenses noted above. These differing debates and perspectives on adult LLN are not new; however, this literature review seeks to situate the debates in the current context of LLN practices in Australia, with some comparison with international directions in the field.

In Australia language, literacy and numeracy as an identifiable field evolved on the fringe of mainstream education from the mid-1970s, with provision originating in community learning centres as well as in the more formal context of LLN as part of the Adult Migrant Education Programme (Wickert et al. 2007). During the 1970s and 1980s, LLN was characterised by conversations about empowerment, as students were seizing opportunities and teachers were working with individuals who were encouraged to challenge, question and learn (Wickert et al. 2007). Questions about power and exclusionary practices were common to the discourse. In this context, politicians such as the Victorian Member of Parliament and later, Premier Joan Kirner, reported holding similar views to revolutionary educators such as Freire (Black & Yasukawa 2014a). In this time of viewing education as an avenue to empowerment, classes evolved within and for communities (McCormack 2016). They were inclusive classes and were able to work towards meaningful learning outcomes. This created opportunities for situated learning connected to the everyday interactions, experiences and places of the students, whose individual needs and goals were put at the centre of the instruction. The 1990s saw, in Australia and internationally, moves to link LLN to employment, marking a movement away from the socially situated empowerment of earlier times (Bannon 2016; Waterhouse & Virgona 2004). Global economic competition and an increasing role for international organisations such as the Organisation for Economic Co-operation and Development (OECD) contributed to the changing dialogue associated with the purpose and outcomes of adult education programs and the positioning of LLN (Jackson & Slade 2008; Searle 2004).

In exploring the LLN literature, tensions between the perspectives emerge. These tensions are frequently presented as contrasting the autonomous skill sets of an individual that contribute to individual and national economic wellbeing with the social practices that are set within the situational context of individual experience (Brown, Yasukawa & Black 2014; Waterhouse & Virgona 2004; Wolf & Evans 2011). Moreover, academic researchers have observed that in recent years 'the principal analyses of adult literacy have come not from academics at all, or even from community advocates as in past, but rather from employer groups, business councils, and other labor-market and economic think tanks' (Jackson & Slade 2008, p.27; see also Farrell 2014), suggesting an explanation for the new and influential interest in the human capital or economic perspective. The review that follows will illustrate some of these contrasting voices.

The following sections discuss literature on the human capital perspective of LLN and, to a lesser degree, the social capital perspective. Human capital refers to the knowledge and skills that allow individuals to produce economic value. Human capital is a familiar concept in the field of economics and has more recently increased in prominence in political and public debate surrounding education (Banks 2010). But human capital is just one form of capital beneficial to learners and a concern for teachers (Black, Falk & Balatti 2007). Schuller et al. (2004) indicate that social and identity capital are also created and grow through the experience of learning and have benefits reaching beyond the initial learning encounter. The OECD considers social capital as the 'networks, together with shared norms, values and understandings that facilitate co-operation within or among groups' (2001, p.41). In a study on the changes in learners' social capital as outcomes of LLN programs, this definition has been interpreted in the following way:

these changes may be changes in levels of trust between people, changes in the number and nature of the different groups to which people belong, changes in the support people receive or give in groups, and changes in activities undertaken within one's regular groups (bonding), different groups (bridging) and links to institutions (linking). (Black, Falk & Balatti 2007, p.2).

The human capital perspective

Within the field of education, human capital quantifies the economic return on an investment in skills development (Schuller et al. 2004). In the case of LLN courses, a human capital perspective focuses on measuring how participation in an LLN program increases an individual's capacity to gain employment, access further education or training, retain employment or gain a promotion. Exploring OECD texts relating to learning and capital, Walker reports that 'education for employment and work clearly remains the overarching perceived purpose of lifelong learning, despite references to the wider social good' (2009, p.346).

A human capital approach to education equates skills and knowledge in the population with economic participation in society (Walker & Rubenson 2014). There has been academic critique of the human capital perspective (for example, Jackson & Slade 2008; Tett 2014; Walker 2009). Tett (2014) points to how a human capital perspective can neglect many aspects relating to the value and worth of lifelong learning. In Australia where a policy on lifelong learning as such does not exist, policy continues to privilege the concept of education as a value-add to economic growth, the field of LLN being no exception (Castleton, Falk & Sanguinetti 2001; Rudd & Smith 2007; Standing Council on Tertiary Education, Skills and Employment 2012; Yasukawa & Black 2016).

Research by the Australian Industry Group (AiG; 2012, 2016) illustrates the associations that could be found between LLN and productivity. The link between LLN and productivity is further reflected in the National Foundation Skills Strategy (NFSS) for Adults, the only semblance of a national adult literacy and numeracy policy currently in Australia (Australian Industry Group 2012, 2016; Standing Council on Tertiary Education, Skills and Employment 2012). Several academic studies (Castleton 2002; Hull 1997; Jackson & Slade 2008; Jacobson 2016) point to problems associated with the underlying assumptions of this interdependence of education and economic development, which range from placing the burden on an individual who falls short of expected attainment and who fails to support the economic goals and aspirations of an ambitious nation, to the unquestioned assumptions about the broader economic structures in society that limit access to both education and work for certain groups in society. Hamilton articulates this as she describes that 'the "good" adult literacy learner is imagined as a responsible citizen contributing to national prosperity in a global marketplace' (2014, p.122). The related issues of the crisis discourse and skills deficits are explored further later in this review. According to critics of the human capital perspective of literacy, the discourse that associates LLN with economic development has also shifted the concept of social inclusion to a primary focus on economic participation (Hamilton 2014). It is in this political environment that we see the divergent streams of thinking about LLN programs sharpen. Cuban (2009) has observed that in both the United States and the United Kingdom:

Adult basic education agencies, funded by the state, were turned into socially responsible corporations charged with being shock absorbers of these neo-liberal reforms and economic launching pads for the new service-based economy and privatised public services (p.8).

In the context of global changes, Hamilton identifies the dominance of neoliberalism, which she defines 'as a set of practices that promote a market-driven model of social and economic organisation' (2014, p.111). Criticisms of the neoliberal influences on literacy provision are echoed by McCormack (2016), who challenges the neoliberal sentiments of governments and the difficulty of maintaining an identity for LLN programs in the Australian context. He advocates the importance of holding a shared public memory of the recent history of LLN as a field, the aim being to maintain the broader perspectives of what LLN education can encompass, as imagined by those involved in the development of LLN curricula. This is challenging in the face of increasing constraints on the field, which has experienced 'moves by the State to regularise the field of adult and further education by neo-liberal forms of governance via competition, auditing and assessment and deploy it as an instrument in workplace reform' (McCormack 2016, p.187; see also Searle 2004; Tsatsaroni & Evans 2014).

The economic imperative

Adult LLN programs are described by proponents of the human capital approach as essential components in increasing workforce participation, retention and productivity, as well as providing wider social benefits such as inclusion, civic engagement and social connection (Shomos & Forbes 2014). This perspective creates an equation from the interaction between a teacher and a student: the student will increase their capabilities and this will improve access to labour markets; this in turn will positively impact on the wealth of the individual, and also add to the skills base of the population and, through the increased economic participation rates, will benefit society more broadly. The human capital perspective has received popular and policy support and gathered momentum, as shown by Yasukawa and Black (2016) in their account of how the National Foundation Skills Strategy for Adults was developed – with much lobbying from a range of policy, industry, trade union and media advocacy. However, the complexity of funding and policy regimes can create and serve multiple agendas:

In Australia and internationally, politicians and policy makers continue to believe in a direct and unproblematic relationship between literacy on the one hand and a wide range of social benefits on the other. As literacy advocates and practitioners, we are reluctant to argue with this, because it helps our case for more funding and support. (Boughton 2016, p.149)

This observation allows us the opportunity to acknowledge the practitioner interest, and perhaps agenda, within the discourse that reinforces a human capital perspective of LLN. While educators may discuss and engage with students at an individual level to articulate the goals and purpose in relation to their own education journey, the role of funding and policy may create conflicting priorities. Practitioners may disagree with the arguably simplistic claims but avoid confronting them, at risk of losing funding for literacy provision altogether. The observation by Boughton above identifies the conflict felt by literacy advocates and practitioners who may not accept a human capital model.

Of key concern to economists is the return on the investment in education as 'education may provide people with skills and knowledge that can be used for being productive in the labour market' (Borghans & Heijke 2005, p.133). While the connection between LLN and employment is one application of the human capital perspective, another relates to the way LLN skills influence what happens within the workplace. The Australian Industry

Group has explored the return on investment in LLN training because of persistent concerns expressed by employers, that low levels of literacy and numeracy 'act as a significant drag on the productivity and competitiveness of the Australian economy' (Australian Industry Group 2012, p.i). In quantifying impacts and measuring outcomes, the reduction of LLN to specific skills is essential to the comparison calculation. The Australian Industry Group (2016, p.9) draws on OECD data to highlight that:

Differences in the average use of reading skills explain about 30 per cent of the variation in labour productivity across countries. The absence or underdevelopment of these skills represents a serious risk to the individuals affected and the economy.

In making the association between skills and economic growth, the skills are isolated, itemised, measured and utilised for national and international comparison with economic outcomes. In later sections of this review the struggle for compatibility between this model and other perspectives of literacy will be shown.

The relationship between human capital and testing regimes

The Programme of International Assessment of Adult Competencies (PIAAC) is an international survey that assesses the proficiency of adults in literacy, numeracy and problem-solving in technology-rich environments. These skills are seen as 'relevant to adults in many social contexts and work situations, and necessary for fully integrating and participating in the labour market, education and training, and social and civic life' (OECD 2013a, p.25). While the application and the intent of the data are broad, they are frequently extrapolated to further explore the relationship between literacy and numeracy skills and labour market outcomes, in terms of participation and wages, promoting a human capital policy model (Shomos & Forbes 2014).

The human capital perspective is supported by the OECD, which provides data on the literacy and numeracy capabilities of the population and allows international comparison. These data come from various versions of testing, most recently through PIAAC and, preceding it, the International Adult Literacy Survey (IALS) and the Adult Literacy and Lifeskills Survey (ALLS). In the foreword to the first PIAAC report, the Secretary General of the OECD shared his hopes that the data provided would 'help countries understand more about how to invest in skills in ways that will transform lives and drive economies' (OECD 2013a, p.3). Hamilton (2014) argues that the results of such testing bring about international league tables, which prompt public examination of the deficits of a nation and fuel the fire of keeping up with competitor knowledge economies. These testing regimes lead to global rhetoric, which can have wide-reaching implications, as it inextricably links the development of literacy and numeracy to the economic development of a nation.

This approach to the data has not been without debate, as the narrowness of the focus of data usage and reporting has been criticised as ignoring the breadth of the qualitative background information obtained by the survey, which could potentially explore further understandings of what it means to be literate (Evans 2016; St Clair 2012). In later work St Clair highlights further concerns about the focus of the OECD publications 'on the econometrics of human capital, linking the competencies to the wealth of nations and their ability to thrive in a competitive global society' (St Clair 2014, p.202).

The data from the Programme of International Assessment of Adult Competencies can throw light on the relationship between employment and literacy and numeracy. Shomos and Forbes (2014, p.11) warn, however, that 'an association between two variables does not explain the effect of one variable on the other'. Their paper highlights the associations between gains in literacy and numeracy and the increased likelihood of employment and increases in wages but gives limited consideration to the impact of wider influences and variables. In summarising the Australian results of PIAAC, the OECD report makes explicit links, stating that 'higher proficiency in literacy and numeracy has a positive impact on labour force participation and wages' (OECD 2013b, p.8). The positive association between literacy and numeracy and labour market outcomes is a pattern that has been reported internationally (Walker & Rubenson 2014). In interpreting the data from Shomos and Forbes, Circelli (2015, p.8) indicates:

Australia's Productivity Commission recently estimated that an increase in literacy and numeracy skill by one level, as measured in the Program for the International Assessment of Adult Competencies (PIAAC), could increase the chances of employment by two percentage points for men and by four percentage points for women.

This perspective had further been advanced by Banks (2010), who focused on the effect of increasing LLN on wages and employment, noting 'an increase in foundation skills is estimated to have as big an effect as (other) educational attainment' (p.3). He used the example of the effects on wages and employment, of increasing literacy and numeracy from level 1 to level 3¹ as comparable with the effects of completing a tertiary degree after Year 12. However, he goes on to question the causal relationship between skills and productivity, with the observation that increasing productivity through the 1990s 'cannot be explained by any sudden improvement in skills' (2010, p.4). Nevertheless, the association between LLN and labour market outcomes has been used to further enhance the human capital perspective in education; Banks argues that 'the importance of foundation skills for labour market outcomes appears robust, and has significant policy implications' (2010, p.4).

The association between LLN skills and employment outcomes has been supported by other research which also draws on OECD data. Chesters, Ryan and Sinning (2013) highlighted the returns from improvements in literacy skills with reference to the positive influence of literacy on economic reward. They identified that 'education qualifications need to continue to provide individuals with improved skills such that they provide an income payoff and are worth undertaking' (Chesters, Ryan & Sinning 2013, p.33). This assumption of a causal relationship has been criticised by Black and others, particularly in the establishment of a 'crisis discourse', in which the low levels of LLN or skills shortages are seen as in urgent need of addressing, but only in order to ensure the economic future of the nation (Black, Yasukawa & Brown 2015; Walker & Rubenson 2014; see also Atkinson 2012).

The reality of the experiences of LLN in the workforce may be different from the popularised and politicised notions that are presented to the public and which feature prominently in policy. Black, Yasukawa and Brown (2015) found that the situated

1 Adult Literacy and Lifeskills Survey levels.

experiences of workers did not necessarily accord with the crisis discourse. Moreover, the Programme of International Assessment of Adult Competencies found that 'Australia shows a good match between the literacy proficiency of workers and the demands of their jobs' (OECD 2013b, p.1). These findings suggest that a narrow focus on productivity can be distortionary. Hull (1993, p. 21) found this when she challenged the dominant discourse that diverted attention from the societal problems and larger underlying concerns that arose in the US in the 1990s:

Most troubling is the now commonplace assertion, presented as a statement of fact, that because they apparently lack literacy and other 'basic' skills, U.S. workers can be held accountable for our country's lagging economy and the failure of its businesses to compete domestically and internationally.

Other research based on *in situ* ethnographic studies (for example, Belfiore et al. 2004; Goldstein 1994) help to illustrate the problems of drawing conclusions about LLN skills and productivity in a generalised way.

Measurement by level

The establishment of large-scale tests by the OECD has necessitated the development of levels as a means of analysis and reporting. An individual completing the Programme of International Assessment of Adult Competencies will be assigned a numerical score of between 0 and 500, which is then grouped into five skill levels for the literacy and numeracy components and three levels for the third domain, 'Problem Solving in Technology Rich Environments' (PSTRE). The increasing levels indicate increasing skill ability (Shomos & Forbes 2014). With the use of large-scale data reporting on skills, there has been growing discussion on the role of levels, in particular over the 'minimum level' required to participate in knowledge economies (Black & Yasukawa 2014b).

In Australia, the Australian Bureau of Statistics (ABS), which was responsible for administering the PIAAC assessments, highlighted concerns over the social and economic inclusion of individuals with low literacy and numeracy, based on the data collected (2013). However, Caldwell and Webster (2013) explore the discourse around levels to highlight the complexity of the interpretation of levels beyond basic thresholds. ABS publications continue to include the statement 'Level 3 is regarded as the minimum required for individuals to meet the complex demands of everyday life and work in the emerging knowledge-based economy' (ABS 2012, p.19). These statements are referring to PIAAC levels, where there has been wide-scale promulgation of the importance of Level 3 (Black & Yasukawa 2014b). The wider dissemination of minimum levels required for participation remains a discourse in recent publications, which report on PIAAC in the following way:

It is therefore a matter of concern that results from the recent PIAAC highlighted that almost half of Australia's adult population has literacy and numeracy skills below the minimum level required to adequately function on a day-to-day basis in an advanced economy. (Circelli 2015, p.9)

Black and Yasukawa (2014b) have challenged the discourse surrounding Level 3 as the 'minimum level required for individuals to meet the complex demands of everyday life', reported by the ABS and picked up by governments and the wider media. Terms such as 'functionally illiterate' have proliferated, while a large group of the population have become disempowered through the establishment of a literate/illiterate dichotomy

(Black & Yasukawa 2014b; St Clair 2012; Tsatsaroni & Evans 2014). Such generalisations about the inability of individuals to cope have been contested by Black and others, who have sought to listen to the realities of individuals living and working with lower levels of LLN (Black, Yasukawa & Brown 2015; Waterhouse & Virgona 2004). These situational accounts present a different reality, one shaped by workplace context, work requirements and adaptability, as well as workplace relationships.

Hagston (2014) reviewed the PIAAC data and reported that low levels of literacy and numeracy are an issue for a large number of Australians (2.4 and 3.5 million respectively) who 'don't have the literacy skills to cope, by themselves, with the demands of our society' (p.10). The wider press and popular media, as well as academics in the field, have entrenched these notions of inadequacy in the public psyche, influencing the dialogue surrounding the provision of LLN programs designed and funded to meet the needs of a large section of the population who have been labelled as unable to cope (Hamilton 2012; Rose 2012; Yasukawa & Black 2016). The impact of this dialogue is that a deficit model remains the status quo in many LLN programs, one that centres on blaming those with poor skills, as if they and their deficiencies are responsible for adverse economic circumstances (Black & Yasukawa 2013; Searle 2004).

The deficit model views learners as lacking skills or qualifications, a problem that could be remedied by the addition of the missing qualifications or skills (Rogers 2006). More broadly, the deficit model looks at the individual as the problem. In blaming the learner, it removes responsibility from the state and society more generally, eroding the social safety nets and sense of shared responsibility for the care of all members of society (Castleton, Falk & Sanguinetti 2001). In the foreword to the release of the PIAAC data, the OECD states that the publication aims to help governments to understand 'the extent to which their citizens are equipping themselves with the skills demanded in the 21st century' (OECD 2013a, p.3). Rose (2012, p.5) describes how programs underpinned by a deficit view position students in particular ways:

Students in remedial classes had 'handicaps', 'disabilities', 'defects' and 'deficits' that had to be targeted and treated – almost as though their writing or math problems were organic and could be diagnosed and surgically removed.

Tett (2013, p.275) describes how this occurs using a metaphor of a ladder:

People are ranked from top to bottom with the emphasis on what they can't do rather than what they can. This leads to a deficit model where those on the bottom rungs are positioned as lacking the skills that they need.

However, Evans sees the role of educational researchers as supporting 'numeracy and literacy, and to prevent their being reduced to narrow competencies' (2016, p.55). It is the economic imperative – for individuals and at a governmental level, for policy-makers – which drives the human capital perspective of LLN. However, this has also had implications for researchers, as Farrell lays bare an observation that 'the research [framed in human capital discourse] was not only designed to influence policy, it was also designed to implement government policy around global competitiveness' (2014, p.68).

Curriculum

A skills-based approach leads to a view of LLN that segments learning into distinct, achievable skills which can be applied to other situations, regardless of the learning context (Victorian Department of Education and Early Childhood Development 2007; Papen 2005). This fits within the competency-based frameworks that have been implemented in the Australian vocational education and training (VET) sector, and internationally. However, concerns have been expressed that the:

Positioning of literacy and numeracy programs within the mainstream vocational education sector has brought with it ever-increasing pressures related to time, money, standard quality-assurance systems, and accountability, sometimes with little awareness by regulators of the underpinning philosophies of the field and the nature of its students. (Wickert et al. 2007, p.276)

The current policy-derived curriculum and assessment resources in Australia reflect this skills-based notion of LLN. For example, the national assessment framework, the Australian Core Skills Framework (Department of Industry, Innovation, Science, Research and Tertiary Education 2012), and the competency-based Foundation Skills Training Package (Innovation & Business Skills Australia 2013) represent LLN as discrete competencies. While practitioners may take holistic approaches in their program planning, these instruments define LLN outcomes in skills-based terms.

This approach is echoed in nations such as the UK, where national assessment frameworks, curricula and tests are also aligned with the skills described in OECD testing regimes (Hamilton 2014).

Identifying LLN as discrete skills that can be taught and transferred creates what Street (2003) coins an 'autonomous model' of literacy. This presupposes that LLN itself will improve the outcomes for individuals. Street (2003) challenges this conceptualisation of literacy: the 'illiterate' need only to become 'literate' in order to share in the wealth and opportunity afforded to those possessing 'literacy'. The autonomous model is 'based upon seemingly "objective" tests and surveys and purports to exist outside any application or context' (Waterhouse & Virgona 2004, p.13; see also Tsatsaroni & Evans 2014).

Methodological approach

Human capital research (for example, Australian Industry Group 2016; Chesters, Ryan & Sinning 2013; Shomos & Forbes 2014) has relied on large-scale quantitative measures, which quantify LLN into skill levels. These skills levels are then extrapolated to look at associations with employment outcomes. The advancement of the OECD skills measures has allowed a finer grained analysis of the association between human capital outcomes and literacy and numeracy skills. However, the costs and complexities of large-scale international tests, in particular, have been discussed in terms of the difficulty of real-life contextualisation and the need to codify responses, where 'there is inevitably a trade-off involved' (Caldwell & Webster 2013, p.106). The results of these tests need to fit the definitions of skill at distinct levels while remaining true to their real-life contexts. Extrapolating a single testing system to an international scale is also not without its challenges, as the appropriateness of the material may be questioned, 'thereby making cross-cultural comparisons difficult' (Caldwell & Webster 2013, p.106).

As the OECD is increasingly promoting its testing as a means of measurement and comparison across countries, the use of such testing regimes as international yardsticks becomes problematic (Evans 2016). Evans continues his exploration, further problematising the notion of a trans-national definition and questioning 'how well it "fits" the lives of adults in any particular country' (2016, p.45).

The OECD testing does provide a vast amount of background information, collected as part of the PIAAC survey. This information, which has great potential to build a more detailed understanding of individual lives and experiences of LLN, remains largely untapped (St Clair 2014). It moves beyond counts and numerical comparisons to explore the background and attitudes of survey participants.

The OECD emphasis on economic relevant analysis of a set of specific competencies masks a substantial body of data that has been gathered at high cost but not been explored as thoroughly as possible. (St Clair 2014, p.203)

The data have the potential to inform robust education programs, if those undertaking the analyses are mindful of the limitations, both explicit and implicit, in such large-scale international tests.

Social practices perspectives: New Literacy Studies and related views

As the discourse in the field of LLN has become increasingly dominated by the human capital perspective, the social practices perspective rarely finds visibility in the public discourse. Cuban (2009) uses the analogy of borderlands, inhabited by marginalised learners and by social practices researchers who often sit outside formal educational frameworks and policy directions. The social practices view of LLN recognises the array of experiences and learning of LLN in the lives of individuals. This view sees literacy playing a key part in every aspect of life: work, community, relationships, citizenship and beyond. Papen (2005) articulates this view as one that looks 'at literacy not merely as a skill, as something that people have learned and therefore know, but as something people do' and as such, it holds meaning in the lives of individuals beyond their workplaces and the sphere of economic influence (Papen 2005, p.25).

The perspective is prominent in New Literacy Studies, which evolved throughout the 1980s and 1990s as a new school of thought, exploring the nature of literacy and its place and position as a social practice (Street 1993, 2003). Its evolution was not without controversy, as it challenged the notion of a singular form of literacy (Stephens 2000). Scholars discussed a rich diversity of situated contexts, giving rise to a multiplicity of interpretations of the type of literacy that contributes to the lived experience, whereby 'the generally assumed functions and uses of literacy which underlie them do not correspond to the social meanings of reading and writing across either time periods, cultures or contexts of use' (Heath 1980, p.124).

Extending the concept of literacy allows for assumptions about what counts as literacy to be challenged and debated (Street 2003). This work has fostered critical analyses of the contexts in which LLN is experienced by individuals (for example, see Papen 2005, 2009; Black, Yasukawa & Brown 2015; Kral 2016), as well as an exploration of how these contexts influence experiences of literacy and interpretations of what it means to be literate (Hamilton 2012). This view recognises the power and hegemony evident in the system and acknowledges that narrowing the conceptualisation of the nature of LLN has the potential to alienate people. Papen (2005) claims that 'any attempt to define what literacy is automatically excludes other ways of thinking about reading and writing' (p.45). Studying literacy and numeracy as social practices yields insights into the ways literacy and numeracy are enacted and carry meaning in adults' lives, both in work (Black, Yasukawa & Brown 2015; Hull 1993) and in the community (Kral 2016; Papen 2009; Lave 1988).

A social practices perspective has also provided insights into the study of adult numeracy. Building on the ideas from New Literacy Studies, Baker (1998) explains how a social practices view of numeracy uncovers the social, historical and cultural dimensions of numeracy practices, and how they are imbued with power relations. These interactions may be influenced by an individual's perception of class, status or other factors that create an unequal position in the consideration of skills, contexts or practices (Baker 1998).

Methodological approach

New Literacy Studies research and social practices-based research are generally qualitative and employ ethnographic approaches. These practices are bound in the lives of individuals, drawing on their experiences and perspectives to allow the story of the literacy in their lives to be explored. Papen explains 'ethnography refers to close, in-depth examinations of social activities as they naturally occur in real-life settings' (2005, p.26) and makes specific connections between experiences and perspectives in her ethnographic study of health literacy (2009). Ethnographic methods were also implemented by Black, Yasukawa and Brown, as they explored the literacy practices of production workers (2015). New Literacy Studies acknowledges that literacy may be valued and practised in multiple ways by different people in different contexts: according to this perspective, literacy practices are socially, culturally and historically contingent.

New Literacy Studies is not without its critics, even from scholars who are critics of the current human capital discourses of literacy. For example, from a popular education perspective, Boughton (2016) has pointed to the limitations, in terms of literacy as a force for mobilising transformative learning, in focusing research only on its local situated contexts and ignoring the local practices within the wider political economy of adult learning. He makes the observation that in order 'to restore a more holistic view, literacy studies will need to re-discover its earlier multi-disciplinarity' (2016, p.151). His example of such a holistically informed approach is the mass literacy campaign, modelled by Cuba's 'Yo si puedo' movement (Boughton 2016).

Even within an exploration of methodology comes complexity. With a different set of research methods – large-scale quantitative surveys – dominating the social practices, questions of the political economy of evidence become an issue. Denzin (2009) suggests that policy-makers do not value qualitative research as much as quantitative data. This is articulated by Habermas who is concerned with the layers of complexity:

The link between empiricism, positivism and the global audit culture is not accidental and it is more than just technical. Such technical approaches deflect attention away from the deeper issues of value and purpose.

(Habermas, in Denzin 2009, p.152)

Insights from social practices perspectives of literacy and numeracy

Studies that explore the development of LLN from a social practices perspective afford insights into the reality and lived experiences of LLN in the lives of individuals. Such insights are not always predictable and can give rise to new perspectives, highlighting value in new interactions and acknowledging the power of LLN to transform lives. To illustrate the affordances of research undertaken from a social practices view of LLN, two particular studies are reviewed.

Baynham and Johnston (1998) conducted research with young unemployed people to examine their numeracy practices. This involved both pedagogical and theoretical interests, as they describe their intention 'to tease out particular instances of how different social interests might result in different practices' (p.52). Through discussions and interviews, Baynham and Johnston investigated participants' everyday numeracy practices, including 'managing money, negotiating transport, and interacting with

bureaucracies' (p.54). They found the relationships between social practices and numerical application was not uniform across all areas of numeracy; they were nuanced, impacted by gender, location and responsibility, as well as the passion and interest of the respondents as they interacted with numeracy in many facets of their lives. In reflecting on the research, the researchers observed that:

The project adds evidence to the argument that numeracy is not a single monolithic set of discrete skills, and that what it means to be numerate is complex and socially dependent. In the context of the current discussions about literacy and numeracy standards, such complexity must be taken into account in any attempts to measure numeracy levels. (Baynham & Johnston 1998, p.64)

Each research participant was able to demonstrate how numeracy was implicit and explicit in their daily interactions and experiences. These were individual stories of the meaning made through the application of numeracy. This was highlighted as an important touch point for educators who seek to provide numeracy education that holds value for learners.

In the context of health literacy, Papen (2009) used a social practices approach to investigate the experiences of individuals navigating the health system in the UK. Papen identifies health as a topic with the potential to be utilised more extensively in LLN education due to its strong links to the everyday experiences and practices of learners. In describing the strategies that individuals incorporate to make meaning, the notion of an individual skill is challenged: because 'health literacy is treated as being context-independent, it is assumed to be measurable through abstract tests' (Papen 2009, p.20). The experiences of individuals in this study show a broad approach to interpreting health literacy. Some individuals pre-prepared questions and wrote them down prior to medical consultations; others utilised dictionaries to assist in their interactions. The broad range of strategies describe the use of other people in the community for support or to assist in carrying out additional research, advocating or using as literacy mediators. They draw on networks, family and friends, and create a shared resource to assist in the management and interpretation of the literacy associated with health (Papen 2009). The research thus suggests limitations in the research that draws conclusions about the impact of literacy on people's lives, based solely on their individual literacy skills, because the practice of managing and interpreting the literacy associated with health, as this research has shown, may be a shared resource.

In considering health literacy and the way in which individuals make meaning from interactions within the health care system, Papen's (2009) research shows there are a number of other factors that influence this engagement. Health literacy is embedded in contexts that involve both emotions and power relationships, factors which are not taken into account in testing measures of health literacy (Papen 2009). The research by Papen highlights the importance of social connectedness in enabling and empowering individuals to overcome challenges. The role of mentors, mediators and community is potentially an area deserving explicit examination in the context of LLN education.

Technological influences

The role of technology adds further dimensions to the discussion on LLN. Both the human capital and social practices perspectives can be applied to an examination of the use of technology and the definition of what it means to be digitally literate. Defining digital literacy replicates, or even magnifies, the complexities that exist in offline conceptualisations of LLN. In describing differing viewpoints, Meyers, Erickson and Small (2013, p.358) propose:

We are using this organizing schema not to set up binaries or oppositional arrangements, but to illustrate how values, goals and institutional priorities play a part in defining (and reifying?) who is 'digitally literate'.

The incorporation of multimedia, as well as traditional text-based sources, in combination with issues of authenticity and reliability, creates a broader concept of digital literacy (Boyd 2014). In considering the key components of digital literacy, Eshet-Alkalai (2004, p.93) explains that 'individuals are required to use a growing variety of technical, cognitive and sociological skills in order to perform tasks and solve problems in digital environments'. These broad and complex dimensions are encompassed by the description by van Dijk and Hacker, who identify the skills 'to search, select, process and apply information from a superabundance of sources' (2003, p.316). With changing technology, there have been moves to explore new ways of engaging with learners, with 'gamification', MOOCS and social networking increasingly discussed in the educational literature (Gee 2003; Jona & Naidu 2014; Selwyn 2011). The collaborative and communicative potential of these technologies means that individuals necessarily engage in wider community contexts. This allows the study of digital literacy to be situated in all aspects of the lives of individuals.

Issues of equity and access are encompassed in discussions of who is benefiting and who is creating the content in online interactions and engagement (Zillien & Hargittai 2009). The complexities of 'digital divides' have extended the original definitions, with these becoming more nuanced than earlier concerns about physical access to technology and have been observed to replicate rather than alleviate existing inequalities (Selwyn 2004; van Dijk & Hacker 2003). However, the pervasiveness of technology has been observed to increasingly influence online experiences of literacy, providing further expansion of the local, situated understanding of literacy (Barton & Lee 2012).

The OECD observes that technology increasingly permeates the lives of individuals, socially, professionally and civically, and in this context it is important to consider how digital literacy is represented. The scope and complexity of the area are factors acknowledged in the development of the PIAAC testing in this domain (PIAAC Expert Group in Problem Solving in Technology-Rich Environments 2009). With this vast supply of information, having the ability to critically question information, and who is distributing it, are important.

As a subset of digital skills, digital literacy, viewed from a human capital perspective, is considered an essential component in the employability skills development of individuals (Standing Council on Tertiary Education, Skills and Employment 2012). As employment and education are increasingly accessed through the use of technology (for example, job advertisements and course information, as well as means of inquiry and application),

digital engagement acts as a filter in the process. In the new 'knowledge economies' the effective use of technology is seen as an essential capability for a globally competitive workforce (Australian Industry Group 2016). Within the context of lifelong learning, digital literacy becomes an important tool in accessing online 'anytime learning'. This sentiment is reflected in the inclusion of digital literacy as one of the essential components in the development of foundation skills (Standing Council on Tertiary Education, Skills and Employment 2012).

A human capital perspective of digital literacy requires the identification of specific skills and behaviours, which are measured against what is seen as expert or desirable. This is observed to have repercussions in the labelling of individuals:

One of the challenges of this perspective is that young people's existing behaviors with digital tools are invariably found to be deficient (i.e., non-expert); this often positions youth as 'lacking' digital literacy, a condition which can only be overcome through explicit instruction from experts. (Meyers, Erickson & Small 2013, p.359)

Digital literacy from a social practices perspective also situates the experience of LLN within the lives of individuals. From this perspective scholars have noted that the: 'contexts of communication practice in the modern world are so multimodal that it is not useful to think of literacy education solely in terms of developing generic competences that can be transferred from context to context' (Goodfellow 2011, p.132).

Indeed, from Goodfellow's (2011) investigation of the concept of digital literacies, it appears that the complexities of digital engagement add further to the social practices view to such an extent that traditional literacies are questioned in their relevance and application to the lives of young people. In investigating the provision of LLN to remote Aboriginal Australians, Kral (2016) looks at the complex interconnectedness of LLN and technology and traditional cultures and experiences. In this context it is observed that:

The extent to which all forms of communication and expression – oral, written, gestural, visual and now computer-mediated – are interdependent and can never be extracted from the social, cultural and historical context from which they emerge, in which they change and for which they exist. (Kral 2016, p.72)

In this case we see that LLN in a digital context is fluid, shaped by individual use and shaping individual experiences.

As in the cases of traditional LLN, the use of technology can produce tensions between what is validated as digital literacy by employers or policies (which impact on education institutions) and what 'counts' for individuals in their own communities and lived experiences. In LLN, the utilitarian application of technology for work may exclude the social and civic experiences with which individuals engage (Mills 2010). As digital literacy is framed as the defining factor, the discontinuities between the sites and contexts of people's experiences have become a point of debate (Mills 2010). Thus, as with traditional modes of LLN, digital experiences and what constitutes digital literacy have different meanings, depending on the perspective. The multi-modality of digital forms of literacy and meaning-making through new media challenge the discourse of New Literacy Studies to further widen definitions of literacy and emphasise the need for 'fuzzy boundaries' (Mills 2010). Somewhat paradoxically, given the digital divide in some digital environments, the rapid changes in this field can also afford 'movement toward informal learning contexts where individual agency, sociality and temporal fluidity change the

nature of how people see themselves as knowledge builders and experts' (Meyers, Erickson & Small 2013, p.366). The emergence of new technologies and new literacies adds to the spectrum of perspectives and understanding of the diverse ways in which individuals use technology to engage in an increasingly diverse range of civic, social and work-related activities.

Conclusion

The current provision of adult language, literacy and numeracy education in Australia, which sits largely within the VET sector, is heavily influenced by the policies being implemented in attempts to enhance Australia's global competitiveness, as measured by instruments such as the OECD Program for the International Assessment of Adult Competencies. Policy directives that determine funding requirements in the federal labour market program – Skills for Education and Employment – and the migrant settlement program – the Adult Migrant English Program – reinforce the association between LLN and human capital. Funding and auditing criteria require detailed and continuous records of individual LLN attainments to demonstrate skill development or progression. While human capital and autonomous models may suggest that distinct skills can be taught and that they will contribute to the economic inclusion of previously marginalised individuals, this review has shown that this is not the only perspective in the research literature.

A further challenge is perhaps evident in the historical change in the perception of what literacy is and what it can accomplish:

The problem for literacy studies, then, is not whether literacy is a social practice, or whether it leads directly to improvements in people's lives. Rather, the question is what more we can do, in both our theoretical and practical work, to re-connect our own 'literate practices' with this international movement and to help make the global expansion of literacy once more a key element in the wider struggle for social transformation. (Boughton 2016, p.162)

As McCormack observed of LLN students, their aspirations are varied, and many set out to 'fulfil an expanded sense of educational, social and vocational aspiration' (2016, p.190). In this context we see that LLN as a vector for employment and economic wellbeing is one aspect within a wider conceptualisation of what it means to be literate and numerate.

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