

Education and Employment
outcomes for Victorian sign
language users

Analysis from the 2006 census

©2009

Dr Louisa Willoughby, Vicdeaf researcher

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Executive summary of education and employment report

This report provides an overview and analysis of demographic data on sign language users in Victoria, which Vicdeaf commissioned from the Australian Bureau of Statistics (ABS). The report focuses on data on educational and occupational attainment, but also includes information on the age and country of birth of all those who indicated on the 2006 that they use a sign language at home. The particular measures of educational and occupational attainment used in this report are highest year of schooling, highest qualification, occupation, labour force status and weekly income. For each of these variables only sign languages users aged over 15 are included in the data, and occupational and labour force status data is not presented for those aged 65 and over, as this is the traditional age for retirement in Australia.

The report found that in 2006 there were 2,117 sign language users living in Victoria. The community is relatively young, with around 40% of sign language users aged under 30 and a further 33% aged between 30-49. Less than 15% of sign language users were over 60 at the time of the census, though it is likely that literacy issues in this older age group led to the number of sign language users being under-reported.

Sign language users were more likely to be Australian born than the general population (88% versus 69%), and if they were born overseas were markedly more likely to have migrated to Australia from England or New Zealand than other migrants (30% of migrants from these two countries as against 14% of migrants for the general population). These figures are indicative of the well-documented obstacles deaf people face in attempting to migrate to Australia, as well as the difficulties they face learning Auslan once they arrive in Australia. It is no coincidence that the two largest source countries for Deaf migrants to Victoria are English-speaking countries which use sign languages with a high degree of similarity to Auslan - allowing migrants from these countries (and their families) to move into the Australian Deaf community without the need to master additional languages.

Findings on educational outcomes show that sign language users are starting to achieve parity with the general population in the proportion of people holding University or TAFE qualifications. This is a remarkable achievement given that tertiary education has only been fully accessible to Deaf people since the mid 1990s, when the passage of the Disability Discrimination Act led to the establishment of specialist support services for Deaf and disabled students. However, tentative evidence presented in this report suggests that sign language users are earning lower level tertiary qualifications than member of the general

population. Thus while equality of access appears to have been achieved, equality of outcomes has still not been reached.

Figures on highest year of schooling show that sign language users continue to lag behind members of the general population. Only 35% of sign language users have completed Year 12, as against 44% of people in the general population. Conversely, 15% of sign language users left school in Year 8 or earlier, as compared to 10% of the general population. In the 15-24 age group the proportion of signing students completing Year 12 is within 5 percentage points of figures for the general population, however in older age groups the difference is between 10 and 16 percentage points. Deaf students today undoubtedly receive more encouragement and support services to help them stay on at school than they did in the past and it is pleasing to see that this has led to a strong increase in Year 12 (and also Year 11) completion rates. However, sign language users remain more likely to leave school at Year 10 or below than members of the general population. Given labour market changes over the past 30 years, the pool of jobs open to these early school leavers is contracting and there is real concern that these students may have great difficulty establishing themselves in a career. Consequently they are at risk of long-term unemployment.

Occupational data shows that in 2006 sign language users were 50% more likely to be unemployed than members of the general population (7.8% unemployment rate as against 4.9%), and that those in the 25-44 and 45-64 age groups were also more likely to describe themselves as not participating in the labour force (e.g. not working or looking for work) than members of the general population. Clearly unemployment and under-employment remain strong issues for the Victorian Deaf community – a point underlined by the fact that 52% of sign language users aged over 15 reported earning less than \$400 a week on the census (as against 42% of the general population). Between the ages of 15 and 65 the proportion of sign language users earning less than \$400 a week is at least 10 percentage points higher than for the general population, suggesting that gains being made in educational outcomes are only slowly trickling through to better employment opportunities and income for sign language users.

Sign language users were found to be employed in a wide cross-section of industries and are just as likely to work as a professional, tradesperson or administrative worker than members of the general population. They are however 50% more likely to be labourers or community sector workers than members of the general population, and the proportion of sign language users who are managers (5.3%) is less than half of that seen in the general population (13.5%). All of this suggests that sign language users still face barriers accessing higher-status occupations and that advances in education among the signing population are not necessarily being converted into occupational parity, and particularly income parity

The final section of the report examined the effect of place of residence (Greater Melbourne or regional Victoria) on reported educational and employment outcomes. Location was found to have a small impact on sign language users' education and employment outcomes, however differences between the metro and regional signing population were much lower than those seen between the metro and regional general population. Particularly in the area of education, regional sign language users seemed to have broadly equal success in gaining qualifications to those in Melbourne, though of course these figures say nothing about the ease of accessing courses or the quality of support services available in different areas of the state. Sign language users living in regional Victoria were shown to have greater difficulties finding work (particularly fulltime work) than those in Melbourne, but those in work reported similar occupations to those living in Melbourne.

1. Introduction

This document provides an overview and analysis of demographic data on sign language users in Victoria, which Vicdeaf commissioned from the Australian Bureau of Statistics (ABS). The report focuses on data on educational and occupational attainment, but also includes information on the age and country of birth of all those who indicated on the 2006 that they use a sign language at home. The particular measures of educational and occupational attainment used in this report are *highest year of schooling*, *highest qualification*, *occupation*, *labour force status* and *weekly income*. For each of these variables only sign language users are included in the data, and occupational and labour force status data is not presented for those aged 65 and over, as this is the traditional age for retirement in Australia.

Throughout this report, data on sign language users is compared to that for the general population, in order to ascertain whether signing status has an effect on educational and employment outcomes. As previous studies have found marked educational disadvantage for Deaf and hard of people, as well as difficulties finding suitable employment, this report will also explore the extent to which the data examined in this report presents a similar picture of disadvantage.

As well as signing status, a person's age and place of residence (city/country) may have a strong effect on the educational and employment options open to them. To this end, the latter half of this report provides a breakdown of data on age and place of residents and examines the extent to which sign language users have similar experiences to their cohort of the general population.

2. A note on the data source

The 2006 census provides the most comprehensive data available on the socio-economic position of Victoria's signing Deaf population, and allows for easy comparison with the general (hearing) population. A clear advantage of census data over previous surveys of the Deaf community (e.g. FACS 2004, NSW Deaf Society 1998) is that the census samples the entire Australian population and is thus less prone to sampling errors. The format also allows the researcher to subdivide both the general and signing populations into a number of subgroups, to better understand the relationship between age, place of residence, deafness and educational/ employment outcomes. Yet despite these advantages, the phrasing of census questions and mode of data collection means that caution is needed in interpreting the data.

As has been widely noted in previous studies, the phrasing of the census question about language use – Does the person speak a language other than English at home? – is problematic for a number of reasons:

1. Auslan is not spoken per se
2. Deaf people living with hearing relatives may not use Auslan in the home
3. Some deaf people may not consider their signing to be a 'real language' (cf. Bridge and Ozolins 1999)

In addition to these problems, which may result in the number of sign language users being undercounted, the absence of a question on hearing disabilities means there is no way of knowing how many sign language users are deaf themselves and how many are hearing family members who use Auslan in the home environment. It is hypothesized that children of Deaf adults (CODAs) may account for the higher than expected number of sign language users in the 0-19 age bracket, however at first blush the number of hearing adults listing themselves as Auslan users is taken to be relatively small (not least because Victorian figures align well with Johnston's (2004) estimates of the size of the signing Deaf population in Australia). Lack of a question on hearing disabilities also mean that non-signing deaf and hard of hearing people are simply subsumed into the wider population so this report cannot comment on the affect their hearing loss may have on their educational or employment outcomes. Some of these issues were, however, taken up in the Access Economics report *Listen Hear!* (2006; commissioned by Vicdeaf and the Hearing CRC), which explored the social and economic cost of hearing loss in Australia.

Because the census is a written document, one would anticipate that Deaf people with high English literacy skills would be more likely to fill in their own form, and to answer the questions accurately and appropriately, than those with lower literacy

skills. In cases where someone has filled out the form on behalf of the Deaf person there is always a danger that they will not list Auslan (or another sign language) as one of the person's languages, even if it is their preferred communication method. It is thus hypothesized that the stark drop-off in number of sign language users aged 50 or older reflects generally low-literacy skills and reliance on family to (inaccurately) fill out their census forms, rather than a decline in real numbers in this group. Furthermore the high proportion of "not stated/ inadequately described" answers to census questions among the over 65 age group suggests that many who attempted to fill out their own census did not in fact have the skills to do so. Because of both the low response rate and high number of unanswered questions figures for this age group should be approached with caution throughout this report.

3. General profile of the Victorian signing population

This section of report profiles the Victorian signing population as a whole and compares it to the general population, with later sections exploring the impact of age and place of residents on measures of educational and occupational attainment.

3.1 Age profile of sign language users

Within Australia there is a commonly held view among researchers, professionals and members of the Deaf community that the number of Deaf people using Auslan is in decline. This is attributed to a number of related factors, including advances in hearing aid and cochlear implant technology that give users better access to speech, greater tendency towards mainstreaming Deaf and hard of hearing students, increasing use (and importance) of written English in electronic communication and a range of health measures (such as Rubella immunization) that have seen fewer babies born with hearing impairments over the past 40 years (Johnston 2004). Yet, 2006 census figures paint a picture of a reasonably robust community of over 2,000 signers in Victoria, with a large proportion of members under the age of 20. Declining use among younger speakers is often seen as one of the early signs of language death (Fishman 1991), however, the census figures presented in Figure 1 paint almost the opposite picture, with sign language use highest among those aged 30-49 and 0-19 and dropping off significantly among people aged over 50.

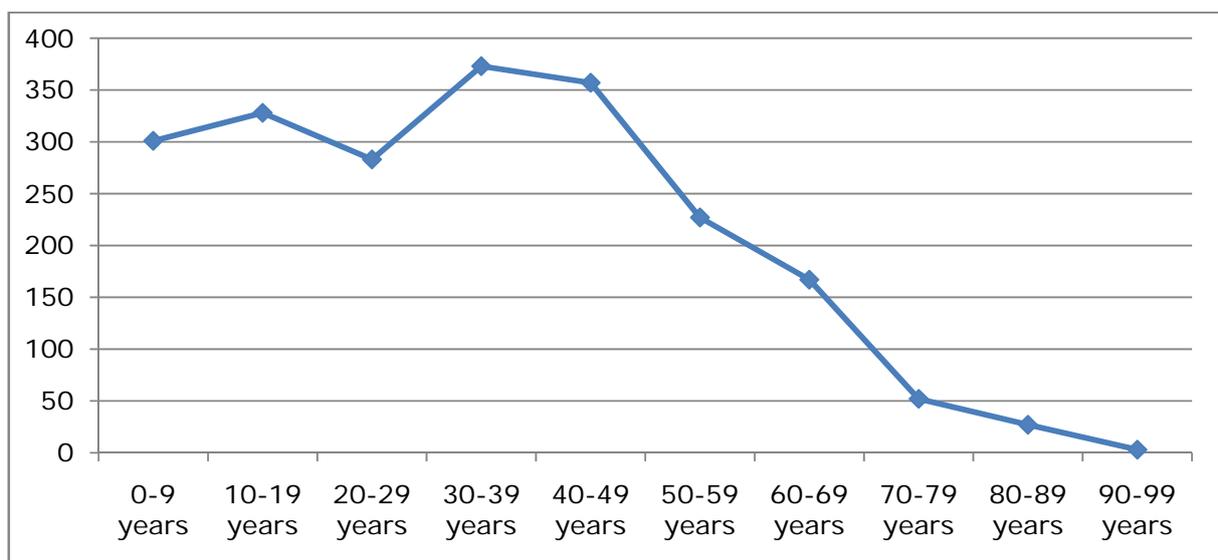


Figure 1 – Number of sign language users by age, Victoria

How can the figures presented above be reconciled with well-documented concerns and evidence of a declining signing population? A first step is to consider not the raw number of sign language users, but the proportion of people within an age group who report using a sign language at home. Using this method, Figure 2 shows a population with smaller fluctuations between the age groups, though the decline among older Victorians remains. Part of this decline is likely attributable to the prominence of oralism at the time that these adults would have been educated, which would have limited their exposure to Auslan as well as giving some of them quite negative attitudes towards sign language use. However as discussed in the opening section of this report, it is felt that reporting errors have also led to sign language users in this age group being significantly under counted.

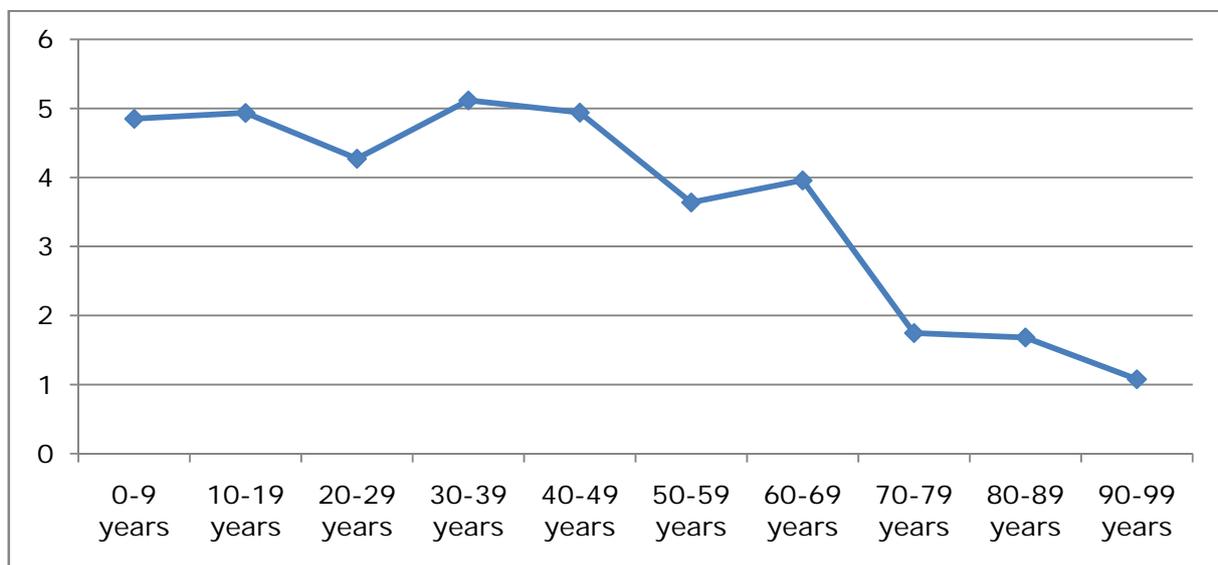


Figure 2 – Number of sign language users in each age bracket per 10,000 head of general population, Victoria

The high number of signing children lends some hope that declines in Auslan use may not be as severe as first predicted. Certainly it is likely that these numbers have been somewhat inflated by the inclusion of hearing CODAs. However, they may also be indicative of a number of families with deaf children are making the effort to use some form of sign language with their deaf child(ren) at least some of the time. Since census data cannot tell us anything about the proportion of interactions that take place in Auslan or the depth of a child's knowledge of a sign language, it is also quite possible that these census figures mask a real decline in the Auslan competence of Deaf children living in Victoria. However, the data does seem to be in line with trends noted overseas (e.g. Gregory, Bishop and Sheldon 1995, Meadow-Orlans and Sass-Lehrer 2003) of families increasingly turning away from oralism as their sole means of communication with their deaf child and incorporating at least some sign language or sign supported speech into parent-

child interactions. Further research is undoubtedly needed to better understand families' language practices and the consequences both the deaf child's language development and the quality of intra-family communication. However for the moment these figures should be taken as a promising indication of increased sign language use in families and perhaps also a changed mindset that takes pride in signing rather than viewing it as a shameful last resort to be turned to if and only if oralism failed (cf. Meadow-Orlans and Sass-Lehrer 2003).

3.2 Country of birth

A striking feature of the Victorian signing population is that members are markedly more likely to be Australian born than the general population (88% versus 69%). Moreover, as Table 1 shows 31% of overseas-born sign language users come from just two countries – the UK and New Zealand – whereas these countries account for just 15% of general migrants to Victoria.

Country of birth	Signing migrants	All migrants
England	22%	11%
New Zealand	9%	4%
Viet Nam	2%	4%
Italy	2%	6%
Greece	2%	4%
Scotland	1%	2%
Malaysia	1%	2%
India	1%	4%
China	1%	4%
Sri Lanka	0%	2%
Born Elsewhere	34%	37%
Not stated	23%	22%
TOTAL	100%	100%

Table 1 – Percentage of migrants born in each of Victoria's top ten migrant source countries

These figures are indicative of the well-documented obstacles deaf people face in attempting to migrate to Australia, as well as difficulties learning Auslan once they arrive in Australia (see Willoughby 2008, 2009 for more on this point). It is no coincidence that the two largest source countries for Deaf migrants to Victoria are English-speaking countries which use sign languages with a high degree of similarity to Auslan¹ - allowing migrants from these countries (and their families) to move into the Australian Deaf community without the need to master additional languages. By contrast deaf adults from non-English speaking countries (and their families) have very limited options for learning Auslan in Australia and so are unlikely to develop sign language fluency post migration. This is an equity issue that Vicdeaf takes very seriously, and the organization is working with a number of

¹ Both Auslan and New Zealand Sign Language (NZSL) are decedents of British Sign Language (BSL) and the three languages are generally thought to be mutually intelligible.

partners to better cater to the (linguistic and more general) needs of deaf migrants and their families (see Willoughby 2008).

3.3 Education levels

Low educational achievement and attainment has been a perennial problem for Deaf and hard of hearing students. Historically, Deaf students in Australia have had limited access to upper-secondary and tertiary education, with specialist schools for the Deaf concentrating on teaching basic literacy and numeracy skills and preparing students for working in low-skilled manual jobs. Thus a survey of Deaf students who left school in 1960 found that none of the 46 respondents had any post-secondary education (AAD 1973, cited in Winn 2007) while the NSW Deaf Society's *Hands Up NSW* report (1998) found that only 24% of the 858 respondents had undertaken tertiary studies, (comprising 7% each with trade or certificate level qualifications, 3.5% each with diploma or bachelor level qualifications and less than 1% with post graduate qualifications). Part of the reason for the low take up of higher education is that many Deaf and hard of hearing people lag far behind their hearing peers in literacy and numeracy levels throughout their education. A range of studies report deaf students on average have a reading age many years below their chronological age (e.g. Allen 1986, Welsh 1993, Hyde 1998) and somewhat alarmingly the 1994 Annual Survey of Deaf and Hard of Hearing Children and Youth found that only a quarter of deaf students entering US postsecondary institutions read at a fifth grade level or higher (Allen 1994). Thus Bat-Chava et al (1999:51) conclude that "even those deaf students who pursue higher education do so with very limited skills".

The above notwithstanding a number of developments in recent years have worked to improve the educational opportunities available to Deaf students in Australia. Perhaps the most important of these was the passage of the Disability Discrimination Act in 1992, which both prohibits discrimination on the basis of disability and requires tertiary institutions to make "reasonable accommodations" to support the needs of disabled students. In the case of Deaf and hard of hearing students, what this means in practice is that they have access to support services such as Auslan interpreters, notetakers, tutoring, extra time in exams and technologies such as FM systems and hearing loops to aid their classroom participation (Clark 2007a:12). While issues remain in terms of funding and coordinating these support services (McLean 2003, Clark 2007a) they have gone a long way towards making higher education accessible for deaf students where previously no supports were formally available.

At the school level there has been a gradual increase in the variety of education options available for deaf students in the last 20 years, increasing the likelihood

that families will be able to access quality programs that suit the needs and communication preferences of their child. Australia has one of the highest rates of mainstreaming deaf students in the world (Power and Hyde 2002), and in the last 10 years there has been increasing (though by no means automatic) provision of Auslan interpreters to Deaf students in mainstream classrooms (provided in addition to support from itinerant Teachers of the Deaf; Richards 2006, Williamson 2006, Komesaroff 2008). Auslan-English bilingual programs have also been established at schools for the Deaf in 5 of Australia's 8 states and territories (Komesaroff 2001:300-1), providing an alternative to oralist only or signed English programs. While a number of concerns remain about the adequacy and accessibility of support programs for deaf students in Australian schools, choice in programs has certainly increased. Anecdotal evidence also suggests students are being given greater encouragement and support to stay at school and study whatever subjects are of interest to them in the senior high school years, a situation in stark contrast to that at some specialist schools for the Deaf where students only gained the opportunity to finish high school in the late 1980s (Deaf Society of NSW 1998:20²).

3.3.1 Highest educational attainment

Given the context of historically poor educational attainment for Deaf students, data from the 2006 census paint a very positive picture at first blush. Figures showing only a two percentage point difference between the number of sign language users and members of the general population who hold bachelor degrees or higher tertiary qualifications (15% and 17% respectively) are particularly encouraging and suggest that a long-standing educational gap may be starting to close. Furthermore, sign language users have overtaken the general population in terms of the number of people holding certificate or diploma level qualifications (22% as against 21%), and show lower numbers of speakers with school education only (45% as against 48%). A t-test of the raw data shows there is a slight difference in the educational attainment of sign language users and the general population in Victoria ($p > 0.05$), but given the large size of the data set (approx 5 million individuals) and the unbalanced size of the populations in each group this difference should not be considered statistically significant.

² In Victoria the number of students continuing on to VCE level at the Victorian College for the Deaf is still too small to warrant the provision of classes, and students are instead sent (at taxpayers expense) to the adjacent Wesley College to complete their education with support from VCD staff.

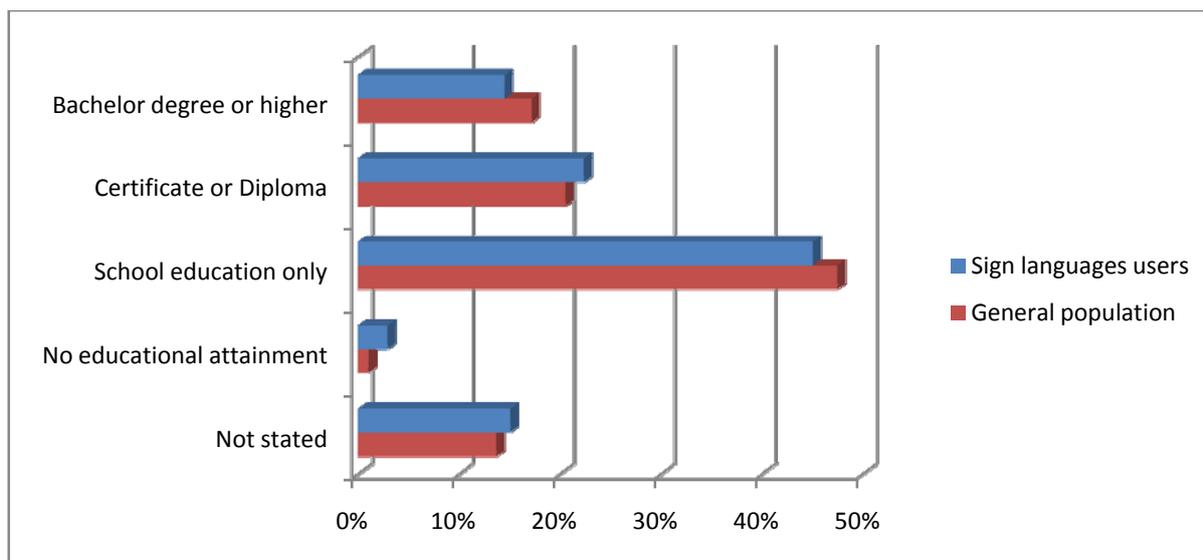


Figure 3 – Highest educational attainment for sign language users and the general population, Victoria

These figures show much higher levels of tertiary education (particularly at the university level) than seen in previous surveys of the Australian Deaf community (Deaf Society of NSW 1998, FACS 2004, Winn 2006), however the apparent improvement in educational outcomes may simply reflect the different sample populations rather than any change in outcomes. While it is heartening to see that Deaf people have embraced higher education in such large numbers, this also raises important questions about the quality/ equivalence of their educational qualifications and experiences and ability to translate qualifications into occupational capital.

The census data presented above is in some ways problematic as it does not differentiate between high-level TAFE qualification (such as Diplomas or Advanced Diplomas) and much more basic low level certificate courses (such as the Certificate I in General Education, designed principally as a remedial program for early school leavers). However, data compiled by Clark (2007b) on the study programs of students aged 15-30 with a hearing loss in the Vocational Education and Training (VET) system between 2003-2005 gives a sense of the courses undertaken by Deaf students in Victoria. As Clark's data is based on those who declared a hearing impairment to the education provider and only covers 15-30 year olds over this three year period it is difficult to know how accurately it reflects the educational experiences of the cohort investigated in the present study however it provides the most representative portrait available of this group. Figure 5 shows how the deaf population were spread over the various levels of certificate and diploma courses, and compares this to enrolment patterns for the general Victorian VET population:

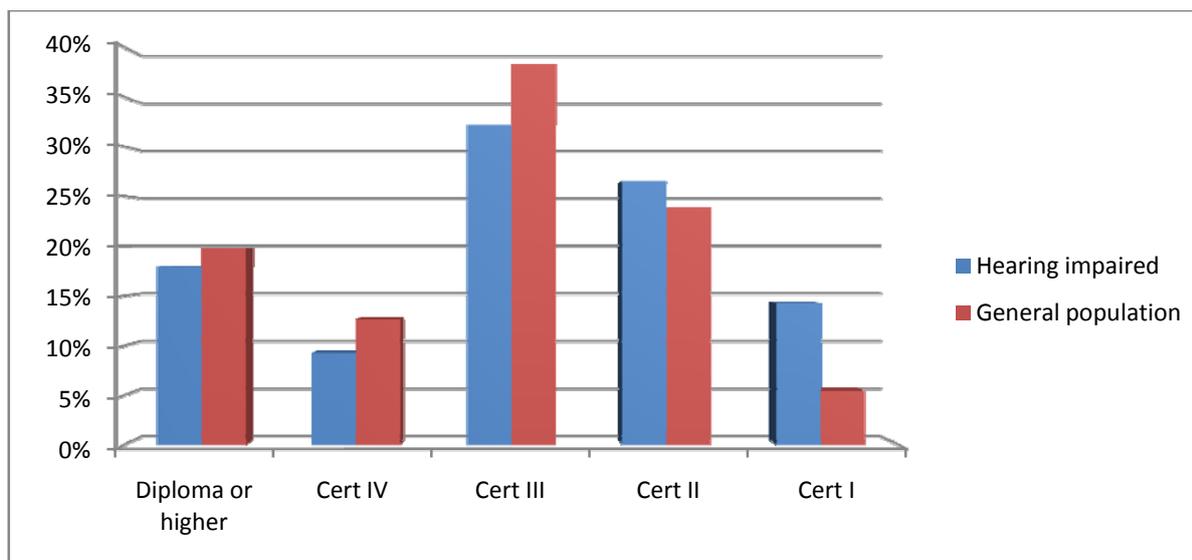


Figure 4 – Percent of Victorian VET students enrolled in each level of VET course by hearing status (based on Clark 2007b:12)

This data shows that over 40% of Deaf and hard of hearing VET students in Clark’s sample were enrolled in low level Certificate I and II courses, whereas in the general population less than 30% of VET students were studying at this level. The difference is particularly marked at the Certificate I level, which is chosen by 14% of hearing impaired students, but only 5% of the general student population. Conversely, hearing impaired students are underrepresented in higher level Certificate and Diploma courses, with the clearest difference seen at the Certificate III level (studied by 32% of hearing impaired students and 38% of the general population). A t-test of Clark’s raw data shows these differences in distribution to be highly significant ($p > 0.001$). Thus while Census data suggests sign language users might be attaining parity with the general population in attending VET course, Clark provides strong evidence that the VET qualifications they are studying and attaining are at a lower level to those commonly studied in the general population. Clark also notes that only 37% of Deaf and hard of hearing students in her sample had completed Year 12 before they undertook their VET course, suggesting that for many Auslan users VET courses act as a replacement for, rather than an addition to, senior secondary education.

3.3.2 Highest year of schooling

Because of the potential for certificate and diploma level figures to mask poor educational outcomes for Deaf students it is important to also look at census figures on level of secondary education. Here there is a more pronounced difference between the signing and general population than was clear in Figure 4: while 44% of the general population have completed Year 12 this figure falls to 35% for sign

language users, while conversely 12% of sign language users left school at year 8 or below and 3% never attended school in the first place (9% and 1% respectively for the general population). A t-test shows of the raw data shows these differences in distribution to be highly significant ($p > 0.001$).

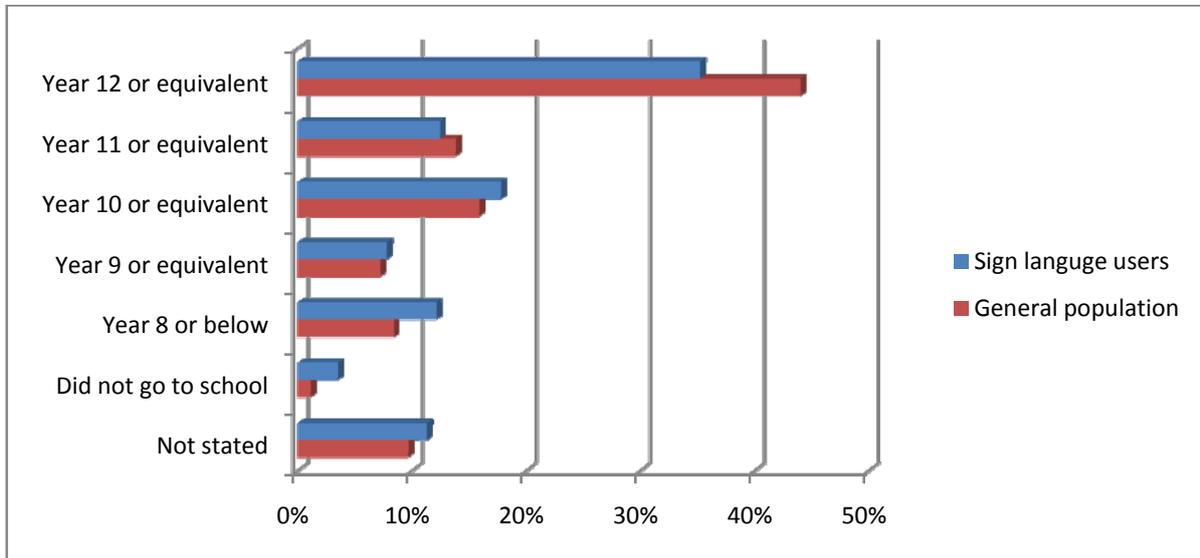


Figure 5 – Highest year of schooling for sign language users and the general population, Victoria

It takes time for advances in education to trickle through a population, and in fact later this report will show that younger sign language users are approaching their hearing peers in Year 12 completion rates. Given that it is only in the last 20 years that Deaf students have gained access to support services allowing them to access mainstream senior secondary and university courses it is remarkable that over 50% of sign language users have completed year 11 or 12 and 15% hold university-level qualifications. Yet at the same time results shown in Figure 6 serve as an important reminder that the educational gap between deaf and hearing Australians is still quite pronounced and add weight to earlier claims that the high rates of tertiary education among sign languages users might mask the low level (and hence usefulness) of many of these qualifications. Such findings also have important consequences for employability, as Clark notes that while deaf students entering the VET system having already completed Year 12 were likely to undertake Vocational courses in areas such as Community Services, Health and Business, the most popular area of study for deaf early school leavers was general education (2007:10). Thus at the end of their studies these students were not prepared to enter a particular career and are unlikely to benefit from the increases in employability and remuneration often associated with higher education.

3.4 Occupations and income

Unemployment, and particularly underemployment have always been major issues for Deaf communities around the globe. It is difficult to quantify the degree to which Deaf people have worse employment outcomes than their hearing peers because formal studies of employment outcomes tend to employ quite different sampling techniques and methodologies and are of course subject to the vagaries of the employment market in their particular time and place. However a consistent pattern emerges from Australian, and US studies that Deaf³ people tend to have an unemployment rate between 2-4 times higher than the national average (Passmore 1982, Hyde 1988, Welsh and Gallinger 1992, Deaf Society of NSW 1998, Winn 2007). When education level is controlled for some parity between Deaf and hearing bachelor degree holders emerges, but the lower a Deaf person's level of education the more likely they are to be unemployed relative to hearing people with equivalent education (Cf. Welsh and Walter 1987, Welsh and Gallinger 1992, Schroedel and Geyer 2000).

Underemployment is much harder to measure – not least because it can be variously defined as working in a part-time or casual positions when one would prefer full-time work or working in jobs for which one is over-qualified or manifestly under-paid. However defined or measured though it is clear that underemployment and associated issues of discrimination at both the hiring and promotions level are common problems for working Deaf people (cf Passmore 1982, Schroedel and Geyer 2000, Punch et al 2004, Winn 2007,) and mean that they may face difficulties translating what Bourdieu (1986) would term their cultural capital (educational qualifications, skills, experience etc) into the economic and social capital of stable, stimulating and appropriately remunerated employment.

3.4.1 Rates of unemployment and labour force participation

In the 2006 census, the unemployment rate⁴ for Victorian sign language users aged 15-64 was a 8.5%, but needs to be interpreted in light of the very low unemployment rate (5.4%) for the general population aged 15-64. As much as many sign language users have work, as a group they are still around 50% more likely to be unemployed than members of the general population. Sign language users aged 15-64 are also less likely than members of the general population to be working or looking for work: only 65% of sign language users participate in the labour force, as against 71% of the general population. These figures suggest that

³ Studies also differ in the scope of who they include as "deaf" although the majority concentrate on people who use a sign language as their preferred mode of communication.

⁴ Measured as the percentage of people who are unemployed divided by the number of people who are either employed or unemployed.

a proportion of Deaf people who are long term unemployed have given up actively looking for work and are thus no longer counted as unemployed, despite being willing and able to work should the opportunity arise.

How does this data compare to other surveys of labour force participation among sign language users in Australia? FACS (2004) analysis shows a similar difference in the level of unemployment and labour force participation between their sample of 551 Deaf Auslan users and the general population figure from the 2001 census, but with slightly lower rates of labour force participation all round (60% of Deaf Auslan users, 63% of the general population). The NSW Deaf Society's "Hands up" survey from 1998 gives us a more long-term perspective on employment trends, although one must take into account the very different economic condition prevailing in Australia at the time this survey was taken. While the Hands Up report also found unemployment rates for sign language users were around 50% above those of the hearing population (11.8% as against 7.6%) it also found markedly lower rates of labour force participation than either census. This may in part reflect different sampling techniques (and an over-representation of students in the data set), but may also reflect greater opportunities, pressures or desires for Deaf people to enter the workforce than have previously existed. Further research on the 'push' and 'pull' factors that affect the employment rates of sign language users would doubtless be of great interest to government, service providers and Deaf community groups and allow for more effective support service provision in the future. The report will return to these issues below, when it explore occupations among those sign language users who have work.

3.4.2 Occupations

Sign language users are found working in a wide variety of industries. Within the Deaf community, government bureaucracies and trades are frequently mentioned as the primary employers of Deaf people (FACS 2004, personal communication with focus groups); while Hyde's survey of 132 Deaf Queenslanders found the most common occupations for respondents were labouring (29%) and clerical work (17%; cited in Winn 2007:384). ABS census data for Victoria loosely bears out these patterns and shows 'professionals' (22%) and 'labourers' (16%) to be the principal occupation categories of Victoria's sign language users. Quick comparison with the principal occupations in the general population shows that sign language users are less than half as likely to be managers than members of the general population (6% as against 13%), and are 50% more likely to work as labourers or community and personal support workers,⁵ as shown in Figure 7.

⁵ Unfortunately the introduction of different coding schemes for occupations means that we are unable to directly compare 2006 census data with previous censuses or other surveys of occupations. However, a brief discussion of Winn's survey of 60 Deaf adults in South

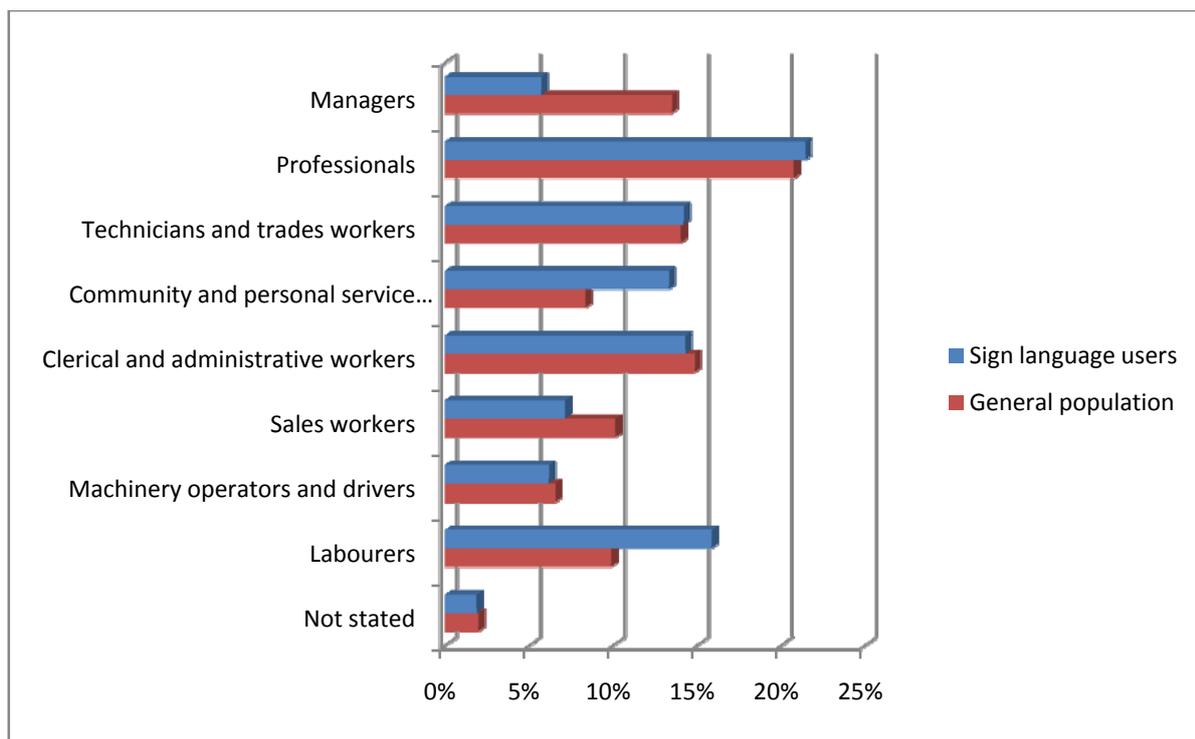


Figure 6 – Occupational category (excludes “not stated” category of responses) for sign language users and the general population, Victoria

Differences in occupations between sign language users and the rest of the population are partly a function of the different communicative demands of various jobs (e.g. relatively few Deaf people work in face-to-face sales because of the importance of oral English skills in these roles) but also reflect differences in education levels and potentially discrimination. The high proportion of labourers is a finding shared with numerous studies of occupations within the Deaf community (e.g. Welsh and Gallinger 1992, Schroedel and Geyer 2000) and can be linked both to the low educational requirements of the job and its physical nature, which means that Deaf people can more easily learn job requirements by watching others and can perform their job well even with only minimal communication with their workmates. Conversely the high educational and communicative skills required of managers serves as a barrier for many sign language users, and many who feel that they would be qualified for more senior roles also feel that employer inflexibility and/or discrimination mean that they are unfairly passed over for

Australia in 1995 provides an interesting counterpoint to this data and raises questions as to how much differences between the two data sets are simply the result of coding/sampling differences or reflect changes in the major sectors employing Deaf people in Australia. Winn found that his participants were over represented as tradespersons (21.7% of Deaf as against 15% of the general population) and unemployed (37% as against 10.6%) and particularly underrepresented as managers and administrators (4.3% as against 13.6%) and labourers (2.2% as against 15.5%)

management roles (Welsh and Walter 1987:14, see Clark 2007 and Punch, Hyde and Power 2007 for an overview of workplace experiences of Deaf Australians). It is presumed that the high proportion working as ‘community or personal service workers’ is largely made up of sign language users working for deafness organizations – where their skills as sign language speakers are recognized and in demand and there is a more “Deaf friendly” workplace culture.

3.4.3 Individual weekly income

The final figure for this section of the report shows how the educational and occupational trends noted above translate into individual weekly income (before tax and other deductions). Here it is clear that wide income gaps remain, with sign language users 10 percentage points behind the rest of the population in terms of the number of people earning \$800 a week or more (15% as against 25%), and 12 percentage points ahead in the number earning \$0-\$399 (46% as against 34%). A t-test of the raw data shows these differences in distribution to be highly significant ($p > 0.001$). To help contextualize these figures, at the time of the census the minimum full-time wage in Australia was \$484.40, while a single person on unemployment benefits or the disability pension received \$273 a week, excluding supplements and allowances (ABC 2006, Centrelink 2008).

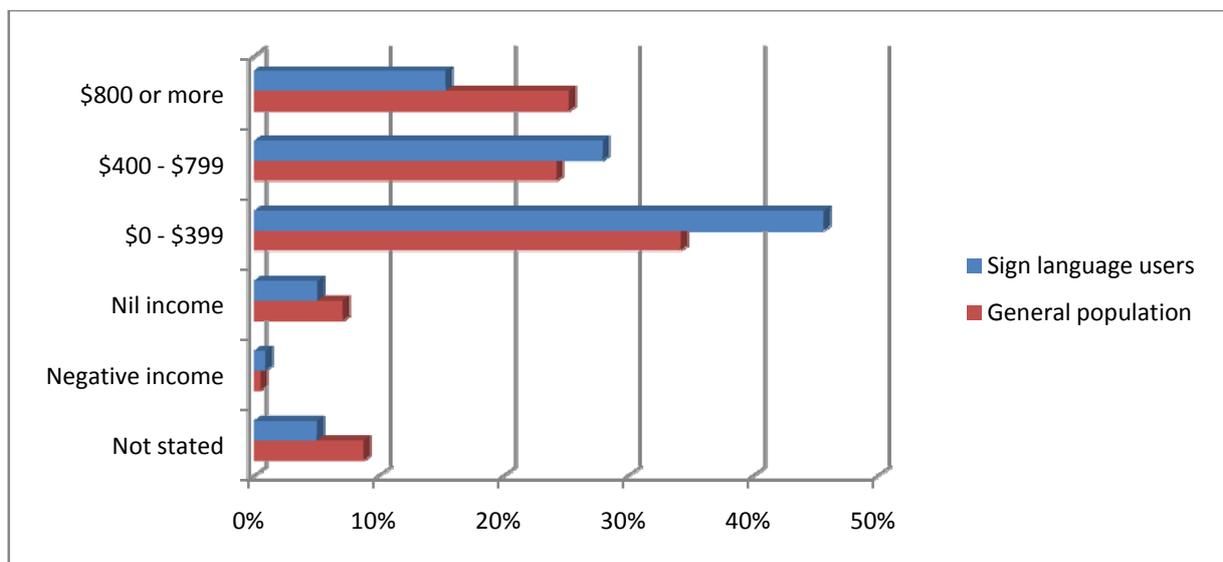


Figure 7 – Individual weekly income (before tax) for sign language users and the general population, Victoria

The income levels listed in Figure 8 give a crude breakdown of the relative earning of sign language users and the general population. Yet it should be noted that income differences have persisted in studies that control for factors such as age (Welsh and MacLeod-Gallinger 1992), occupation category (Walter et al 1987), post school qualification (Schroedel and Geyer 2000) and even the combined

variables of gender and occupation (Winn 2006). Winn's data is particularly relevant here as it also relates to the Australian context – he found that the deaf women in his study earned between 5.1% and 40.3% less per week than average for full-time female employees in their industry, while for men the difference was 21%-34% less.

Several factors are likely to be at work in suppressing the income of Deaf workers. As was noted above, underemployment is a very real issue within the Deaf community and means that workers frequently take jobs 'beneath' their current skill level because they have had no success gaining employment in their chosen field (cf. Clark 2007a, but note Punch et al 2007 report 80% of their Deaf and hard of hearing respondents claimed their first job after university was directly related to their field of study). Lower than average wages may also be indicative of Deaf workers clustering in more junior positions and having difficulty moving up the career ladder (cf. Welsh and Walter 1987) – a point that will be explored in more detail in the following section on age differences within the population. Finally in at least some instances it is likely that Deaf people are simply paid less than their hearing peers in comparable roles (a point raised by Welsh and MacLeod-Gallinger 1992:188) – though of course any attempts to prove the existence and extent of underpayment in all but the most unionized workplaces are likely to prove difficult.

The disproportionately high number of sign language users earning less than \$400 a week may suggest relatively high rates of welfare dependency in this group. This conclusion gains indirect support from analysis of the 2001 census (cited in FACS 2004:24) which found that the most common wage bracket for sign language users was \$200-299 a week – precisely the bracket for most Centrelink pensions. The author is not aware of any Australian data outlining the proportion of Deaf and/or hard of hearing individuals who claim different types of social security benefits, however in the US Walter and Clarcq found 20% of their sample claimed Social Security Disability Insurance (2000:75), while Schroedel and Geyer (2000:307) found a slightly lower rate of 15%. An important area of further research for both government and deafness organizations would thus be to explore rates of welfare dependency within the Deaf community and to identify measures which could improve employment outcomes and self-sufficiency.

4. Age differences within the population

Within both the Deaf and hearing population age has a complicated effect on people's income, occupation and educational attainment. In general terms the age effect occurs on two levels: firstly people's education and income level normally increases throughout their working lives as they progress in their careers, and secondly societal and technical changes have led to significant changes in the last 40 years in the educational and career opportunities afforded to young people. Thus while it was previously common for students to leave school around age 15 and take up an apprenticeship or begin fulltime work directly, modern jobs increasingly require a higher level of education, and students who have not finished school often experience real difficulties finding stable employment (cf. Punch et al 2004: 29).

In order to gain a sense of the relationship between age and education and employment, this section of the report subdivides the signing and general population into four age groups: 15-24, 25-44, 45-64 and 65 and over. The focus of this section will be on understanding the impact of age on outcomes for the Deaf community and contrasting these with outcomes seen in the general population for the various age groups.

4.1 Education

Starting in the post-war period, Australia's education system has seen a variety of reforms designed to increase the number of students completing the senior secondary years and accessing higher education (for an overview of these reforms see Burke and Spuall 2001). Additionally, from the 1970s onwards, the number of jobs available to early school-leavers has contracted and those that remain tend to be low-paid, unstable and offer minimal opportunities for advancement (Punch et al 2004: 39). These two factors – which are of course interrelated – have led to a dramatic rise in the proportion of Australian students completing Year 12. Thus as late as 1979 only 34.7% of students finished Year 12, with this figure rising to 60.3% in 1989 and 72.3% in 1999 (Burke and Spuall 2001: 445). Similarly between 1980 and the mid 1990s the proportion of students entering TAFE or university courses after leaving high school doubled – from 20% to 40% (Long, Carpenter and Hayden 1999).

In addition to advances in general education, educational opportunities for Deaf students have increased markedly in recent years, as support services become available at more and more institutions. It is clear that historically Deaf students have had far fewer educational opportunities, and hence much lower educational attainment, than their hearing peers but a central question of this section is the

extent to which support services have been able to close this gap between signing students and members of the general population in the youngest age group under investigation. The changing nature of the labour market also means any lingering discrepancies between the educational outcomes for Deaf and hearing students may be concerning, since modern jobs increasingly require high level literacy skills and many of the manual industries which have traditionally employed a large number of Deaf people with lower education skills have contracted rapidly since the 1990s (Watson and Boone 1998). When coupled with the increasing importance of text-based communication technologies such as TTY, SMS, instant messaging and captioning within the Deaf community (see Power et al 2007) the disadvantages faced by Deaf people who have received only basic education are likely to be much greater than for comparable groups in the past.

4.1.1 Age and highest educational attainment

Looking first at figures on highest educational attainment shows that for both sign language users and members of the general population education peaks in the 25-44 age group and then decreases for the two subsequent age groups. Moreover, the difference between the age groups is almost always greater than the difference between sign language users and members of the general population of the same age, suggesting that generation has a stronger impact on education opportunities than signing status. None-the-less, for all age groups the overall proportion of sign language users holding tertiary qualifications (and particularly Bachelor degrees or higher) is lower than the than in the comparable general population, and even in the 15-24 age group there remains a small proportion of the signing population who have no educational attainment. Figure 9 and Tables 2 and 3 give more detailed breakdowns of educational attainment across ages for the two groups.

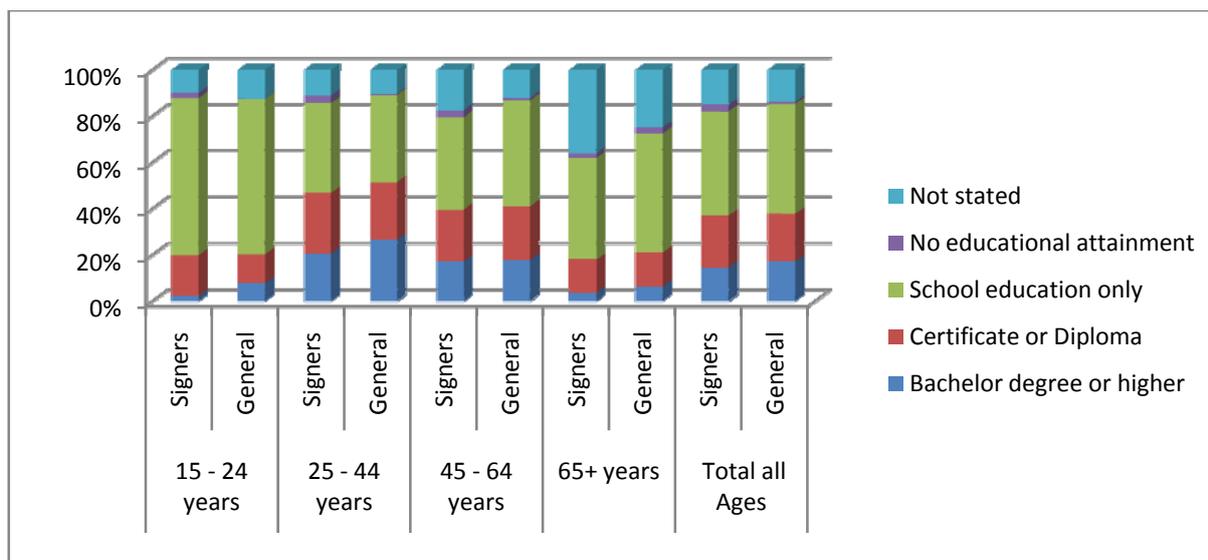


Figure 8 – Highest educational attainment by age for sign language users and the general population, Victoria

Highest qualification	15 - 24 years	25 - 44 years	45 - 64 years	65+ years	Average all ages
Bachelor degree or higher	2%	21%	17%	4%	15%
Certificate or Diploma	18%	26%	23%	14%	22%
School education only	68%	39%	40%	44%	45%
No educational attainment	2%	3%	3%	2%	3%
Not stated	10%	11%	18%	36%	15%
TOTAL	100%	100%	100%	100%	100%

Table 2 – Highest educational attainment by age: sign language users, Victoria

Highest qualification	15 - 24 years	25 - 44 years	45 - 64 years	65+ years	Average all ages
Bachelor degree or higher	8%	26%	18%	6%	17%
Certificate or Diploma	13%	25%	23%	15%	21%
School education only	67%	38%	46%	51%	48%
No educational attainment	0%	1%	1%	3%	1%
Not stated	12%	10%	12%	25%	14%
TOTAL	100%	100%	100%	100%	100%

Table 3 – Highest educational attainment by age: general population, Victoria

Given that universities and TAFEs have only been obliged to provide support services to Deaf and other students with special needs since the mid 1990s, it is perhaps surprising that 40% of signing 45-64 year olds and 47% of signing 25-44 year olds hold a tertiary qualification. Logic would suggest that many of these people would have gained their qualifications as mature-aged students rather than accessing higher education straight after school, and indeed Clark (2007a:24)

found in her survey of that 59% of hearing impaired students who completed VET courses in Victoria in 2003 were in the 30-59 age bracket. The apparent enthusiasm for further education within the Victorian Deaf community is commendable and helps account for the strong gains in educational attainment the community has seen in recent years. Yet at the same time we should note that in the two younger age groups there is roughly a 5.5 percentage point gap between the proportion of sign language users and members of the general population who hold Bachelor degrees or higher qualification, suggesting that full equality of opportunity is yet to be reached. It will be interesting to see in future censuses whether this trend continues or whether it is simply a small relic of much greater historical inequality.

4.1.2 Age and highest year of schooling

A similar picture emerges from findings on the highest year of schooling completed for both the signing and general population. Here the 15-24 and 25-44 year populations show only minor variation based on age or signing status when compared to the quite marked decline in attainment, (particularly in the signing population) for the 45-64 and over 65 age groups. While sign language users under 45 are still less likely to have completed Year 12 than their peers in the general population, there is a remarkable increase in Year 12 completion rates across the 4 age groups: while only 10% of sign language users aged over 65 had completed Year 12, this proportion rises to 22% for the 45-64 group, 44% for 25-44 year olds and 46% among 15-24 year olds. Certainly completion rates rise within the general population over the same time period, but not nearly as dramatically. Figures for the 15-24 year signing population are particularly encouraging because they encompass all 15-24 year olds, not just those who have left school already⁶. While there is unfortunately no way of determining from census data what proportion of these students are still at school it seems reasonable to hypothesise that the proportion of signing students who eventually complete Year 12 will be higher than the 46% who have already done so. Figure 10 and Tables 4 and 5 give more detailed breakdowns of educational attainment across ages for the two groups

⁶ Thus a student who is currently in Year 12 would show up as having completed Year 11 or equivalent. Since Victorian students can only attend secondary schools until the age of 21 (after which they must transfer to TAFE or other adult education providers if they have not yet completed Year 12) we can presume that the vast majority of those aged over 25 have finished their school careers.

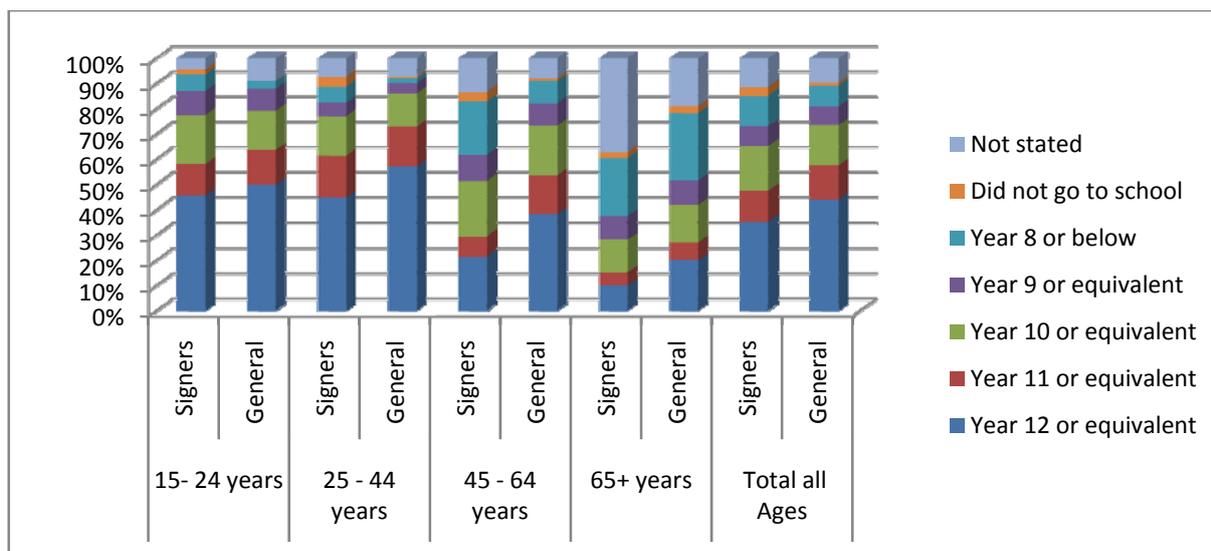


Figure 9- Highest educational attainment by age for sign language users and the general population, Victoria

Highest year of schooling	15 - 24 years	25 - 44 years	45 - 64 years	65+ years	Average all Ages
Year 12 or equivalent	46%	45%	22%	10%	35%
Year 11 or equivalent	13%	17%	8%	5%	12%
Year 10 or equivalent	19%	16%	22%	13%	18%
Year 9 or equivalent	10%	5%	10%	9%	8%
Year 8 or below	7%	6%	21%	23%	12%
Did not go to school	2%	4%	4%	2%	3%
Not stated	4%	7%	13%	37%	11%
TOTAL	100%	100%	100%	100%	100%

Table 4 - Highest year of schooling by age: sign language users

Highest year of schooling	15 - 24 years	25 - 44 years	45 - 64 years	65+ years	Average all Ages
Year 12 or equivalent	50%	57%	38%	20%	44%
Year 11 or equivalent	14%	16%	15%	7%	14%
Year 10 or equivalent	15%	13%	20%	15%	16%
Year 9 or equivalent	9%	4%	9%	10%	7%
Year 8 or below	3%	2%	9%	27%	8%
Did not go to school	0%	1%	1%	3%	1%
Not stated	9%	7%	8%	19%	10%
TOTAL	100%	100%	100%	100%	100%

Table 5 - Highest year of schooling by age: general population

Comparing data on the proportion of students to finish Year 12 with the proportion who hold Bachelor degrees in each age group yields some interesting results. While 139 signing students in the 15-24 age bracket have completed Year 12, only 7 hold

a bachelor degree – around 5% of those who completed Year 12. By contrast the number of 15-24 year olds in the general population who hold Bachelor degrees is 15% of the number of Year 12 graduates. The discrepancy in the proportion of Bachelors graduates may be simply a matter of Deaf students taking longer to complete their studies than the average hearing student. This explanation appears highly likely given that in the 25-44 age bracket the ratio of Bachelor degree holders to Year 12 graduates is almost identical in the signing and general populations (47% and 46% respectively). Schroedel and Geyer's (2002) longitudinal study of Deaf college graduates in the US shows a strong pattern of graduates upgrading their qualifications in the 15 year period of the study, so it may also be that the reason Deaf students seem to take longer to complete a Bachelor qualification is because they prefer to first enroll in lower level courses (not least to plug knowledge gaps they may have from poor schooling) and then go on to university rather than entering a university course straight out of school. Further research on this point is certainly needed in the Australian context, however.

Another striking difference between the signing and general population emerges in the 45-64 age group, where the proportion of Bachelor degree holders to Year 12 graduates in the signing population is 79%, as against 46% in the general population. This might suggest that exceptionally large numbers of sign language users who finished Year 12 went on to university study but may also be indicative of Deaf students in this age group accessing university through programs for mature-aged students that do not require applicants to have completed Year 12. In the UK, Richardson (2001) found students who declared a hearing loss were overrepresented among students who gained admission to their course through pathways not requiring GCE Advanced Level (equivalent to Australian Year 12) and anecdotal evidence certainly suggests this pathway is utilized by a number of people within the Victorian Deaf community. Clearly though more information is needed about both Deaf students pathways to higher education and the kinds of subjects they study once they are there in order to gain a clear picture of the degree to which Deaf and hearing students differ in their educational pathways and outcomes.

In closing this section it should be noted that despite improvements in education there continues to be a small but important group of sign language users who have had little or no education (10% of those aged 25-44 were educated to year 8 or below and 8.5% of the 15-24 age group). These members of the community are likely to have very low English literacy skills and may require quite extensive support services to help manage their own affairs. It is unknown what percentage of this group have multiple disabilities, but it is likely to be higher than the 25-33% commonly reported by studies of Deaf students attending mainstream educational

institutions (Luckner and Miller 1994, Power and Hyde 2002, Richardson 2001), further adding to the support needs of this group of potentially quite vulnerable and challenging clients.

4.2 Occupational data

Given the wide differences in educational attainment between Deaf people of different ages explored above, one would anticipate these different age cohorts to have quite different occupational profiles. For the general population, there is a strong correlation between level of education, occupation and earnings, and a number of US studies (principally sampling graduates of college programs for the Deaf) have found that education remains a significant predictor of occupation and earnings for people who are Deaf or hard of hearing (cf Welsh and Walter 1987, Welsh and MacLeod-Gallinger 1992, Schroedel and Geyer 2003). Welsh and MacLeod-Gallinger (1992) give a clear illustration of the effect college education has on employment, occupation and relative earnings among their sample of 6,000 Deaf and hard of hearing students who had attended US colleges. They found that those students who left college without a degree were more likely to be unemployed (19%) than those who completed a Sub-bachelor degree⁷ (15%) who were in turn much more likely to be unemployed than those with a Bachelor degree or higher (3%). Similarly, while only 2% of those with no college worked as managers and professionals and 34% were machine operators or labourers, 64% of those with a Bachelor degree or higher had managerial/ professional work and only 6% still worked in labouring roles. While Welsh and MacLeod-Gallinger found that there was always an income gap between students in their sample and similarly educated hearing peers, they found that it decreased markedly as education level increased. Thus those who left college with a degree earned 32% less than the national average for people with only high school education, with the difference declining to 21% for those with a sub-bachelor degree, 17% for a Bachelor degree and only 11% for those holding a Masters degree (1992:197).

This report does not have access to the kinds of detailed cross-tabulation used in the Welsh and MacLeod-Gallinger study, however it is predicted that the rising level of education in each successive generation of Deaf Victorians will see a corresponding rise in measures of occupational attainment. However the question remains as to how well Deaf people in each age group are able to keep pace with the occupational advances seen in the general population.

⁷ That is a two year college degree loosely equivalent to a TAFE diploma

4.2.1 Age and unemployment and labour force participation

Earlier the report showed that sign language users were only slightly less likely to participate in the labour force than members of the general population (64% as against 67%), but had a markedly higher rate of unemployment (7.8% as against 4.9%). As Figure 11 demonstrates, rates of labour force participation vary quite significantly across the 4 age groups: although those between 15 and 65 are technically of working age around 40% of 15-24 year olds are yet to enter the labour force, while early retirement suppresses labour force participation rates in the 45-64 age group. These trends apply to both sign language users and members of the general population across the age groups, however, sign language users almost always have both lower rates of labour force participation and higher rates of unemployment than their peers in the general population.

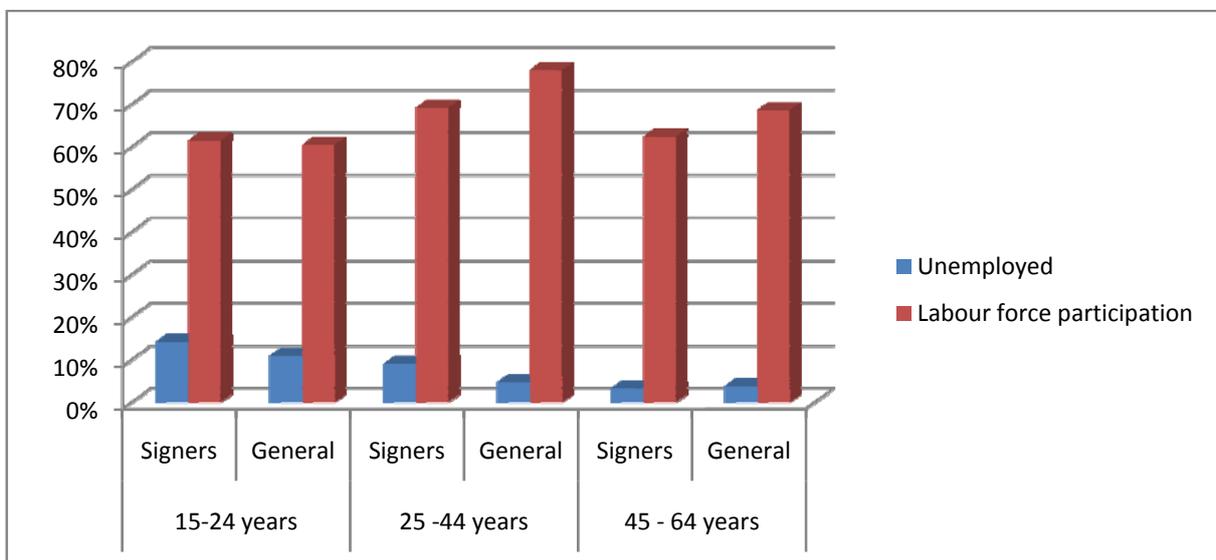


Figure 10 – Labour force participation and unemployment rates by age for sign language users and the general population, Victoria

Differences in employment outcomes between the signing and general population are clearest in the 25-44 population, which interestingly is also the age bracket where differences between the proportion of sign language users and members of the general population who hold tertiary qualifications is greatest (47% and 51% respectively). While 78% of the general population in that age bracket participate in the labour force, only 69% of sign language users do. Moreover, of those participating, 9.0% of sign language users aged 25-44 are unemployed, as opposed to 4.7% of their age mates in the general population. Interestingly, this stark difference in unemployment rates disappears in the 45-64 age group – in fact sign language users in this group are less likely to be unemployed (3.3%) than members of the general population (3.8%). However, as the proportion of sign

language users participating in the labour force falls to only 62% in this age group it seems likely that the decrease in the proportion of unemployed sign language users is a result of capable people giving up looking for work after copious rejections rather than sign language users in this age group having better luck finding work than their younger counterparts. Sign language users giving up on finding work is also a possible explanation of the lower labour force participation rates in the 25-44 year old signing population – though it should also be remembered that trends for sign language users to study tertiary qualifications later in life may also remove a disproportionate number of signers from the labour force for this age bracket. Whatever their causes, it is clear that sign language users continue to have difficulty establishing themselves in the labour force and that improvements in supports for Deaf people to enter the workforce and communicate with hearing colleagues are needed.

4.2.2 Age and occupation

Turning to occupational data, Figure 12 and Tables 6 and 7 show a dramatic shift in occupational categories for both sign language users and member of the general population between the 15-24 and 25-44 age groups. This is presumably is the result of secondary and tertiary students leaving relatively unskilled part-time jobs at the end of their studies to take up their chosen professions, and contrasts with the quite stable proportions of people in each occupational category for the 25-44 and 45-64 age brackets in the general population. Sign language users aged 25-44 are more likely than those aged 45-64 to work as professionals, technicians/ trade workers and community/ personal service workers and less likely to be machinists and labourers, which likely reflects the greater educational opportunities that have been afforded this younger generation. The trend for Deaf people to be over-represented among workers in community and personal services and labouring and under-represented in sales and management roles noted earlier in this report holds across all age groups and if anything is more marked in the younger age groups – perhaps reflecting a trend of Deaf school leavers initially defaulting to what they see as stereotypical Deaf jobs and taking some years to gain the knowledge, skills, confidence and networks to move into jobs that match their actual interests and abilities.

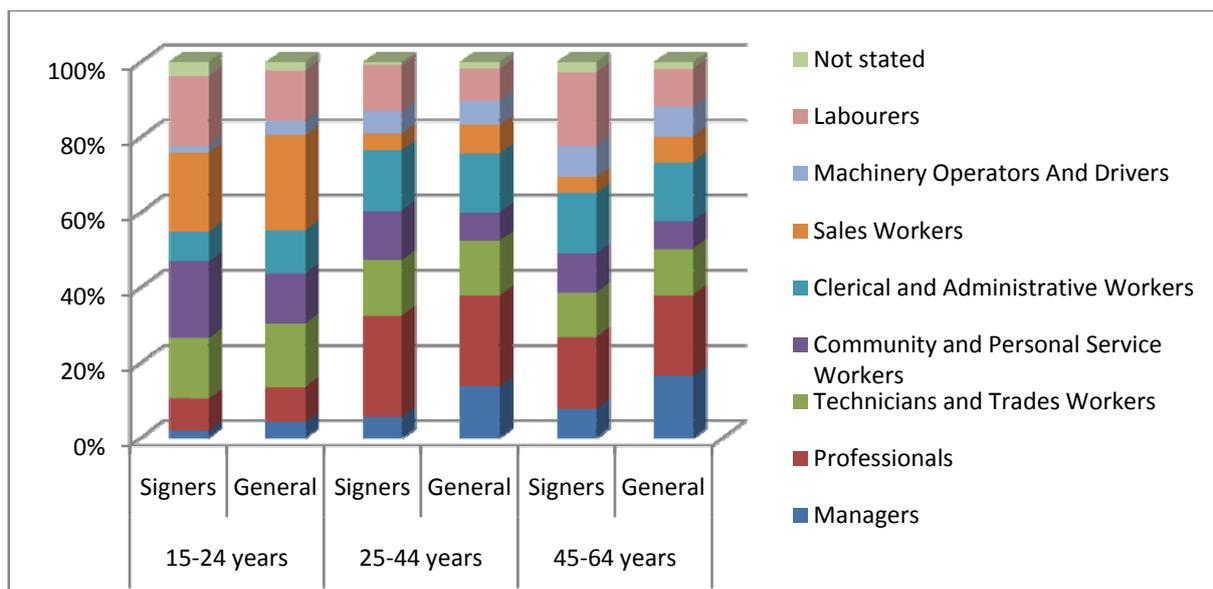


Figure 11 – Occupational category by age for sign language users and the general population, Victoria

Occupation	15 - 24 years	25 - 44 years	45 - 64 years	Average all ages
Managers	2%	6%	8%	6%
Professionals	9%	27%	19%	21%
Technicians and Trades Workers	16%	15%	12%	14%
Community and Personal Service Workers	20%	13%	10%	13%
Clerical and Administrative Workers	8%	16%	16%	14%
Sales Workers	21%	4%	4%	7%
Machinery Operators And Drivers	2%	6%	8%	6%
Labourers	19%	12%	20%	16%
Inadequately described	4%	1%	1%	1%
TOTAL	100%	100%	100%	100%

Table 6 – Occupation by age: sign language users

Occupation	15 - 24 years	25 - 44 years	45 - 64 years	Average all ages
Managers	4%	14%	16%	13%
Professionals	9%	24%	22%	21%
Technicians and Trades Workers	17%	15%	12%	14%
Community and Personal Service Workers	13%	8%	7%	8%
Clerical and Administrative Workers	11%	16%	16%	15%
Sales Workers	25%	8%	7%	10%
Machinery Operators And Drivers	4%	7%	8%	7%
Labourers	13%	8%	10%	10%
Inadequately described	1%	1%	1%	1%
TOTAL	100%	100%	100%	100%

Table 7 – Occupation by age: general population

Figure 12 in effect documents two competing trends: career progression as individual's age and changing career preferences across the generations.

Progression is most clearly seen in the rising number of managers across each successive age group while the decrease in the number of labourers and machinery operators between the 45-65 and 25-44 age groups may be in part because contractions in the manufacturing sector over the past 30 years means there are fewer entry level positions and the sector is not seen as a good source of stable employment these days.

The combined effect of age and hearing status on occupation becomes clearer when occupational categories are grouped together. Figure 13 groups the occupations given in Figure 12 into three broad types: managers and professionals make up the high-ranking white collar professionals, trades, labourers and machinists the blue collar sector and sales, clerical and community sector workers make up the junior white collar (sometimes referred to as the pink collar) sector. For the hearing population, the proportion of people employed in each sector varies by less than 1% between the two age groups, however for the Signing population the proportion of people employed in blue collar roles increases by 6.7 percentage points between the 25-44 and 45-64 age groups, largely at the expense of the white collar manager and professional bracket which falls 5.7 percentage points. This certainly suggests that advances in Deaf education have left those in the 25-44 better equipped to take on professional roles than previous generations, and indeed that younger Deaf people are having at least some success in gaining employment commiserate with their qualifications and experience.

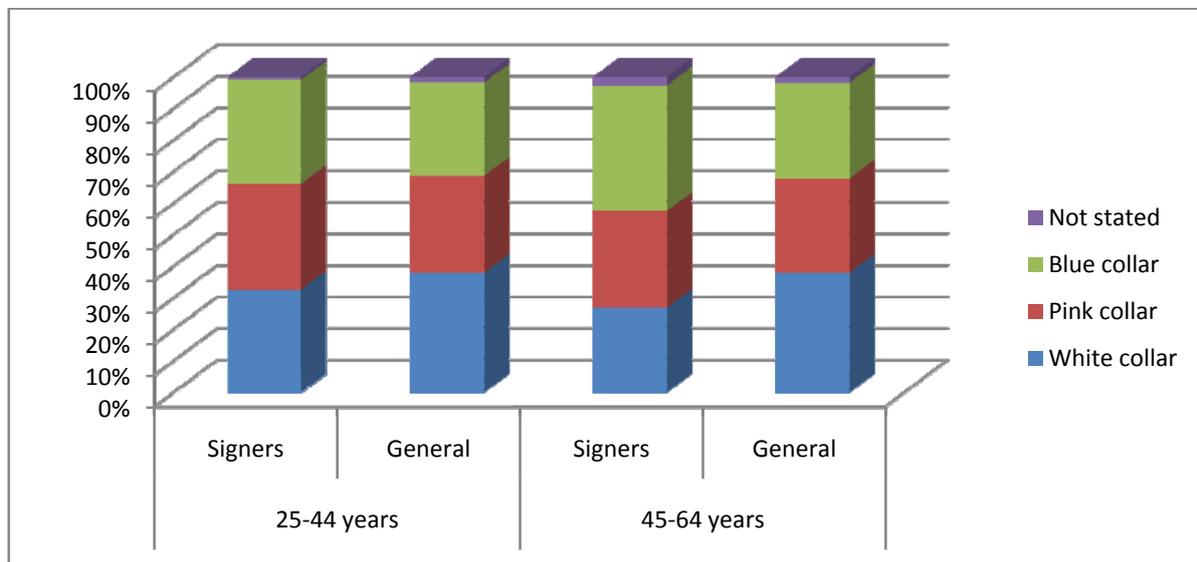


Figure 12 – Occupation class by age for sign language users and the general population, Victoria

Using age-graded data from one census to try to chart career progression for either the signing or general population will always be problematic and as such this report can only hint at trends that require further investigation and longitudinal studies to

better understand the impact of age, gender, education and other factors on the career progression of Deaf adults living in Victoria. The lower average education level of sign language users in the 45-64 age group compared to the 25-44 age group means that career progression is masked by a higher concentration in low-status occupations (such as labouring). However, the small but significant rise in the number of managers (7.6% of employed sign language users aged 45-64 as compared to 5.6% of those aged 25-44) provides evidence that at least some Deaf people are achieving promotions the longer they stay in the workforce. Moreover, this rise has occurred even though the proportion of Deaf people employed in white or pink collar jobs is much lower in the 45-64 age group than in the 25-44 age group. Thus the number of Deaf managers may increase quite substantially as the 25-44 age group ages and gains experience in the professional and paraprofessional roles where many are currently employed.

Some evidence for this type of progression comes from previous studies tracking the career progression of Deaf adults living in the United States. In following up students of colleges with deaf education programs 5 and 15 years after they graduated, Schroedel and Geyer (2000) found that proportion working in clerical roles decreased from 32.8% to 24.1% between the two surveys while the number of professionals rose from 48.9% to 55.9%. Interestingly, the number of labourers, machine operators or craft workers was very similar in both years, suggesting that individuals who begin careers working in these relatively low skill and poorly paying professions have relatively low occupational mobility. Similar conclusions were also drawn by Welsh and Walter (1987) looking at data from students graduating from US Deaf education programs in the 1960, 1970s and early 1980s, albeit with more limited progression among those who commenced their working lives already in professional roles commensurate with their qualification.

4.2.3 Age and income

While it is very a crude measure, another means by which career progression can be charted is by comparing average incomes. Here, however, rising salaries associated with increased seniority are counterbalanced to an extent by decreasing labour force participation in the 45-64 age group. Figure 14 and Tables 8 and 9 shows that in the general population it is actually the 25-44 age group that has the highest proportion of people earning \$800 a week or more – 37.1% or nearly 5 points higher than the proportion in the 45-64 age group. Only a small proportion of sign language users earn \$800 a week or more at any age, but unlike the general population the 45-64 age group does have a very slight edge on the 25-44s in terms of proportion of people in this top income bracket, (22.1% as against 20.4%). Though the difference is less than 1%, the fact that the two groups are broadly comparable in terms of income (there is also less than a 1% difference in the proportion earning less than \$400 a week) in the face of education disparity

and counter-trends in the general population is surprising and thus worthy of further investigation.

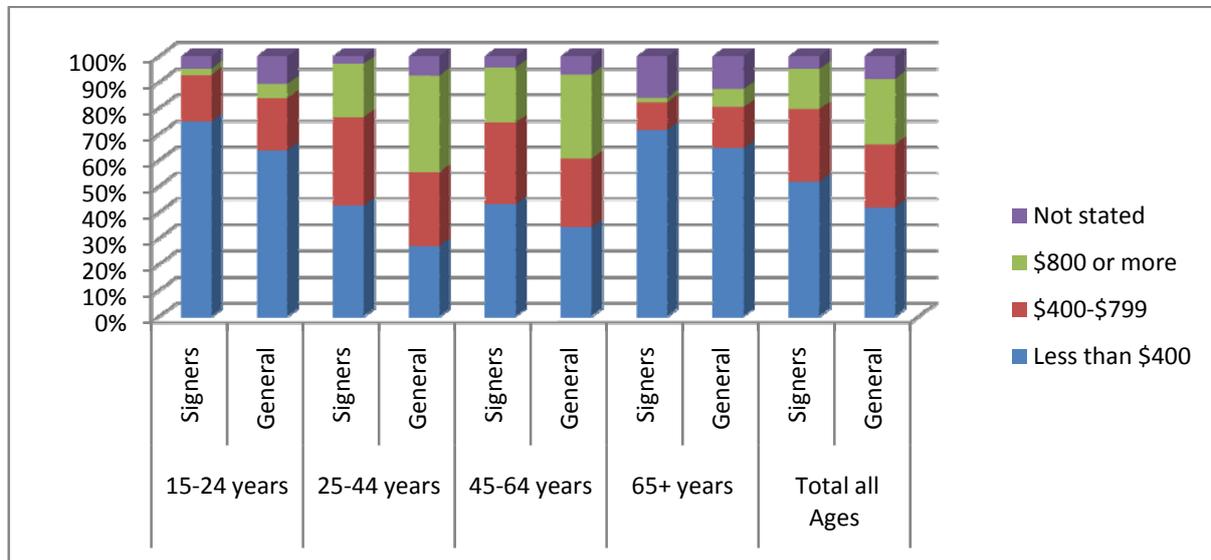


Figure 13 – Individual weekly income (before tax) by age for sign language users and the general population, Victoria

Income	15-24 years	25-44 years	45-64 years	65+ years	Total all Ages
Less than \$400	75%	43%	43%	72%	52%
\$400-\$799	18%	34%	31%	11%	28%
\$800 or more	2%	20%	21%	2%	15%
Not stated	5%	3%	4%	16%	5%
Total	100%	100%	100%	100%	100%

Table 8 – Income by age: sign language users

Income	15-24 years	25-44 years	45-64 years	65+ years	Total all Ages
Less than \$400	64%	27%	34%	65%	42%
\$400-\$799	20%	28%	26%	16%	24%
\$800 or more	5%	37%	32%	7%	25%
Not stated	11%	8%	7%	13%	9%
Total	100%	100%	100%	100%	100%

Table 9 – Income by age: sign language users

Tables 8 and 9 clearly demonstrate that up until the age of 65 the proportion of sign language users earning less than \$400 a week is at least 10 percentage points higher than for the general population. More detailed studies of income discrepancy have shown that such gaps between Deaf and hearing earnings are not simply an artefact of different career pathways, but that even within the same occupational categories Deaf people earn significantly less money (Welsh and MacLeod-Gallinger 1992:193, Winn 2007). Even post retirement age, a slightly higher proportion of

Deaf people live on less than \$400 a week (66.3% as against 62.2%), suggesting a lower proportion of self-funded retirees in the signing population. While income discrepancies between the two groups of retirees are relatively minor at present, they have the potential to become much more pronounced as superannuation becomes an increasingly important source of retirement income in coming years. Given the evidence in this report that Deaf people on average take longer to finish their education and establish themselves in careers, are often paid less than their hearing colleagues and are more likely to be unemployed or not in the labour force, it seems reasonable to presume that many of them will arrive at retirement age with substantially smaller superannuation savings than average members of the general population. Australia's rapidly aging population posts a host of policy challenge and it is difficult to predict how government will react to mitigate potential disadvantage among those who for whatever have not been able to accumulate sufficient retirement savings over their working lives. However, it would be wise for Deafness service providers to factor this issue into their medium to long-term planning and begin thinking about the advocacy and service provision implication of this issue.

5. Comparing data by place of residence

The final major section of this report explores demographic differences between the signing population based in Greater Melbourne and those living in the rest of Victoria. Initially the report intended to also look at differences within three regions of Melbourne (East, South/South-East and North and West) and between those living in regional centres versus rural areas, however differences between these sub-groups were found to be too small to warrant detailed discussion in this report.

Before the data was received, Vicdeaf assumed that sign language users in regional and particularly rural Victoria would have lower education and employment outcomes due to the relative lack of Deaf-specific support services outside of Melbourne. In general this proved correct, however, across all measures except income the differences between sign language users living in Melbourne and in regional Victoria were less than those seen between members of the general population living in Melbourne and in regional Victoria. Victorians living in Melbourne on average enjoy higher levels of educational attainment, employment and income than those in regional areas, and this is seen for both sign language users and members of the general population. However, on the measures explored in the census data used in this report it appears members of the signing population gain less of a benefit from living in Greater Melbourne than members of the general population. The rest of this section of the report explores the relationship between place of residence and signing status on respondents' educational and employment outcomes.

5.1 Educational attainment

The variable of highest year of schooling shows a marked difference in responses from members of the general population living in Melbourne and in regional Victoria. While 49% of Melburnians report having completed Year 12, only 32% of those living in regional Victoria have done so, as shown in Table 10.

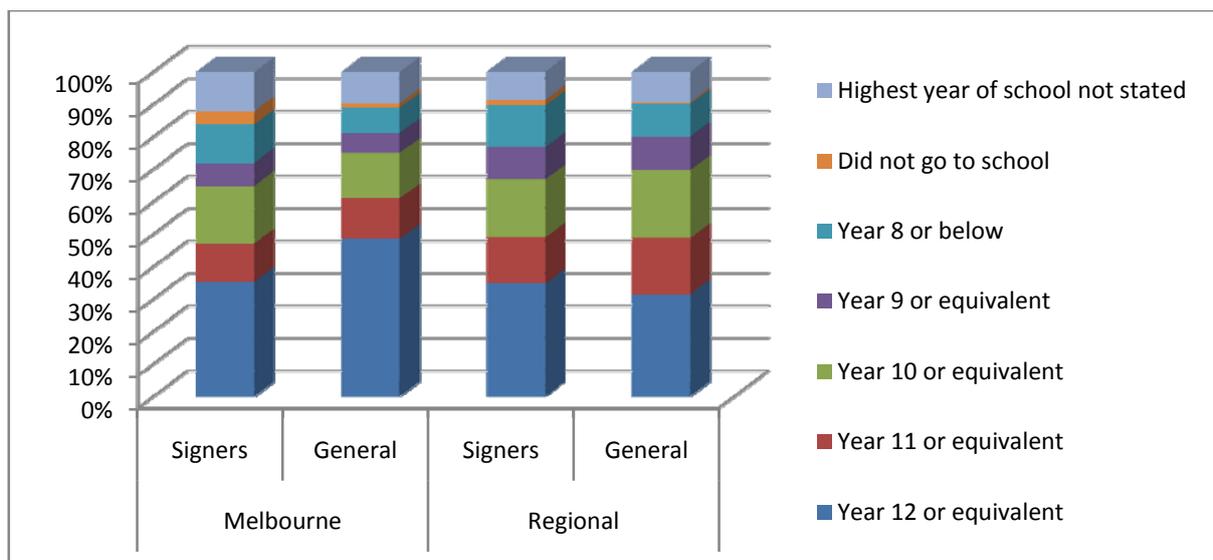


Figure 14 – Highest year of schooling by region for sign language users and the general population, Victoria

Highest year of schooling	Melbourne		Regional	
	Signers	General	Signers	General
Year 12 or equivalent	35%	49%	35%	32%
Year 11 or equivalent	12%	13%	14%	17%
Year 10 or equivalent	18%	14%	18%	21%
Year 9 or equivalent	7%	6%	10%	10%
Year 8 or below	12%	8%	13%	10%
Did not go to school	4%	1%	2%	0%
Highest year of school not stated	12%	10%	9%	9%
TOTAL	100%	100%	100%	100%

Table 10 – Highest year of schooling by region for sign language users and the general population, Victoria

As Funnell (2008) notes, the economic climate and job prospects in small Australian country towns often give students few incentives to stay at school beyond Year 10 and many students consequently choose to enter the workforce at the first available opportunity. The difference between Melbourne and regional Victoria in school completion rates all but disappears for sign language users however, with 35% of respondents in both groups having completed Year 12. Since sign language users have historically had very limited access to upper secondary education, this completion rate of 35% should be regarded as a genuine achievement. Moreover, sign language users living in regional Victoria have already overtaken members of the general regional population in Year 12 completion rates. This finding was unexpected (not least because of the limited number of schools with Deaf Facilities in country area) but may in part be because Deaf students living in country areas have always had the option of attending the Victorian College of the Deaf in

Melbourne, which provides boarding facilities for country students and gives students the opportunity to complete Year 12 through Wesley College. Deaf students living in regional areas may also be more inclined to stay in school (regardless of the quality of support they are receiving) than their hearing peers because of perceived or actual difficulties in finding employment in the tight labour markets of many regional areas.

Figures on highest education attainment in many ways mirror those on highest year of schooling, as shown in Figure 16 and Table 11.

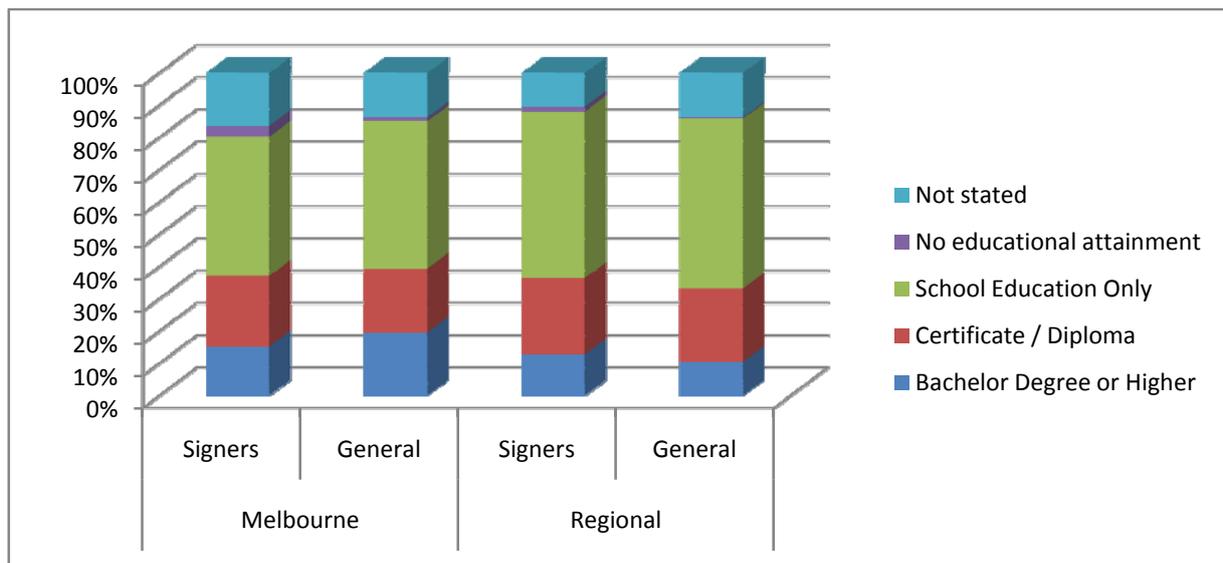


Figure 15 – Highest educational attainment by region for sign language users and the general population, Victoria

Highest educational attainment	Melbourne		Regional	
	Signers	General	Signers	General
Bachelor Degree or Higher	15%	20%	13%	11%
Certificate / Diploma	22%	20%	24%	23%
School Education Only	43%	46%	52%	53%
No educational attainment	3%	1%	1%	0%
Not stated	16%	14%	10%	14%
TOTAL	100%	100%	100%	100%

Table 11 – Highest educational attainment by region for sign language users and the general population, Victoria

Once again, sign language users living in regional areas are more likely to report higher level educational attainment (i.e. have completed a degree, certificate or diploma course) than members of the regional general population. Sign language users living in Melbourne are slightly more likely than those from regional Victoria to hold a Bachelors Degree or higher (15% as against 13%) but this difference is

dwarfed by the 9 percentage point gap in Bachelors degree attainment between Melbourne and regional members of the general population (20% and 11% respectively). Although not shown in Table 11, there is also a strong age difference in the signing population holding higher qualifications. In Melbourne 36% of sign language users holding Bachelors degrees or higher are aged over 45, as are 37% of those holding certificate or diploma level qualifications. In regional Victoria by contrast, only 22% of sign language users holding Bachelors degrees or higher are aged over 45, and 24% of those holding certificate or diploma level qualifications⁸. This suggests that sign language users living in country areas have historically had greater difficulty accessing higher education than those in metropolitan Melbourne and further research is required to determine the extent to which these difficulties persist.

⁸ For the general Melbourne population 36% of Bachelor degree holders are aged over 45, as are 45% of those with certificate or diploma level qualifications. In regional Victoria these figures are 49% and 50% respectively.

5.2 Employment outcomes

Turning to data on employment shows that sign language users experience markedly higher rates of unemployment than those residing in Greater Melbourne (10.9% and 7.7% respectively), whereas place of residents has no clear effect on unemployment rates for members of the general population (5.7% in regional Victoria as against 5.4% in Greater Melbourne). Unemployment is particularly high for sign language users aged 15-24 living in regional areas – running at 19.6% when the rate for their age mates in Melbourne and members of the general population in both areas is around 11%. It thus appears that young sign language users have great difficulty establishing themselves in the local labour market once they leave school or other formal education, and that greater support services are needed to improve the training options and education-work transition for these clients. Figure 17 outlines the differences in unemployment rates and labour force participation found between the regions:

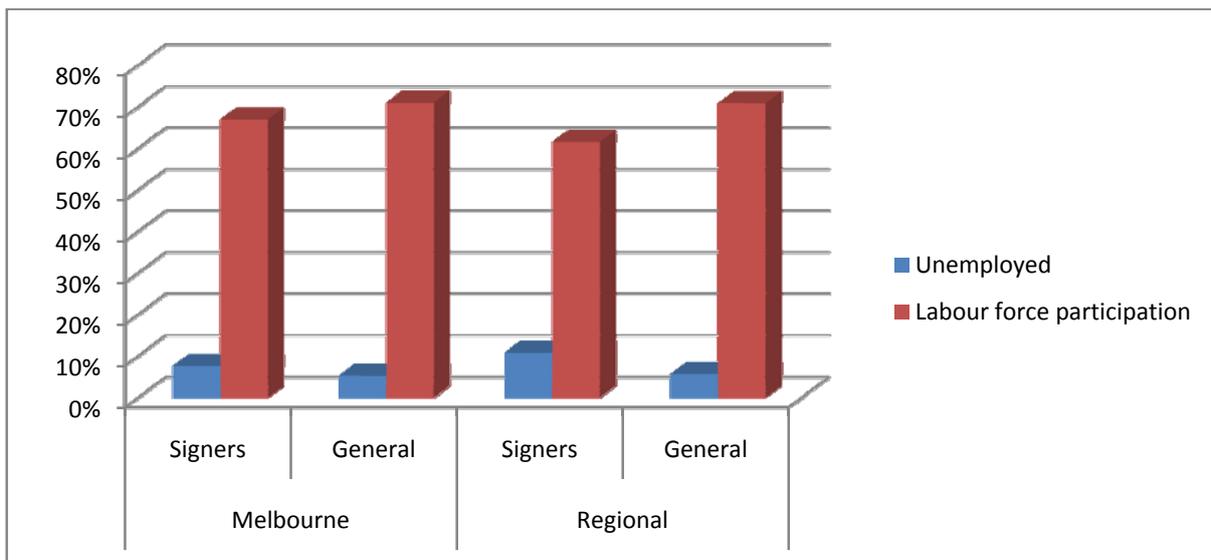


Figure 16 – Labour force participation rates by region for sign language users and the general population, Victoria

As figure 17 illustrates, sign language users living in regional Victoria are doubly-disadvantaged in the labour market: they show both the highest rates of unemployment and lowest labour force participation of all groups measured. Labour force participation for regional sign language users peaks at 69% in the 25-44 age group but drops as low as 54% for the 45-64 age group. Sign language users in Melbourne have similar participation rates in the 25-44 age group, but importantly retain a higher participation rate (65%) in the 45-64 age group, while in the

general population the rates in both regions are around 78% in the 25-44 age group and 68% in the 45-64 age group. Regional sign language users are withdrawing from the labour force in disproportionately high numbers, and given that they show unemployment rates about 11% in the under 45 age group, and of 0% for the over 45 group, it seems highly likely that many Deaf people in regional areas give up looking for work if they have not found ongoing employment by the age of 45. This is a huge waste of potential in Victoria's current skills shortage, with census records showing up to 40 older sign language users living in regional Victoria may be keen to work if they could be supported to enter the workforce.

Data on type of occupation shows that region of residence does not have a consistent effect on the occupations undertaken by sign language users and members of the general population. In the general population a higher proportion of workers are employed as managers, tradesmen or labourers in regional areas while (predictably) professionals and clerical workers make up a greater proportion of the labour force in Melbourne. For the signing population the only marked difference in occupations by region is in the proportions employed as tradesmen (15% in Melbourne but only 10% in regional Victoria) and community workers (12% in Melbourne but only 18% in regional Victoria). Figure 18 and Table 12 provide a more detailed breakdown of regional differences in occupations.

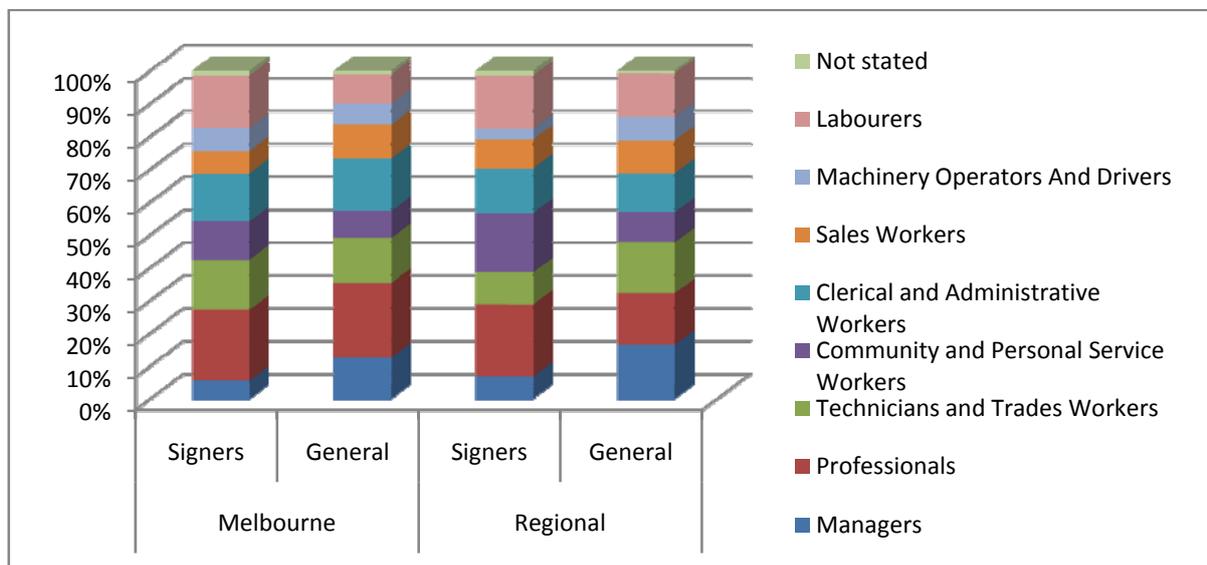


Figure 17 – Occupational classes by region, for sign language users and the general population, Victoria

Occupation	Melbourne		Regional	
	Signers	General	Signers	General
Managers	5%	12%	7%	16%
Professionals	21%	23%	22%	16%
Technicians and Trades Workers	15%	14%	10%	15%
Community and Personal Service Workers	12%	8%	18%	9%
Clerical and Administrative Workers	15%	16%	14%	12%
Sales Workers	7%	10%	9%	10%
Machinery Operators And Drivers	7%	6%	3%	7%
Labourers	16%	9%	16%	13%
Not stated	1%	1%	1%	1%
TOTAL	100%	100%	100%	100%

Table 12 – Occupational classes by region, for sign language users and the general population, Victoria

The low number of sign language users in regional areas employed in trades links back to concerns raised earlier in this report about the poor supports for Deaf students to enter further education or traineeships in regional areas. It can be seen as evidence that this is having a real impact on their ability to enter trade professions when compared to Deaf people living in Greater Melbourne. Similarly, the high proportion of sign language users in regional areas employed as community workers suggests that this working in the disability sector is one of the few career paths open to Deaf people living in regional Victoria. On a more positive note, however, sign language users living in regional areas are more likely than both members of the general regional population and members of the Greater Melbourne signing population to work in professional roles, perhaps reflecting the growing proportion of regional sign language users who hold tertiary qualifications.

Unlike occupations, there is a consistent regional effect on incomes, with the proportion of people earning \$800+ per week declining by 6 percentage points between Melbourne and regional Victoria for both sign language users and members of the general population. Figure 19 and Table 13 outline this effect in more detail.

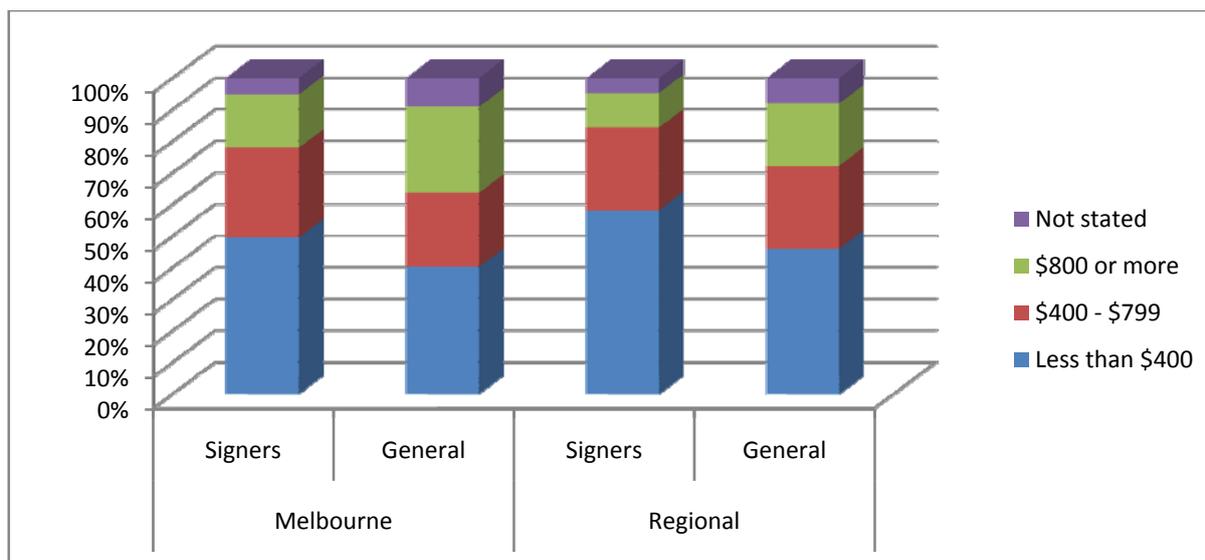


Figure 18 – Individual weekly income (before tax) by region, for sign language users and the general population, Victoria

	Melbourne		Regional	
	Signers	General	Signers	General
Less than \$400	50%	40%	58%	46%
\$400 - \$799	28%	23%	26%	26%
\$800 or more	17%	27%	11%	20%
Not stated	5%	9%	5%	8%
TOTAL	100%	100%	100%	100%

Table 13 – Individual weekly income (before tax) by region, for sign language users and the general population, Victoria

As with employment levels, sign language users in regional areas have the worse outcomes, which in this case sees 58% earning \$400 a week or less. In part this can be explained by the low labour force participation rates discussed at the start of this subsection. However, it is also noteworthy notable that 28% of regional sign language users who are employed declared an income of \$400 a week or less, as against 20% of those in Greater Melbourne and 19% of the general population. Most of the difference in earnings between employed sign language users in Melbourne and regional Victoria here is due to the disproportionately high number of 45-64 year olds earning less than \$400 in regional areas – 25% as against 15% in Greater Melbourne.

When taken together, the figures presented in this section show that sign language users in regional Victoria experience worse educational and employment outcomes than both sign language users living in Greater Melbourne and the general population in regional areas. For no group is this more true than those aged 45-64, who show markedly lower rates of tertiary education and labour force participation

and are significantly more likely to have low earnings when they are employed than their age mates than their age mates in the other three groups. There is a strong case for providing increased support resources to this vulnerable group of older sign languages users living in regional Victoria, yet it is also heartening to note from this section that many of the disparities between sign language users in regional Victoria and Greater Melbourne are disappearing in the younger age groups. This suggests that much of the difference seen today stems from differences in the local economies and historical inequalities and not present-day systemic failure to address the needs of Deaf people living in regional Victoria.

6. Conclusion

The findings presented in this report give the first detailed snapshot of the demographic characteristics of the Victorian signing population. Census data shows that sign language users are on average younger than members of the general population, with the largest number of sign language users found in the 30-39 and 40-49 age groups. Contrary to predictions that the use of sign language is declining among deaf children and adolescents, the report found over 600 Victorians under 20, or around 5 in 10,000 young Victorians, use a sign language at home. However, it is unknown how many of these signers are CODAs (Children of Deaf Adults) and these figures may mask a more general decline in sign language use among children and teens who are deaf or hard of hearing. Victorian Sign language users are markedly more likely to be Australian born than members of the general population (88% as against 69%), a finding that can be attributed in part to the difficulties deaf people have migrating to Australia and accessing Auslan classes if they arrive as adults.

The principle area of interest for this report was data on education attainment and employment outcomes for sign language users as compared to the general population. Here it is clear that sign language users in Victoria have made substantial gains in education and employment in recent years, but still lag behind members of the general population on a number of key measures. The greatest gains have been made in the area of education, where the proportion of sign language users holding Bachelors degrees or higher approaches that seen in the general population (15% and 17% respectively). Sign language users are also more likely than members of the general population to hold a Certificate or Diploma level qualification (22% as against 21%), albeit with the caveat that data from Clark (2007b) suggests deaf and hard of hearing VET students are more likely to study lower level VET qualifications than members of the general population. Thus while sign language users are accessing higher education in proportions broadly similar to those seen in the general population, the question remains of whether they are leaving those institutions with qualifications at the same level as those commonly seen in the general population. The report found that the gap in Year 12 completion rates between sign language users and the general population was closing, but even in the youngest age group (15-24) has not disappeared completely (46% completion as against 50% in the general population). Clearly there is still a need to improve education and support services for Deaf students in Victoria to ensure true equality of opportunity.

Employment data also showed some encouraging results, but overall inequalities remained more marked than in the area of education. At the time of the 2006 census, 64% of sign language users participated in the Victorian labour force, only

slightly below the 67% participation rate seen in the general population. Sign language users were 50% more likely to be unemployed than members of the general population, however, (7.8% and 4.9% unemployment respectively) while analysis of figures on individual weekly income suggests that of those sign language users who are employed, a disproportionately high number are not in fact in full-time work. Sign language users were found to be employed in a wide cross-section of industries and are just as likely to work as a professional, tradesperson or administrative worker than members of the general population. They are however more 50% than as likely to be labourers or community sector workers than members of the general population, and the proportion of sign language users who are managers (5.3%) is less than half of that seen in the general population (13.5%). All of this suggests that sign language users still face barriers accessing higher-status occupations and that advances in education among the signing population are not necessarily being converted into occupational parity, and particularly income parity.

The report explored difference in outcomes within the signing population based on age group and place of residence (Greater Melbourne or regional Victoria). Age group data paints a clear picture of education and employment outcomes improving with each successive generation for the groups 65+, 45-64 and 25-44, with the current crop of 15-24 year olds also on target to surpass the 25-44 age group once the former have completed their education and established themselves in the workforce. This is an extremely encouraging trend and provides clear evidence that the many reforms undertaken since the 1990s to remove discrimination and improve access have had strong positive results. The report also hints at a strong interest from older Deaf Victorians in going back to study and gaining qualifications that were unavailable to them in their youth, however concerns remain about the degree to which these newly qualified sign language users are able to translate their educational qualifications into the economic capital of a better job and larger or more secure income. Unemployment and underemployment remains a concern for Deaf people across the lifespan, and the report recommends that greater investments be made in tackling this issue, with the ultimate aim of reducing the welfare burden on the Australian taxpayer and wastage of human resources occasioned by the current situation.

Location was found to have a small impact on sign language users' education and employment outcomes, however differences between the metro and regional signing population were much lower than those seen between the metro and regional general population. Particularly in the area of education, regional sign language users seemed to have broadly equal success in gaining qualifications to those in Melbourne, though of course these figures say nothing about the ease of accessing courses or the quality of support services available in different areas of

the state. Sign language users living in regional Victoria were shown to have greater difficulties finding work (particularly fulltime work) than those in Melbourne, but those in work reported similar occupations to those living in Melbourne.

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