

NATIONAL VOCATIONAL EDUCATION  
AND TRAINING RESEARCH PROGRAM

## RESEARCH REPORT

# Barriers and facilitators affecting course completions by apprentices and trainees with disabilities

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CURTIN UNIVERSITY



Australian Government

Department of Industry, Innovation  
Science, Research and Tertiary Education



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This document should be attributed as Cocks, E & Thoresen, SH 2013, *Barriers and facilitators affecting course completions by apprentices and trainees with disabilities*, NCVER, Adelaide.

ISBN 978 1 922056 43 6

TD/TNC 110.31

COVER IMAGE: GETTY IMAGES/THINKSTOCK

Published by NCVER, ABN 87 007 967 311

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# About the research

## *Barriers and facilitators affecting course completions by apprentices and trainees with disabilities*

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Recent policies to address equity issues have encouraged people with disabilities to participate in vocational education and training (VET). While participation is worthwhile, it is completion that typically brings the greatest benefits.

This is the first report from a program of research investigating the financial and social outcomes for people with disabilities who have completed an apprenticeship or traineeship. This research is based on a three-year longitudinal survey of graduates with disabilities. In this first report, the emphasis is on the students' perspectives on the barriers to and facilitators of course completion. Not surprisingly, graduates with a disability were more likely to report barriers to completion of their apprenticeship or traineeship compared with those without.

## Key messages

- The most commonly reported barriers, across both the graduates with disabilities and those without, were related to a lack of resources. Common challenges cited were poor training wages; the cost of equipment or tools required for training; and lack of time, often due to family commitments. For some in the disability group, these barriers were compounded by their health conditions.
- Support was the most important factor facilitating course completion among the research participants with disabilities. This support was often provided by individuals from disability employment service providers, group training organisations, TAFE (technical and further education) institutes, and the employer. Informal support – that from friends, family and co-workers – was also important, particularly when formal supports were inadequate.

Only a small proportion of the research participants report that they have been supported jointly by both a disability employment service provider and a training organisation. Given the previous research showing the benefits of joint support, the authors advocate the formation of such partnerships.

Tom Karmel  
Managing Director, NCVET

# Acknowledgments

The authors acknowledge the following significant contributors to this research project:

- the other consortium members: Adjunct Associate Professor Dr Greg Lewis, Executive Director, EDGE Employment Solutions; Mr Jeff Priday, National Projects Manager, Group Training Australia; and Dr Ken Baker, Chief Executive, National Disability Services
- Sunila Peterson, who assisted with qualitative data analysis
- the staff, managers and executives of the organisations who assisted the researchers to identify and contact potential participants: disability employment services, group training organisations, registered training organisations and state training authorities
- everyone else who assisted the research, particularly the participants, their family and supporters who contributed to the research, volunteered information to the researchers and assisted participants who required support to participate in the research.

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# Executive summary

People with disabilities can experience social and economic exclusion (Australian Government 2009; Department of Families, Housing, Community Services and Indigenous Affairs 2011). Moreover there is low participation in the labour market by people with disabilities, despite recognition of the role of employment in reducing social exclusion (ABS 2009, 2010b, 2011; Australian Government 2009; OECD 2003, 2007, 2010, 2012). Apprenticeships and traineeships have been shown to be beneficial pathways for people with disabilities, particularly for people with intellectual and learning disabilities (Lewis, Thoresen & Cocks 2011a, 2011b), for obtaining qualifications and employment as they combine training and education with practical work. Although the outcomes among apprenticeship and traineeship graduates with disabilities are similar to graduates without disabilities (Ball & John 2005), people with disabilities are less likely to undertake and complete apprenticeships and traineeships than their peers without disabilities (ANTA 2000; Bagshaw & Fowler; Cavallaro et al 2005; Griffin & Beddie 2011; NCVET 2011c; National VET Equity Advisory Council 2011). This research report identifies the barriers to and facilitators of course completion, as reported by apprenticeship and traineeship graduates.

The report is drawn from the first-year survey of a three-year longitudinal study into the social and economic outcomes of apprenticeship and traineeship graduates with disabilities. A total of 404 graduates with disabilities completed the survey. Face-to-face interviews were also carried out with 30 volunteers from the survey participants. A smaller group of 85 apprenticeship and traineeship graduates without disabilities was also surveyed as a comparison group. Participants were recruited in two stages. Apprentices and trainees with disabilities who graduated in 2009–11 were recruited during the second half of 2011 through disability employment services (DES), group training organisations (GTOs), registered training organisations (RTOs) such as TAFE institutes, and state training authorities. Graduates without disabilities were recruited for the comparison group in early 2012 through group training organisations. The two-staged participant recruitment approach enabled the researchers to stratify potential participants in the comparison group according to gender, age, and apprenticeship or traineeship completion to the proportions among participants in the disability group. Satisfactory matches across these variables were reached between the two groups.

The research participants were not entirely representative of the broader population of all apprenticeship and traineeship graduates, which limits how broadly the findings of this research can be generalised. There is a significant underrepresentation of participants from Victoria in the cohort of research participants due to a bias in the recruitment strategy. The proportion of graduates with disabilities declaring an intellectual or learning disability among research participants is also higher than the proportion reported for all vocational education and training (VET) graduates. Despite the survey's limitations, this is one of the largest cohort studies of its kind and provides valuable insight into the barriers to and facilitators of course completions as reported by participants.

The survey participants were asked to specify three barriers to and three facilitators of course completion, and responses were coded thematically across the disability and comparison groups. Five major themes were identified across the reported barriers and facilitators: resources; disability, health, and injury; employment factors; training and educational factors; and motivations, experiences and networks. Although the proportion of participants specifying no barriers for course completion was low, the proportion of graduates without disabilities reporting no barriers was double that of graduates with disabilities; 17.1% compared with 8.9% respectively.

The lack of resources was the most commonly cited barrier by participants in the comparison group, reported by almost two-thirds of graduates without disabilities compared with just under half of participants in the comparison group. Low training wages was specified as a major challenge.

Barriers related to disability, health and injury were mainly reported by participants in the disability group, although a small proportion of participants in the comparison group also had challenges with course completion due to injury. Common challenges among the graduates with disabilities included poor literacy and numeracy; barriers due to the built environment; lack of assistive technology; pain, discomfort, and health problems; and sensory and communication barriers. The facilitators mitigating the impact of disability were specific to employment as well as training and educational factors and are therefore encompassed by those themes.

A larger proportion of participants in the disability group (31.7%) reported barriers in the 'employment factors' theme than did participants in the comparison group (17.1%). Here graduates with disabilities cited work demands most frequently as a barrier, while graduates without disabilities specified the loss of employment opportunities as the most common barrier. In addition, poor experiences at work, often characterised as harassment or bullying, were reported as a barrier. In total, 10.4% of all apprenticeship and traineeship graduates with disabilities reported experiences which could be interpreted as harassment or bullying compared with 5.9% of graduates without disabilities. About one-third of first year apprentices in two Victorian studies reported being bullied, which can negatively affect the attrition of apprentices (du Plessis & Corney 2011). While the proportion of participants in the current study reporting harassment and bullying while undertaking their training was significantly lower than that reported in the Victorian studies, it should be noted that participants were not specifically asked whether they had experienced harassment or bullying during their training.

Research participants also identified significant facilitators linked to employment factors. More than half of the graduates with disabilities and more than two-thirds of participants without disabilities identified facilitators in the 'employment factors' theme. These included supportive managers and colleagues, the provision of assistive technology and other supports for graduates with disabilities, and motivating and rewarding outcomes from achievement. There were additional supports for the apprenticeship and traineeship graduates with disabilities across employment factors, specifically disability employment services support, which one-third of participants in the disability group reported receiving. Although previous research had identified the positive role that collaborative support from both disability employment services and group training organisations played in successful course completions for apprentices and trainees with disabilities (Lewis, Thoresen & Cocks 2011a), only a very small proportion of participants (5.2%) reported being supported by both disability employment services and a group training organisation.

Just under one-third of participants in both the disability and comparison groups reported barriers associated with training and education factors. These included limited access to lecturers and tutors, course content factors and issues associated with numeracy and literacy. The high proportion of research participants who specified an intellectual or learning disability meant a high likelihood of numeracy and literacy barriers. The availability of tutoring support was identified as a major facilitator of course completion by participants in the disability group. Additional challenges included discrepancies between content and the approaches emphasised in the workplace and those emphasised in the training and educational environment. The proportion of participants reporting facilitators related to training and educational factors was higher among participants in the disability

group (50.8% compared with 41.8% respectively), as was the proportion of participants specifying receiving support from TAFE (41.5% compared with 31.0%).

Individuals, in both formal (employers, support workers from agencies such as disability employment services, group training organisations and registered training organisations) and informal contexts (family members, friends and colleagues) played significant facilitating roles in the graduation of apprentices and trainees with disabilities. Over 70% of graduates with disabilities identified positive motivations, experiences and networks as facilitating their course completions compared with just below 60% for the comparison group.

The barriers and facilitators reported by research participants suggested that there are a number of areas that can be addressed. Providing additional support for employers may enhance outcomes for apprentices and trainees with disabilities. Disability employment services provide on-the-job support for workers with disabilities, including apprentices and trainees, and can also assist employers to identify the forms of supports and adjustments that will benefit apprentices and trainees with disabilities. This is particularly important for apprentices and trainees with complex disabilities (such as multiple disabilities).

The infrequency of support for graduates with disabilities from both disability employment services and a group training organisation suggested that increased collaboration within the sector may be warranted. The establishment of formal partnerships between disability employment services and training organisations has the potential to improve outcomes for apprentices and trainees with disabilities, as these organisations have complementary expertise. The National VET Equity Advisory Council (2011) has proposed that registered training organisations should provide 'holistic case management' to support people from equity groups to undertake and complete VET. There are clear benefits to be realised from increasing the networks of support for apprentices and trainees with disabilities across stakeholder groups and for these efforts to be well coordinated.

The role of individuals in formal or informal support for participants in both the disability and comparison groups in facilitating course completions suggested that social capital or personal networks played a major facilitating role. It was clear that the support of family, friends and co-workers was critical for graduation for a large proportion of the apprentices and trainees with disabilities participating in this study. Further investigation into the social and economic outcomes, as well as their interrelationship, will take place over the next waves of the study.

# Introduction

This research report investigates the facilitators to and barriers of course completions experienced by a group of apprenticeship and traineeship graduates with disabilities and a comparison group of graduates without disabilities. These have been elicited from the first year of a three-year longitudinal study into the social and economic outcomes for apprenticeship and traineeship graduates with disabilities. Work-based training, such as apprenticeships and traineeships, has been identified as a useful employment pathway for people with disabilities. This includes people with intellectual and learning disabilities who may have difficulties in transferring skills obtained in one setting to another, such as from the classroom to the workplace (Lewis, Thoresen & Cocks 2011a, 2011b). Apprenticeship and traineeship training contracts usually include a work contract with an employer/host employer. Prior work experience is advantageous for obtaining work. Combined with the nationally recognised qualifications apprenticeship and traineeship graduates obtain, this pathway addresses the concerns employers may have regarding employing people with disabilities by providing a formal qualification and a track record of prior employment.

People with disabilities are particularly disadvantaged, with low workforce participation and high unemployment rates (ABS 2009; Australian Institute of Health and Welfare 2009; OECD 2003, 2007, 2010, 2012; Productivity Commission 2011); low participation and completion rates in VET and apprenticeships and traineeships (ANTA 2000; Ball 2004; Ball & John 2005; Bagshaw & Fowler 2008; NCVET 2011; Cavallaro et al. 2005; Griffin & Beddie 2011; Lewis, Thoresen & Cocks 2011a, 2011b; NCVET 2011c); as well as low school retention rates (ABS 2010b). Employment is one important counter to social exclusion (Australian Government 2009; Department of Families, Housing, Community Services and Indigenous Affairs 2011). For people with disabilities, having a normal job improves quality of life, provides income and fosters independence, self-esteem, social connections and wellbeing (Corbiere & Lecomte 2009; Eggleton et al. 1999; Department of Families, Housing, Community Services and Indigenous Affairs 2011; Jiranek & Kirby 1990; Kober & Eggleton 2005).

Apprenticeships and traineeships provide strong and particularly appropriate pathways to employment for adults with disabilities. For younger people with disabilities, apprenticeships and traineeships can be important in the challenging transition from school to adult life. Understanding these pathways and the barriers and facilitators along the way is essential to improving outcomes. Addressing the barriers and fostering facilitators for completions in apprenticeships and traineeships for people with disabilities can increase completion rates as well as provide the impetus for their increased participation.

This research report describes the barriers to and facilitators of course completion by 404 apprenticeship and traineeship graduates with disabilities and a comparison group of 85 graduates without disabilities. Data are drawn from the first year of a three-year study into the social and economic outcomes for graduates with disabilities. The study incorporates a wide range of outcomes.

# Background

People with disabilities are significantly underrepresented in VET generally, and specifically in apprenticeships and traineeships. While 14.8% of working-age Australians (aged 15–64) have disabilities (ABS 2010b), only 6.1% of VET students self-identified as having disabilities in 2010 and only 1.4% of apprentices and trainees in 2010 identified as having a disability (NCVER 2011c). In addition, students with disabilities are less likely to graduate from VET and apprenticeships and traineeships (NCVER 2011c).

Increased participation in VET by people with disabilities will benefit individuals through increased economic participation and has the potential to improve the gross domestic product of the country (National VET Equity Advisory Council 2011). VET has the potential to facilitate the transition of people with disabilities ‘from a life of social exclusion to the experience that most people accept as the norm, but few people with a disability encounter, of social inclusion’ (Bagshaw & Fowler 2008, p.13). However, VET graduates with disabilities are less likely to be employed than their peers without disabilities (NCVER 2011b). This may reflect the fact that many people with disabilities undertaking VET engage in lower-level qualifications, which provide lower prospects of post-training employment (Cocks & Harvey 2008; Griffin & Beddie 2011; National VET Equity Advisory Council 2011).

A disproportionately large segment of VET students with disabilities complete courses at certificate I or II level: 43.3% compared with 26.7% among graduates without disabilities. A proportion of the lower certificate level VET courses that people with disabilities undertake are enabling courses (ANTA 2000; Cavallaro et al. 2005; Lewis, Thoresen & Cocks 2011a; National VET Equity Advisory Council 2011), which may contribute to the poorer employment outcomes for VET graduates with disabilities compared with students without disabilities. It may also reflect an emphasis on ‘workplace readiness’ (Cocks & Harvey 2008) compared with the ‘place-then-train’ model (Lewis, Thoresen & Cocks 2011a). The workplace readiness, or readiness model, implies that people with disabilities have to prove their ability, or readiness, for employment. This may include proven competency and productivity within the sheltered workshop environment (or Australian Disability Enterprises as they are currently labelled). The readiness model may include many small sequential levels of pre-qualifications such as pre-VET before lower certificate level VET, before higher certificate VET. By comparison, the place-then-train approach emphasises matching a job to the interests of the person with disabilities. Intensive on-the-job training and support are provided. Identifying an appropriate employer is crucial for this model.

An advantage of the place-then-train model is the work-based training approach. Apprenticeships and traineeships are also usually work-based. For people with disabilities, particularly intellectual and learning disabilities, vocational development within the workplace is beneficial, as there is less need to generalise skills obtained in one setting (such as the education or training setting) to another (such as the workplace). For many, exposure to the workforce as an apprentice or trainee is intrinsically valuable and arguably provides both a means and an end to sustainable employment (Lewis, Thoresen & Cocks 2011b). Ball and John (2005) found apprenticeship and traineeship graduates with disabilities are as likely to be employed as their peers without disabilities.

A range of complexities in estimating the completion rates of apprentices and trainees confronts researchers. Delays are experienced in obtaining information on completion rates for students commencing courses within a specific school year, particularly given the varying course durations.

There are also difficulties in ascertaining the percentage of completed training contracts because if an apprentice or trainee changes employer, the contract is coded as incomplete. Change of employer is more common in certain industries, with differences between trade and non-trade courses especially notable (Bednarz 2012). Contract completion rates for all apprenticeship and traineeship contracts from 2004 to 2006 averaged just over 50%, with completion rates for following cohorts estimated to increase (NCVER 2011a). The researchers have not been able to identify recent contract completion rates for apprentices and trainees according to disability status. Estimates from the 1999 cohort suggested a 45.9% completion rate for apprentices and trainees with disabilities compared with 51.4% for apprentices and trainee without disabilities (Ball & John 2005). A persistent lower completion trend is evident by reviewing the proportion of apprentices and trainees who complete their courses compared with new commencements for apprentices and trainees with and without disabilities (NCVER 2011c). The majority of studies identified lower completion rates in both VET and apprenticeships and traineeships for people with disabilities (ANTA 2000; Ball 2004; Ball & John 2005; Bagshaw & Fowler 2008; Cavallaro et al. 2005; Griffin & Beddie 2011; Lewis, Thoresen & Cocks 2011a, 2011b; NCVER 2011c). However, a recent study using the Household, Income and Labour Dynamics in Australia (HILDA) Survey concluded that there were no significant differences in participation or completion rates in VET for people with disabilities (Polidano & Mavromaras 2010), although the timing of disability onset, the severity of disability and the support conditions did have an effect. Further investigation into these findings from the HILDA Survey may be warranted.

While there are clear benefits from completing an apprenticeship or traineeship, these vary substantially. A review of wages during the last week of training compared with post-apprenticeship wages in trade occupations in 2010 identified an increase of \$15 900 per annum. In non-trade occupations, the increase was only \$5200. There were clear differences between courses, including a substantial decrease of \$4000–\$5000 for sales workers (Karmel & Mlotkowski 2010). It is therefore important to identify the benefits of apprenticeship and traineeship completions for people with disabilities. A matched pairs comparative analysis reviewed outcomes among apprenticeship and traineeship graduates, non-completers and registrants who never commenced an apprenticeship or traineeship within the same disability employment service (Lewis, Thoresen & Cocks 2011b). Better post-training outcomes were documented among apprenticeship and traineeship completers as well as apprenticeship non-completers compared with their matched pairs. Outcome measures included the percentage of their time registered with the disability employment services in paid employment, wages and hours worked. The outcomes for the trainees who did not complete their courses were not statistically significantly different from their matched pairs. While the study did not find outcomes to match those of apprentices and trainees without disabilities, it was clear that course completion, as well as participation in an apprenticeship without completing, was an equalising factor.

There is increasing evidence of successful strategies to support people with disabilities to undertake and complete apprenticeships and traineeships. Emphasis is placed on providing sufficient and appropriate support to adjust the inhibiting structures in the physical and social environment. Strategies may involve forming partnerships between disability employment services, which specialise in providing on-the-job support for workers with disabilities, and group training organisations, which specialise in employing apprentices and trainees through host employers (Lewis, Thoresen & Cocks 2011a).

Pathways to apprenticeships and traineeships are of particular importance for young people with disabilities in the transition from school to adult life. These pathways rely heavily on the interface between key stakeholders, including schools, employers, specialist employment agencies, VET providers and the young people themselves and their families. There is a significant challenge in

supporting families to make the decision to encourage their son or daughter towards a vocationally oriented pathway rather than choosing the more conservative option of alternatives to employment. The alternatives pathway may deny the young person vocational possibilities and lead to a lifelong reliance on the disability support pension or other government allowances (Cocks & Harvey 2009).

# Methodology

This research report presents findings related to barriers to and facilitators of course completions among apprenticeship and traineeship graduates with disabilities and is the first report from a three-year longitudinal study into the social and economic outcomes of apprenticeship and traineeship graduates with disabilities. To contextualise the findings, a smaller group of graduates without a disability has also been included. This report relies on research participants' responses from the first year of the study. The research project was granted ethics approval from Curtin University Human Research Ethics Committee in March 2011.

## Participants and information gathering

A postal survey was administered to apprenticeship and traineeship graduates who self-identified as having a disability and a smaller comparison group of graduates without a disability. A total of 2860 surveys were disseminated. People choosing to participate in the research returned the completed survey by mail. A total of 502 individuals returned a completed survey to the researchers. Participants in the disability group had to meet two inclusion criteria: having self-identified disabilities and having completed an apprenticeship or a traineeship between 2009 and 2011. Participants in the comparison group had to meet the criteria of completing their apprenticeship or traineeship between 2009 and 2011. Thirteen survey participants were deemed ineligible and were subsequently excluded. Of the 489 survey participants included, 404 individuals were classified in the disability group and 85 reported no disability and were classified in the comparison group. Face-to-face interviews with a small sub-sample of 30 survey participants with disabilities were also carried out. These provided deeper consideration of some of the issues and a significant qualitative dimension to the study.

Three recruitment sources were engaged. First, all disability employment services and group training organisations were approached through newsletters and emails and a conference presentation at the National Disability Services 2011 Employment Forum to identify graduates with disabilities. This was undertaken with assistance from Group Training Australia and National Disability Services. Group Training Australia is the national peak body for all group training organisations, collectively the largest employer of apprentices and trainees in Australia. Over the past decade, Group Training Australia has had an active commitment to support apprentices and trainees with disabilities and has participated in two national studies to facilitate this (Lewis, Thoresen & Cocks 2011a). National Disability Services is the Australian peak umbrella organisation for all non-government disability services, with more than 700 member organisations (National Disability Services 2009). Targeted follow-up with disability employment services and group training organisations known to have supported apprentices and trainees with disabilities in the past was carried out. Second, all disability liaison officers who were members of the disability networks established by registered training organisations in Victoria and Western Australia were contacted to identify potential participants. A third strategy was to contact state training authorities. Four were contacted and all agreed to assist the researchers, although their recruitment methods differed.

The comparison group of graduates without disabilities was recruited to match the distribution of the disability cohort's characteristics by gender, age and apprenticeship/traineeship type. Group training organisations in the four states from which the majority of participants were recruited (New South Wales, Queensland, South Australia and Western Australia) were convenience-sampled and asked to randomly approach potential participants without disabilities, based as closely as possible on the



three variables as a guide. There was a satisfactory match between the two groups. Overall, the strategies successfully recruited participants in the first wave to allow for statistical rigour in regression analysis at completion of the third and final wave, assuming a reasonable attrition rate.<sup>1</sup> The organisations, the potential participants identified and the actual survey participants are summarised in table 1.

**Table 1 Participant recruitment**

Recruitment source	Organisations responded		Potential participants <sup>(a)</sup>		Participants <sup>(b)</sup>	
	n	(%)	n	(%)	n	(%)
DES	14	(35.0)	183	(6.4)	49	(10.0)
GTOs <sup>(c)</sup>	17	(42.5)	305	(10.7)	74	(15.1)
RTOs/others	5	(12.5)	38	(1.3)	18	(3.7)
STAs	4	(10.0)	2334 <sup>(d)</sup>	(81.6)	348	(71.2)
Sum	40	(100.0)	2860	(100.0)	489	(100.0)

Notes: (a) Potential participants may have been identified in more than one recruitment source. Surveys distributed through the STAs should duplicate all potential participants identified through other organisations within that jurisdiction. An indication of participants approached multiple times were participants returning multiple surveys related to the same course. The sum of potential participants should be interpreted as an indicator rather than a total.

(b) Numbers do not reflect excluded participants. A total of 13 returned surveys were excluded as the graduates had completed outside the 2009–11 inclusion period.

(c) Includes participants recruited for the comparison group.

(d) People who completed more than one apprenticeship or traineeship may have been counted more than once. An indication of the latter was a participant approached through an STA returning two surveys relating to different courses.

Participants received an honorarium to encourage participation and reduce attrition.<sup>2</sup> It is not possible to determine an exact response rate to this survey. The proportion of ineligible participants contacted is unknown. Some identified potential participants indicated to the recruiting organisations that they did not meet the inclusion criteria because they had graduated outside the specified time period, or did not have a disability. The proportion of potential participants who had moved house and were therefore not contactable is also unknown.<sup>3</sup> An estimated 17.6% to 19.8% of potential participants identified returned a survey,<sup>4</sup> which is low compared with the proposed 31.5% response rate deemed reasonable for postal surveys (Kaplowitz, Hadlock & Levine 2004).

## Data analysis

The findings presented in this report are a combination of qualitative and quantitative information from the first wave of the three-year survey, distributed in 2011. The survey consisted of closed (multiple choice) and open (free text) questions. Participants were invited to identify up to three barriers and three facilitators affecting their course completion, and this information was coded into themes and subthemes. It should be noted that information was coded to more than one theme and/or subtheme where appropriate.

1 It is difficult to predict attrition. The Longitudinal Surveys of Australian Youth (LSAY) aim to maintain an 80% response rate for each wave, although the Y09 cohort had only retained 53.3% (compared with the stipulated goal of 64%) of the original sample in the third wave (NCVER and Department of Education, Employment and Workplace Relations 2012). To enable regression analysis at the completion of data collection, this study must maintain a 50% response rate for each wave (25% retention at the third and final wave).

2 This was the first of three waves. The second and third waves will take place in 2012 and 2013. To encourage continued participation, study participants received a \$60 gift voucher for participating in each wave.

3 The Australian Bureau of Statistics (ABS; 2010a) has estimated that 43% of people aged 15 years and over had moved within the past five years. However, some groups are more mobile than others, as 90% of young households without children (aged 35 years or younger) had moved at least once within the preceding five years and 40% had moved three times or more.

4 The lowest estimate is the number of returned surveys divided by the number of potential participants identified. The higher estimate is the number of returned surveys divided by the number of potential participants identified by the STAs + potential participants identified in all other states + potential participants approached by GTOs for the comparison group.

## Representativeness of participants

Participants are non-representative samples. In reviewing the characteristics of research participants and administrative data for all apprentices and trainees with or without disabilities, several caveats must be noted. First, the comparison group was drawn to mirror the main characteristics of apprenticeship and traineeship graduates with disabilities participating in this study, not those of all apprenticeship and traineeship graduates. Second, the recruitment strategy biased the sampling of some participants. Most notably, there was a low proportion of participants from Victoria. There may be both selection bias and other compounding factors which contributed to this, which are reviewed below. While acknowledging some caveats, the findings of this report are reflective of the experiences of the research participants in the study, which is one of the largest cohort studies of its kind. With the exception of the low proportion of participants from Victoria and the overrepresentation of some disabilities, demographic characteristics broadly match that of the general apprenticeship and traineeship population with disabilities.

Table 2 describes the gender, age and state/territory of residence of survey participants, according to apprenticeship or traineeship completion. This is contextualised with proportions across the same variables for all apprenticeship and traineeship commencements in 2010 (NCVER 2011a).

The gender composition of research participants is similar to the general population. The slightly higher proportion of older graduates among research participants compared with the NCVER data, which reflect age when commencing, is likely to reflect similar proportions across age groups upon graduation. The distribution of state/territory of residence of research participants reported is not reflective of the distribution of apprentices and trainees with disabilities across Australia. The major discrepancy in geographical distribution of research participants is the underrepresentation of participants from Victoria, due to the recruitment strategies employed. (Research participants from Victoria were only approached through disability employment services, group training organisations, and the disability liaison officers of the registered training organisations; the Victorian State Training Authority was not approached.)

Table 3 describes the main and additional disabilities among survey participants. These are self-reported and the distinction between main and additional disability may be highly subjective. The most prominent disability among research participants is intellectual or learning disability, with 43.3% of survey respondents indicating this as either their main or an additional disability. Reflecting on the proportion of intellectual or learning disabilities and other disabilities within this group from a population standpoint is complex. Reported population-based data in Australia, following the move towards the World Health Organization's International Classification of Functioning, focused on functional levels rather than diagnostic classifications. Intellectual and learning disabilities are often grouped together in statistical compilations, although they represent quite distinct impairments (ABS 2010b, 2011; Lewis, Thoresen & Cocks 2011b). Other prominent disability types amongst survey participants include medical condition (23.5%), physical disability (23.0%), deaf or hearing impairment (14.9%), mental illness (11.1%) and blind or vision impairment (9.7%). The proportion of research participants declaring an intellectual or learning disability is much higher than among all VET graduates with disabilities as reported in national data. NCVER (2011c) reports that 21.5% of VET students in 2010 disclosed an intellectual (5.6%) or learning (15.9%) disability, which is much lower than the 43.3% reported among the apprenticeship and traineeship graduates with disabilities in this study. The impact of the proportion of graduates whose disability status is unknown and graduates with an unspecified disability is unknown.

**Table 2 Gender, age and state/territory of residence**

	Disability group (DG)						Comparison group (CG)			General population <sup>(b)</sup>				
	Appr.		Train.		All DG <sup>(a)</sup>		Appr.		Train.	All CG <sup>(a)</sup>		Appr. and train.		
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
<i>Gender</i>														
Females	15	(13.2)	151	(54.3)	170	(42.1)	2	(7.7)	35	(59.3)	37	(43.5)	134 600	(42.9)
Males	99	(86.8)	127	(45.7)	232	(57.4)	24	(92.3)	24	(40.7)	48	(56.5)	179 400	(57.1)
All	114	(100.0)	278	(100.0)	402	(100.0)	26	(100.0)	59	(100.0)	85	(100.0)	314 000	(100.0)
<i>Age</i>														
19 or younger	2	(1.8)	15	(5.5)	17	(4.3)	-		6	(10.5)	6	(7.4)	115 100	(36.7)
20–24	53	(47.7)	96	(35.0)	152	(38.5)	7	(29.2)	22	(38.6)	29	(35.8)	54 100	(17.2)
25–44	50	(45.0)	103	(37.65)	155	(39.2)	16	(37.5)	15	(22.8)	31	(38.3)	100 100	(31.9)
45 or older	6	(5.4)	60	(21.9)	71	(18.9)	1	(4.2)	14	(24.6)	15	(18.5)	44 800	(14.3)
All	111	(100.0)	274	(100.0)	395	(100.0)	24	(100.0)	57	(100.0)	81	(100)	314 100	(100)
<i>State/territory</i>														
ACT	-		3	(1.1)	3	(0.7)	-		-		-		4 900	(1.6)
NSW	53	(46.1)	116	(41.6)	172	(42.6)	4	(15.4)	9	(15.3)	13	(15.3)	97 200	(31.0)
Qld	11	(9.6)	11	(3.9)	23	(5.7)	3	(11.5)	23	(39.0)	26	(30.6)	64 300	(20.5)
SA	29	(25.2)	111	(39.8)	145	(35.9)	13	(50.0)	16	(27.1)	29	(34.1)	23 500	(7.5)
Tas.	-		1	(0.4)	1	(0.2)	-		1	(1.7)	1	(1.2)	8 400	(2.7)
Vic.	3	(2.6)	9	(3.2)	12	(3.0)	2	(7.7)	6	(10.2)	8	(9.4)	85 500	(27.2)
WA	19	(16.5)	28	(10.0)	48	(11.9)	4	(15.4)	4	(6.7)	8	(9.4)	27 400	(8.7)
NT	-		-		-		-		-		-		2 800	(0.9)
All	115	(100.0)	279	(100.0)	404	(100.0)	26	(100.0)	59	(100.0)	85	(100.0)	314 000	(100.0)

Notes: Percentages have been rounded.

A dash (-) represents a true zero.

(a) Includes participants with missing data on apprenticeship or traineeship level.

(b) Commencements in 2010, not completions (NCVER 2011a).

**Table 3 Main and additional disabilities**

	Participants' main disability						Participants' additional disabilities						Participants' main and additional disabilities						Disabilities	
	Apprentices		Trainees		Total <sup>(a)</sup>		Apprentices		Trainees		Total <sup>(a)</sup>		Apprentices		Trainees		Total <sup>(a)</sup>		VET graduates 2009 <sup>(b)</sup>	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Blind or vision impairment	10	8.8	15	5.4	26	6.4	2	9.5	11	9.3	13	8.9	12	10.5	26	9.4	39	9.7	2 851	12.0
Deaf or hearing impairment	17	14.9	31	11.2	49	12.1	1	4.8	9	7.6	11	7.5	18	15.8	40	14.4	60	14.9	2 013	8.5
Epilepsy	3	2.6	3	1.1	6	1.5	1	4.8	2	1.7	3	2.1	4	3.5	5	1.8	9	2.2		n/a
Head injury or acquired brain injury	3	2.6	11	4.0	14	3.5	1	4.8	6	5.1	7	4.8	4	3.5	17	6.1	21	5.2	371	1.6
Intellectual or learning	59	51.8	98	35.4	159	39.4	4	19.0	11	9.3	16	11.0	63	55.3	109	39.4	175	43.3	5 103	21.5
Medical condition	12	10.5	38	13.7	50	12.4	4	19.0	38	32.2	45	30.8	16	14.0	76	27.4	95	23.5	4 258	17.9
Mental illness	3	2.6	20	7.2	25	6.2	3	14.3	16	13.6	20	13.7	6	5.3	36	13.0	45	11.1	2 305	9.7
Physical	6	5.3	59	21.3	69	17.1	1	4.8	22	18.6	24	16.4	7	6.1	81	29.2	93	23.0	3 313	14.0
Other	1	0.9	2	0.7	3	0.7	4	19.0	3	2.5	7	4.8	5	4.4	5	1.8	10	2.5	2 582	10.9
Unspecified		-		-	3	0.7		-		-		-		-		-	3	0.7	927	3.9
Respondents	114	100.0	277	100.0	404	100.0	18	(100.0) <sup>(c)</sup>	99	(100.0) <sup>(d)</sup>	122	(100.0) <sup>(e)</sup>	114	100.0	277	100.0	404	100.0	23 723	100.0

Notes: Percentages have been rounded.

A dash (-) represents a true zero.

<sup>(a)</sup> Includes participants with missing data on apprenticeship or traineeship level.

<sup>(b)</sup> Source: 2010 National VET Provider Collection, as shown in NCVET (2011c).

<sup>(c)</sup> An average of 1.17 additional disabilities was reported among the 16% of apprenticeship graduates who declared additional disabilities.

<sup>(d)</sup> An average of 1.19 additional disabilities was reported among the 36% of traineeship graduates who declared additional disabilities.

<sup>(e)</sup> An average of 1.20 additional disabilities was reported among the 30% of graduates who declared additional disabilities.

# Apprenticeships and traineeships

## Educational and training background

Table 4 indicates participants' highest level of high school; level of certificate completed; full- or part-time status; and VET in School status for their apprenticeships and traineeships. Half of the research participants had completed Year 12 (48.9% of participants with disabilities and 50.0% of participants in the comparison group).

**Table 4 High school, certificate level, full-time status and VET in Schools**

	Disability group (DG)			Comparison group (CG)		
	Apprentices n (%)	Trainees n (%)	All DG <sup>(a)</sup> n (%)	Apprentices n (%)	Trainees n (%)	All CG n (%)
<i>High school</i>						
Year 9 or below	15 (13.3)	25 (9.1)	41 (10.3)	1 (3.8)	4 (6.8)	5 (6.0)
Year 10	35 (31.0)	65 (23.7)	103 (25.9)	8 (30.8)	11 (19.0)	19 (22.6)
Year 11	22 (19.5)	34 (12.4)	59 (14.7)	6 (23.1)	12 (20.7)	18 (21.4)
Year 12	41 (36.3)	150 (54.7)	194 (48.9)	11 (42.3)	31 (53.4)	42 (50.0)
All	113 (100.0)	274 (100.0)	397 (100.0)	26 (100.0)	58 (100.0)	84 (100.0)
<i>Certificate</i>						
Cert. I	2 (1.8)	8 (2.9)	10 (2.6)	-	1 (1.7)	1 (1.2)
Cert. II	3 (2.6)	78 (28.7)	81 (20.8)	1 (4.0)	11 (19.0)	12 (14.5)
Cert. III	89 (78.1)	146 (53.7)	237 (60.9)	19 (76.0)	35 (60.3)	54 (65.1)
Cert. IV	20 (17.5)	40 (14.7)	61 (15.7)	5 (20.0)	11 (19.0)	16 (19.3)
All	114 (100.0)	272 (100.0)	389 (100.0)	25 (100.0)	58 (100.0)	83 (100.0)
<i>Full-time status</i>						
Full-time	95 (82.6)	106 (38.4)	201 (51.4)	20 (76.9)	32 (54.2)	52 (61.2)
Part-time	15 (13.0)	146 (52.9)	161 (41.2)	3 (11.5)	26 (44.1)	29 (34.4)
Mix of full- and part-time	5 (4.3)	24 (8.7)	29 (7.4)	3 (11.5)	1 (1.7)	4 (4.7)
All	115 (100.0)	276 (100.0)	391 (100.0)	26 (100.0)	59 (100.0)	85 (100.0)
<i>VET in Schools</i>						
VET in Schools	6 (5.3)	29 (10.5)	35 (9.0)	-	6 (10.2)	6 (7.1)
Work-based	96 (85.0)	236 (85.8)	332 (85.6)	25 (96.2)	53 (89.8)	78 (91.8)
Mix of VET in Schools and work-based	11 (9.7)	10 (3.6)	21 (5.4)	1 (3.8)	-	1 (1.2)
All	113 (100.0)	275 (100.0)	388 (100.0)	26 (100.0)	59 (100.0)	85 (100.0)

Notes: Percentages have been rounded.

A dash (-) represents a true zero.

<sup>(a)</sup>Includes participants with missing data on apprenticeship or traineeship level.

The proportion of graduates who completed lower-level certificates is higher among graduates with disabilities than for graduates without disabilities. This is true more so for VET students generally, rather than for apprentices and trainees specifically. Among the qualifications completed by people with disabilities, 38.9% were a certificate I or II, compared with 24.7% for people with no disability (NCVER 2011c, table 4). With regards to apprenticeship and traineeship commencements in 2010, 16.4% of graduates with disabilities completed a certificate I or II compared with 12.6% of graduates without a disability (NCVER 2011c, table 8). Among the research participants, 23.4% of graduates with disabilities completed a certificate I or II, compared with 15.7% of participants in the comparison group. This suggests that a larger proportion of research participants graduated with a certificate I or II compared

with all apprenticeship and traineeship graduates in 2010. Almost all participants who completed a certificate I or II were trainees (94.5% for graduates with disabilities and 92.3% for those without disabilities).

A large proportion of research participants (48.4%) undertook part-time training at some point during their course. In comparison, 70.6% of all apprentice and trainee commencements in 2010 were full-time (NCVER 2011a). The proportion of research participants who had undertaken VET in Schools or a mix of VET in Schools and work-based training at some point in time, was 14.4% and 8.2% for graduates with and without disabilities respectively, compared with 6.0% of all 2010 apprenticeship and traineeship commencements being school-based (NCVER 2011a). This may account for much of the proportion of part-time training among research participants. A similar proportion of apprenticeship (15.0%) and traineeship (14.2%) graduates with disabilities had at some point undertaken their course as VET in Schools.

Apprenticeships and traineeships have been clustered into 17 industries in table 5, based on the Western Australian State Training Authority apprenticeship and traineeship lists. More than one-quarter of apprenticeship graduates with disabilities completed a building and construction course (26.4%). Other prominent apprenticeships were in metals, manufacturing and services (11.8%); automotive (10.9%); and electrical (10.0%). More than a third of the traineeship graduates with disabilities completed a finance, property and business services course (34.4%). Other prominent traineeships were in community services, health and education (17.2%); wholesale, retail and personal services (11.5%); and primary industries. Among apprenticeship graduates without disabilities, more than one-third completed a building and construction course (34.6%), followed by automotive (23.1%), and electrical and primary industries (both 11.5%). Half of the traineeship graduates without disabilities completed a finance, property and business course (50.0%), followed by hospitality and tourism (10.3%) and primary industries (8.6%). Research participants completed apprenticeships and traineeships in a range of industries, reflecting the variety of courses on offer.

## Motives for undertaking an apprenticeship or traineeship

Table 6 outlines the motives participants reported for undertaking their courses. Participants were asked to indicate at least one motive, but could select up to six predefined motives as well as specify additional motives. A total of 97.8% of graduates with disabilities and 100.0% of participants without disabilities reported at least one motive. The most common motivation was to increase their skills, as reported by 64.3% of graduates with disabilities and 74.1% of participants without. The prospect of obtaining a job was also a highly motivating factor, as reported by 45.1% and 42.4% of graduates with and without disabilities respectively, followed by personal interests, as reported by 39.5% of participants with disabilities and 38.8% of participants without disabilities.

The Student Outcomes Survey also identified the motives of VET graduates for undertaking their training (NCVER 2011b). Respondents were all VET graduates (not only apprenticeship and traineeship graduates) and only one motive was requested in the survey. Employment-related motives were reported by 80.3% in both 2010 and 2011 as their main reason for undertaking their training. There were seven employment-related motives, which included 'to get a job', 'it was a requirement of my job', and 'gain extra skills for current job', as reported by 21.5%, 21.2%, and 17.7% of graduates in 2010 respectively.

**Table 5 Apprenticeship and traineeship areas**

Industry	Disability group (DG)						Comparison group (CG)					
	Apprentices		Trainees		All DG		Apprentices		Trainees		All CG	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Arts, sports and recreation	-		4	(1.5)	4	(1.1)	-		1	(1.7)	1	(1.2)
Automotive	12	(10.9)	9	(3.4)	21	(5.6)	6	(23.1)	1	(1.7)	7	(8.3)
Building and construction	29	(26.4)	4	(1.5)	33	(8.9)	9	(34.6)	1	(1.7)	10	(11.9)
Community services, health and education	1	(0.9)	45	(17.2)	46	(12.4)	1	(3.8)	2	(3.4)	3	(3.6)
Electrical	11	(10.0)	-		11	(3.0)	3	(11.5)	-		3	(3.6)
Finance, property and business	-		90	(34.4)	90	(24.2)	-		29	(50.0)	29	(34.5)
Food	10	(9.1)	9	(3.4)	19	(5.1)	-		-		-	
Hospitality and tourism	8	(7.3)	15	(5.7)	23	(6.2)	-		6	(10.3)	6	(7.1)
Light manufacturing	4	(3.6)	7	(2.7)	11	(3.0)	1	(3.8)	-		1	(1.2)
Mentals, manufacturing and services	13	(11.8)	1	(0.4)	14	(3.8)	2	(7.7)	-		2	(2.4)
Mining industry	-		1	(0.4)	1	(0.3)	-		1	(1.7)	1	(1.2)
Primary industry	10	(9.1)	25	(9.5)	35	(9.4)	3	(11.5)	5	(8.6)	8	(9.5)
Process manufacturing	1	(0.9)	3	(1.1)	4	(1.1)	-		1	(1.7)	1	(1.2)
Public administration	-		2	(0.8)	2	(0.5)	-		-		-	
Transport and storage	-		10	(3.8)	10	(2.7)	-		3	(5.2)	3	(3.6)
Utilities, electrotechnology and printing	3	(2.7)	7	(2.7)	10	(2.7)	-		4	(6.9)	4	(4.8)
Wholesale, retail and personal services	8	(7.3)	30	(11.5)	38	(10.2)	1	(3.8)	4	(6.9)	5	(6.0)
All	110	(100.0)	262	(100.0)	372	(100.0)	26	(100.0)	58	(100.0)	84	(100.0)

Notes: Percentages have been rounded.  
A dash (-) represents a true zero.

**Table 6 Motives for doing the apprenticeship or traineeship**

Motives	Disability group (DG)						Comparison group (CG)					
	Apprentices <sup>(a)</sup>		Trainees <sup>(b)</sup>		All DG <sup>(c)</sup>		Apprentices <sup>(d)</sup>		Trainees <sup>(e)</sup>		All CG <sup>(f)</sup>	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Personal interests	64	(55.7)	90	(32.4)	156	(39.5)	19	(73.1)	14	(23.7)	33	(38.8)
Others' suggestion	16	(13.9)	48	(17.3)	64	(16.2)	3	(11.5)	3	(5.1)	6	(7.1)
To get a job	61	(53.0)	116	(41.7)	178	(45.1)	14	(53.8)	22	(37.3)	36	(42.4)
Something to do	9	(7.8)	27	(9.7)	36	(9.1)	2	(7.7)	1	(1.7)	3	(3.5)
Increase skills	54	(47.0)	199	(71.6)	254	(64.3)	16	(61.5)	47	(79.7)	63	(74.1)
Do something new	26	(22.6)	41	(14.7)	64	(16.2)	7	(26.9)	13	(22.0)	20	(23.5)
Other	12	(9.1)	25	(9.0)	38	(9.6)	3	(11.5)	3	(5.1)	6	(7.1)
All	115	(100.0)	278	(100.0)	395	(100.0)	26	(100.0)	59	(100.0)	85	(100.0)

Notes: Percentages have been rounded.

<sup>(a)</sup> Average of 2.1 motives cited.

<sup>(b)</sup> Average of 2.0 motives cited.

<sup>(c)</sup> Average of 2.0 motives cited and includes participants with missing data on apprenticeship or traineeship level.

<sup>(d)</sup> Average of 2.5 motives cited.

<sup>(e)</sup> Average of 1.7 motives cited.

<sup>(f)</sup> Average of 2.0 motives cited.

# Barriers and facilitators

## Overview

Identifying the barriers and facilitators affecting course completion is important since this will enable the provision of more targeted support. Important also is addressing the inhibiting structures that preclude a large proportion of enrolled apprentices and trainees from graduating. Enhancing the completion rates of equity groups, such as people with disabilities, will address some of the significant disadvantages they experience across employment, income, social inclusion and wellbeing (National VET Equity Advisory Council 2011) and will also lead to significant cost savings for the government through reduced social welfare payments and increased tax revenue as employment prospects improve (OECD 2003, 2007, 2010, 2012).

Among the research participants, 83.2% of graduates with disabilities reported at least one barrier to completion of their course compared with 80.0% of graduates without disabilities. It is unknown whether participants who did not respond to this question experienced any barriers to course completion. The reported barriers have been summarised across five themes, as presented in table 7; these have also been used to summarise facilitators in table 8. Among research participants, 93.8% of graduates with disabilities reported at least one facilitator compared with 92.9% of participants without a disability. Barriers and facilitators have been cross-coded to additional theme/s where appropriate and so the percentages in tables 7 and 8 are calculated according to the total number of responses to the respective questions rather than the total number of participants in each group. In total, the graduates with disabilities reported 844 barriers (average of 2.5 per respondent) compared with 161 barriers reported by graduates without disabilities (average of 2.3). There were 1061 facilitators identified by disability group participants (average of 2.8) compared with 209 facilitators in the comparison group (average of 2.6).

It should be noted that only a small proportion of participants explicitly stated that there were no barriers to course completion. However, the proportion of participants in the comparison group reporting no barriers was almost double that of the proportion of participants in the disability group.

**Table 7 Barriers to course completion**

Theme	Disability group		Comparison group	
	n	(%)	n	(%)
Lack of resources	182	(49.3)	51	(62.2)
Impact of disability, health, and injury	168	(45.5)	5	(6.1)
Employment factors	117	(31.7)	14	(17.1)
Training and education factors	107	(30.0)	26	(31.7)
Negative motivations, experience, and networks	74	(20.1)	21	(25.6)
No barriers	33	(8.9)	14	(17.1)
All	369	(100.0)	82	(100.0)

Note: Percentages have been rounded.



**Table 8 Facilitators for course completion**

Theme	Disability group (%)		Comparison group (%)	
	n	(%)	n	(%)
Positive motivations, experience, and networks	272	(70.8)	46	(58.2)
Employment factors	200	(52.1)	55	(69.6)
Training and education factors	195	(50.8)	33	(41.8)
Receiving resources	139	(36.2)	32	(40.5)
Addressing disability, health, and injury	21	(5.5)	-	
No facilitators	5	(1.3)	-	
All	384	(100.0)	79	(100.0)

Notes: Percentages have been rounded.

A dash (-) represents a true zero.

Table 9 indicates the organisations supporting the apprentices and trainees. Similar proportions of participants in the disability group and comparison group reported being supported by at least one organisation, 82.9% and 83.5% for graduates with disabilities and without disabilities respectively. It should be noted that the majority of comparison group participants were recruited through group training organisations, which may account for the large proportion of comparison group participants indicating that they received support from group training organisations (57.7%) compared with participants in the disability group (21.8%). The role of the sources of support described in table 9 will be included in the discussion of barriers and facilitators.

In the remainder of this chapter the reported barriers and facilitators within each of the five identified themes will be discussed (subthemes are listed in appendices A and B). It should be noted that, while some barriers and facilitators are common across the broader VET apprenticeship and traineeship population, others are clearly related to the presence of a disability. It should also be noted that areas which were challenging for some participants acted as facilitators for others. It is clear that the most important facilitator reported among participants was supportive and understanding individuals or agencies willing to provide flexible, individualised support tailored to the individuals' needs. This included emotional and practical support and encompassed both the training and workplace environments. Support came from friends and family, supervisors and co-workers, disability employment services, group training organisations and other employers/host employers, TAFE or other registered training organisations and disability liaison officers in TAFE or other organisations, assessors and trainers.

**Table 9 Sources of supports**

Sources of support	Graduates with disabilities					Comparison group						
	Apprentices <sup>(a)</sup>		Trainees <sup>(b)</sup>		All <sup>(c)</sup>	Apprentices <sup>(d)</sup>		Trainees <sup>(e)</sup>		All <sup>(f)</sup>		
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)		
DES	29	(32.6)	101	(41.4)	130	(38.8)	n/a		n/a			
GTO	25	(28.1)	48	(19.7)	73	(21.8)	13	(65.0)	28	(54.9)	41	(57.7)
TAFE	61	(68.5)	76	(31.1)	139	(41.5)	9	(45.0)	13	(24.5)	22	(31.0)
Employer/host employer	19	(21.3)	117	(48.0)	137	(40.9)	9	(45.0)	37	(72.5)	46	(64.8)
Other	3	(3.4)	17	(7.0)	20	(6.0)	-		3	(5.9)	3	(4.2)
All	89	(100.0)	244	(100.0)	335	(100.0)	20	(100.0)	51	(100.0)	71	(100.0)

Notes: Percentages have been rounded.

<sup>(a)</sup>Average of 1.5 sources of supports cited.

<sup>(b)</sup>Average of 1.5 sources of supports cited.

<sup>(c)</sup>Average of 1.5 sources of supports cited and includes participants with missing data on apprenticeship or traineeship level.

<sup>(d)</sup>Average of 1.6 sources of supports cited.

<sup>(e)</sup>Average of 1.6 sources of supports cited.

<sup>(f)</sup>Average of 1.6 sources of supports cited.

## Resources

As described in table 7, a larger proportion of participants in the comparison group (62.2%) reported the lack of resources as a barrier to course completion than participants in the disability group (49.3%). Factors encompassed by this theme were the most prominent barriers to course completion among graduates, irrespective of disability status. Issues relating to the lack of time and other non-financial resources were also reported.

Common challenges reported by the participants included poor training wages and the cost of equipment or tools required for the training. Receiving additional resources and being able to make flexible arrangements were common facilitators reported by participants in both the disability and comparison groups. Graduates without disabilities, however, cited such facilitators more frequently than participants with disabilities. Facilitators included government allowances to buy tools and equipment and support by the employer, such as allocated paid time to study. It has been suggested that poor training wages contributes to the attrition of apprentices and trainees (Snell & Hart 2008), as some withdraw from their courses to undertake better-paid unskilled or semi-skilled jobs. Particularly in industries or workplaces where apprentices and trainees undertake similar jobs as unskilled labourers, this inequity in salaries is a barrier to course completion among all apprentices and trainees.

Research participants also cited the lack of time, feeling rushed and associated stress as barriers. A male trainee in the disability group stated that he 'struggled working long hours and then coming home to study was hard [when he] was tired'. There were also other demands on time, such as 'family commitment', and for some this was compounded by 'health conditions' and 'working hours [were] too much due to ... disability'. With the exception of the compounding factors of health conditions and disability, graduates in the comparison group reported the same barriers.

Participants also reported transport difficulties: not having a driving licence, poor public transport and the amount of time commuting to training, work or work sites were challenges for course completion. A male traineeship graduate in the disability group indicated that he 'rel[ied] on others for transport'. This may be more challenging in certain industries that require people to commute outside normal public transport operating hours or in areas with limited public transport facilities.

The barriers and facilitators described in this section outline challenges that are likely to be common across the apprenticeship and traineeship population as they relate to some of the fundamental structures of this form of training. A larger proportion of graduates without disabilities cited barriers in this theme, although about half of the graduates with disabilities also cited barriers related to a lack of resources, opportunity or flexibility.

## Disability, health and injury

Although a small number of comparison group participants indicated poor health and injury as a barrier to course completion, the analysis of this theme will only address graduates with disabilities. Almost half the participants with disabilities reported that their disabilities were a barrier to their course completion. The most prominent subtheme concerned issues of literacy and/or numeracy (half of all barriers within this theme). In addition, participants reported barriers associated with the built environment; a lack of assistive technology; discomfort, pain, and health problems; and challenges from sensory disability and communication. They indicated that adjustments to the built environment, the provision of assistive technology, medication, availability of interpreters, adjustment to the training material or format, and the provision of additional training support such as tutors or note-takers assisted them to complete their courses. However, the majority of these facilitators were not coded in the disability, health, and injury theme as they related specifically to education and training

or workplace factors. This reinforces the argument that the environment determines whether a condition is disabling and supports such as technology and aids, adjustments to teaching material, access to tutors, adjustments to work tasks, or adjustments to the built environment will reduce the impact of disability (National VET Equity Advisory Council 2011). Barriers related to the impact of disability, health and injury are therefore better understood within the context of the employment factors or training and education factors and are explored further together with the facilitators within these themes.

## Employment factors

Participants reported a range of barriers and facilitators related to employment factors. This section will mainly look at barriers associated with experiences of harassment and bullying, and the facilitators related to supportive work environments and the benefit of work-based training. As illustrated in table 7, the proportion of participants in the disability group reporting barriers related to employment factors was almost double that of participants in the comparison group. On the other hand, a much larger proportion of comparison group participants reported facilitators among employment factors than did disability group participants, as illustrated in table 8.

Among participants with disabilities, the barriers were most commonly associated with workloads (one-third of barriers within this theme), while for comparison group participants the employment factor barriers related to loss of employment opportunities (almost one-third). Additional barriers included poor workplace experiences such as harassment and bullying, which graduates with disabilities were much more likely to report, and practical barriers.

Despite the comparison group participants reporting facilitating employment factors more frequently than the disability group participants, more than half the graduates with disabilities reported work-related facilitators (69.6% and 52.1% respectively), as recorded in table 8. The absolute majority of the facilitators identified for both the disability and comparison groups were generic or unspecified but illustrative of supportive work environments and cultures (including specifying supportive and understanding colleagues, co-workers and supervisors). In addition, both groups highlighted the value of work-based training.

## Bullying

The experience of bullying and harassment were made explicit by some participants, while others articulated it as 'difficulties', 'lack of understanding', and 'unfair treatment'. The 42 graduates with disabilities who reported bullying or similar barriers in employment and in the workplace represented 10.4% of all participants with disabilities. By comparison, five (5.9%) of the participants in the comparison group reported barriers in this subtheme. A total of 9.6% of all research participants (including those who did not specify any barriers) claimed they had experienced incidents in employment and in the workplace that could be interpreted as bullying. Graduates with disabilities were almost twice as likely to report barriers within this area and also reported that the employers had a 'lack of understanding' about their disabilities.

Interviews provided valuable insight into some of the in-training experiences of the apprenticeship and traineeship graduates with disabilities. An example of a participant experiencing bullying from co-workers and supervisors while undertaking training was recounted by a male butcher in his late teens with sensory impairments. This participant believed work had helped him to mature and given him a clearer direction. His aim was to open his own shop and he received strong family support through some

unpleasant experiences. A female participant also conveyed her experiences of being bullied during some of her apprenticeship placements and also in the workplace following graduation. In some cases this was subtle, such as being excluded socially by co-workers, but she also felt harassed and bullied by the employer. Subsequently, through perseverance and family support, she opened her own business, eventually hoping to be able to employ apprentices and provide supportive mentorship, which she felt she had not received during her own training.

Although the proportion of research participants experiencing bullying was much higher among graduates with disabilities, it has been suggested that apprentices and trainees in general are susceptible to bullying. Two studies into experiences of first year apprentices (not trainees) in Victoria indicated that about one-third had experienced bullying and almost two-thirds knew of other apprentices who had been bullied (du Plessis & Corney 2011). Apprentices were more likely to experience bullying and less likely to report it than other employee groups. Bullying was identified as a contributing factor in the attrition of apprentices (du Plessis & Corney 2011).

### Supportive work environments and work-based training

Although a minority of research participants reported work environments where they had experienced harassment and bullying, the majority identified employment factors as facilitating their course completion. It is interesting to note that a much larger proportion of graduates in the comparison group (69.6%) identified facilitators in the work environment compared with graduates in the disability group (52.1%). For graduates with disabilities, this included supportive managers and supervisors, helpful co-workers, the provision of assistive technology and other modifications to the work environment, and the provision of both emotional and practical support. The accessibility of support and flexibility of work were also important. Some participants found inspiration or encouragement in managers' and colleagues' belief in their ability to complete their courses. A female trainee in the disability group stated that she had experienced ongoing support from her employer, which had helped her to complete her course. Participants also indicated that the training structure was rewarding and suitable. A male apprentice in the disability group stated that 'the hands-on aspect of the [training]' was beneficial and he felt 'successful' in his training area.

A female trainee in the disability group stated: 'work was rewarding as I made lots of friends and made lots of great food', while a male trainee in the comparison group stated that his 'host company was really great, gave me some really good support and I was promoted seven months into my traineeship'. Supportive work environments included the establishment by colleagues of supportive relationships, being recognised as members of the work team and recognition of achievements. Research participants in both the disability and comparison groups also specified the on-the-job training as beneficial. A female trainee in the disability group elaborated on the benefit of on-the-job training: 'On-the-job training makes theory and practice fit together for greater understanding'. Work-based training is one of the hallmarks of apprenticeships and traineeships and this form of training is extremely useful for people with disabilities (Lewis, Thoresen & Cocks 2011a, 2011b).

The majority of workplace facilitators involved support from managers, staff members, co-workers and other apprentices or trainees in the work environment, reflecting the apprentices and trainees' social integration into their work environments during their courses. The relationship between social and economic outcomes among research participants will be investigated in the subsequent waves of this research project, but the issues associated with the barriers to and facilitators of course completions suggest that social inclusion in the work environment facilitated completions, while social exclusion, particularly harassment and bullying, were significant barriers.

One-third of the participants with disabilities reported receiving support from disability employment services during their courses. Although these organisations traditionally support people with disabilities in the workplace, their support can also be extended to the education and training environment. Most graduates with disabilities did not specify the dimension/s of their training in which they had received disability employment services support. Disability employment services organisations are funded by the Australian Government to support eligible people with disabilities to find and maintain employment. The complementary support from disability employment services and support from group training organisations or other organisations with specialist knowledge of apprenticeships and traineeships has been identified as a successful strategy in improving the completion rates of apprentices and trainees with disabilities (Lewis, Thoresen & Cocks 2011a). Support from disability employment services in relation to the training component is particularly important when the views on competencies or training approaches differ between the employer and assessors from TAFE or other registered training organisations.

## Training and educational factors

A similar proportion of graduates with disabilities (30%) and graduates without disabilities (31.7%) reported barriers across training and educational factors (table 7). However, a much larger proportion of graduates with disabilities (50.8%) than graduates without disabilities (41.8%) reported facilitators related to training and education factors than graduates without disabilities (table 8). Graduates with disabilities also reported receiving support from TAFE more frequently than graduates without disabilities, as shown in table 9.

Training and educational barriers included limited access to lecturers and tutors, assessments and workbooks and, for participants with disabilities, issues associated with numeracy and literacy. Some participants indicated that they had limited opportunities, were not given relevant or broad enough tasks for the training, or that the work tasks and demands from the employer were of little relevance to the training course. Some participants found the discrepancies between the training and workplace approaches to specific tasks challenging, with the TAFE lecturer or training material stipulating a specific approach to tasks but with the employer requiring a different approach. Facilitators included individuals within the training network such as tutors and lecturers; the course content, material and structure; and collaborative learning. Graduates with disabilities identified additional supports that addressed the impact of their disability. These included assistive technology, adjustments to the built environment and, more frequently, resources and support related to literacy and numeracy, which included additional tutoring and note-takers.

## Training providers

Of the participants identifying the barriers associated with training and educational factors, around one-third of the graduates in both the disability and comparison groups experienced challenges with the training providers, for example, with lecturers, tutors and assessors. A handful of graduates with disabilities identified 'lack of assistance and understanding', they felt being discriminated against and being 'look[ed] down on' because of little industry experience. It is unclear whether these barriers were similar to those viewed as instances of harassment and bullying, reported among the employment factors. More common barriers related to training providers, where it was felt that insufficient or inconsistent access to lecturers and tutors was made available. These barriers were similar across the disability and comparison groups. There were also similarities across the two groups regarding the forms of support provided by the training providers, although a larger proportion of graduates with disabilities

reported facilitators related to this theme than graduates without disabilities. As was the case regarding the work environment, support in the training environment for graduates with disabilities was usually provided by teachers, lecturers, tutors and disability liaison officers. Interview participants also indicated that they received support from their training and educational provider. A male traineeship graduate with a disability who had undertaken his course through VET in Schools claimed that the wraparound support he had received from disability employment services, the group training organisation, TAFE and his high school had significantly helped him to complete his course.

## Numeracy and literacy

One-quarter of all research participants with disabilities reported barriers related to numeracy and literacy, reflecting the high proportion of participants with intellectual and/or learning disabilities. One participant noted that ‘some of the big words mean the simplest things but they use big words’, while another participant indicated that he knew ‘the answer in [his] head’ but he had difficulties ‘understanding how to address individual questions’. Consequently the provision of support with reading, writing and communication was a major facilitator for course completion. Graduates with disabilities identified individual teachers, classmates, counsellors and tutors as providing this form of support. One apprentice stated that the ‘TAFE teachers were committed to their job’, which he found ‘very helpful’, and that their ‘understanding, patience and commitment to getting [him] through the apprenticeship and obtaining the skills [he] needed’ was what helped him complete his course. Two graduates in the comparison group also identified poor literacy skills as barriers to course completion. One of the graduates without a disability stated explicitly that this was a result of his non-English speaking background.

Almost 40% of graduates with disabilities declared an intellectual or learning disability, which means that support to enhance the accessibility of the training material was crucial for many participants. Support was also required for participants with other disabilities; for example, adaptive technology, including specialised computer software, interpreters, or having material or the environment brailled for those with hearing and vision impairments. The lack, delay or malfunction of such supports was a major barrier for these participants.

## Motivations, experience and networks

One-fifth of the participants in the disability group and one-quarter of the participants in the comparison group reported barriers related to their lack of motivation and a lack of support or competing family demands. However, the proportion of participants, particularly graduates with disabilities, who reported positive motivations and experiences as well as support from their family and others in their networks as facilitators for their course completions, is remarkable. More than 70% of participants in the disability group and almost 60% of participants in the comparison group identified their own motivations and perseverance; prior or positive experiences; and support from family, friends, acquaintances, and others as enablers.

Although formal support provided by registered training organisations, disability employment services, the employer or host employer were crucial, informal support was also important. Often, when the formal supports were inadequate, informal supports could compensate and mitigate adverse outcomes. Informal supports came from friends, family, co-workers and others who personally worked towards the best outcomes for the person. Some participants in the disability group reported that the work or training environment expected family, co-workers, or other people in their personal network to provide

the support that would normally would be required of the employer or trainer. This included adapting training material or work tasks into a suitable format.

Social exclusion is more common among people with disabilities than among those without (Australian Government 2009; Department of Families, Housing, Community Services and Indigenous Affairs 2011; National People with Disabilities and Carers Council & Department of Families, Housing, Community Services and Indigenous Affairs 2009). Ensuring social inclusion for people with disabilities can also improve their other outcomes. The importance of social networks, or social capital, as facilitators for the graduates with disabilities supports this paradigm. Employment generally, and completing apprenticeships and traineeships specifically, can enhance social inclusion for people with disabilities.

# Enhancing support structures

While a number of the key barriers and facilitators affecting course completion have been identified in this study, strengthening the support structures is equally likely to assist more apprentices and trainees with disabilities to complete their courses. The complementary expertise of disability employment services and group training organisations has previously been identified as a key success strategy in the improvement of course completions for apprentices and trainees with disabilities across three sequential research projects carried out by EDGE Employment Solutions, including two national projects in partnership with Group Training Australia (Lewis, Thoresen & Cocks 2011a). Among the best practices identified in the first national project was the joint support and marketing of apprentices and trainees to host employers as well as the formalisation of agreements between disability employment services and group training organisations through memorandums of understanding. Among the research participants with disabilities in the current study, however, only 21 graduates, or 5.2%, reported that they had been supported by both disability employment services and a group training organisation during their training.

In a commissioned study the National VET Equity Advisory Council highlighted the benefits to the community – in excess of \$12 billion in 2020 – if barriers to VET participation, completion and employment transitions were eliminated for people with disabilities and Indigenous Australians. The National VET Equity Advisory Council also highlighted the importance of establishing and building strong partnerships between agencies that support disadvantaged people to undertake and complete VET. Strategies included ‘holistic case management’, with a particular emphasis on registered training organisations such as TAFE institutes (National VET Equity Advisory Council 2011).

It is clear that support was the single most important factor facilitating course completions among research participants with disabilities. The provider and the content and role of this support varied greatly among research participants. Extensive support was provided by individuals in formal capacities from disability employment services, group training organisations, TAFE, and the employer/host employer, and in informal roles such as family, friends, co-workers and other apprentices and trainees. The importance of informal supports is that they can reduce poor outcomes when the formal supports are inadequate. The support provided by parents, co-workers and friends with work and training tasks when formal supports from the training or work environments were insufficient assisted the apprentices and trainees in this study to complete.

Enhancing these support structures will benefit apprentices and trainees with disabilities. It may be advantageous to continue to encourage the joint support of apprentices and trainees with disabilities by disability employment services and group training organisations. Support for establishing and mentoring partnerships may be required. A national project in which disability employment services and group training organisations established partnerships, recruited, employed and supported apprentices and trainees with disabilities achieved completion rates exceeding those of apprentices and trainees without disabilities (Lewis, Thoresen & Cocks 2011a). The project provided financial incentives for disability employment services and group training organisations to form partnerships, disseminated information to participating organisations on success stories and strategies, and provided ‘hot-desk’ telephone support to organisations experiencing challenges. The project was only funded to support a total of 20 partnerships across two rounds and was concluded in 2008, although some organisations were at that stage continuing their partnerships on their own accord.



This study has identified that family, friends, colleagues and other informal supports play pivotal roles in facilitating course completions among apprentices and trainees, and particularly so for apprentices and trainees with disabilities. In the context of the latter, programs to enhance informal supports can be challenging. It may be better to blur the boundaries between formal and informal supports through, for example, mentoring programs conducted by disability employment services, group training organisations, TAFE and employers. Given the low completion rate even among apprentices and trainees without disabilities, this may be an approach that benefits all apprentices and trainees. The National VET Equity Advisory Council has welcomed moves by the government to better integrate employment and training, which may include closer collaborations between disability employment services and registered training organisations (National VET Equity Advisory Council 2011). The role of informal supports identified by the research participants, however, highlights the importance of social inclusion for the social and economic outcomes for people with disabilities.

Further research into the social and economic outcomes of the apprenticeship and traineeship graduates with disabilities participating in this research project will take place. Outcomes will be mapped longitudinally and investigation into if and how this changes over time, as well as the relationship between social and economic outcomes, will be carried out.

# Conclusions

People with disabilities experience both social and economic exclusion (Australian Government 2009; Department of Families, Housing, Community Services and Indigenous Affairs 2011; OECD 2003, 2007, 2010, 2012). Increasing the available employment opportunities can redress social and economic disadvantage. Apprenticeships and traineeships have been identified as very effective employment pathways for people with disabilities. Although almost one in five Australians has a disability (ABS 2010b), apprenticeship and traineeship graduates with disabilities only accounted for between 1.2% and 2.0% of apprenticeship and traineeship completions for any given year between 1998 and 2010 (NCVER 2011c). Both lower participation rates and completion rates contribute to this (NCVER 2011c). Even when adjusting for the lower disability prevalence among younger Australians, who are more likely to undertake apprenticeships and traineeships, people with disabilities are significantly underrepresented. This is despite similar outcomes following graduation for apprentices and trainees with and without disabilities (Ball & John 2005). Identifying barriers to and facilitators for course completion is crucial to the development of strategies for increasing the completion rates of apprentices and trainees with disabilities.

This research report examined the barriers and facilitators experienced by a cohort of 404 apprenticeship and traineeship graduates with disabilities and drew comparisons with responses from a smaller group of 85 graduates without disabilities. These findings may differ from the experiences of apprentices and trainees who do not complete their courses.

There were many similarities across the disability and comparison groups, although the barriers related to disability, health and injury were specific to the disability group. A large proportion of participants in both the disability and comparison group reported barriers associated with a lack of resources, opportunity or flexibility. However, graduates without disabilities reported barriers related to this theme more frequently. The impact of training wages is reflected in this theme and it is clear that this is a recurring challenge which contributes to the high attrition of apprentices and trainees who do not graduate (Snell & Hart 2008). Increasing resources, opportunities and flexibility for apprentices and trainees is likely to enhance completion rates generally. At a time when there are skills shortages in selective industries (Oliver 2011), and uncertainty regarding future skills shortages, a review to examine the impact of increased remuneration on improving apprenticeship and traineeship completion rates may be warranted, although this strategy is not the most appropriate for increasing the participation and completion rates for apprentices and trainees with disabilities.

A larger proportion of graduates with disabilities reported barriers related to employment factors than those without disabilities. Participants in the disability group were also twice as likely to report incidents of harassment or bullying as participants in the comparison group. While research has found the bullying of apprentices to be frequent and may include elements of initiation (du Plessis & Corney 2011), additional supports for employers of apprentices and trainees with disabilities may improve post-training outcomes. This could include education and training for managers and work colleagues, meeting costs for reasonable workplace modifications, and providing individualised support for the apprentices and trainees with disabilities. While providing financial incentives for employers to hire apprentices and trainees with disabilities may increase training opportunities, employers also require increased knowledge and skills to train and support apprentices and trainees with disabilities, particularly if the disability is complex (or if they have multiple disabilities). Disability employment services and group training organisations are important actors in supporting employers of people with

disabilities; strengthening the partnerships between organisations such as those whose role is to support apprentices and trainees will further enhance outcomes.

Despite previous research having identified the success of collaborative support between organisations with complementary expertise, only a very small proportion of participants reported being supported by both disability employment services and a group training organisation. Additional facilitation to encourage organisations to support apprentices and trainees collaboratively may be warranted. This may include reviewing current funding and rating arrangements for disability employment services that support apprentices and trainees with disabilities. It may also be appropriate to arrange partnerships between disability employment services and group training organisations.

Similar proportions of apprentices and trainees in the disability and comparison groups reported barriers related to training and education. However, more participants among the graduates with disabilities reported support from registered training organisations, particularly from lecturers, tutors, disability liaison officers, and fellow students at TAFE as facilitating their course completions. Although this study did not investigate the role of registered training organisations and TAFE institutes specifically, partnerships between disability employment services and registered training organisations or TAFE institutes will also benefit apprentices and trainees with disabilities (Lewis, Thoresen & Cocks 2011a). Disability employment services can offer valuable insight into adaptive technology and other strategies to support apprentices and trainees with disabilities in the training and educational environment as well as in the employment environment. Further investigation into this may be warranted.

The most significant facilitating factor for completion reported among apprentices and trainees with disabilities was the support provided by individuals, including family, friends and colleagues. This included extensive emotional, practical and material support. People in formal roles, such as employers, trainers and support workers from disability employment services, group training organisations and registered training organisations or TAFE institutes also provided extensive support. It is generally assumed that economic outcomes for people with disabilities such as employment facilitate social outcomes, such as increased social inclusion. However, the facilitating role played by participants' personal networks in course completion also suggests that social networks and personal relationships are important for employment outcomes such as apprenticeship and traineeship completions. Further investigation into social and economic outcomes as well as the interrelationship between these will take place in the subsequent waves of this research project.

# References

- ABS (Australian Bureau of Statistics) 2009, *Labour force survey standard products and data item guide*, cat.no.6103.0, ABS, Canberra, viewed 19 March 2012, <[www.abs.gov.au/ausstats/abs@.nsf/mf/6103.0](http://www.abs.gov.au/ausstats/abs@.nsf/mf/6103.0)>.
- 2010a, *Australian social trends December 2010, moving house*, cat.no.4102.0, ABS, Canberra, viewed 7 August 2012, <[www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/1EC236296D59BBAACA2577F80010E159/\\$File/41020\\_housingmobility2010.pdf](http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/1EC236296D59BBAACA2577F80010E159/$File/41020_housingmobility2010.pdf)>.
- 2010b, *Disability, ageing, and carers, Australia, summary of findings*, cat.no.4430.0, ABS, Canberra, viewed 19 March 2012, <[www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/9C2B94626F0FAC62CA2577FA0011C431/\\$File/44300\\_2009.pdf](http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/9C2B94626F0FAC62CA2577FA0011C431/$File/44300_2009.pdf)>.
- 2011, *Disability, Australia, 2009*, cat.no.4446.0, ABS, Canberra, viewed 19 March 2012, <[www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4446.02009?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4446.02009?OpenDocument)>.
- ANTA (Australian National Training Authority) 2000, *Bridging pathways: national strategy from 2000 until 2005: the national strategy for increasing opportunities for people with a disability in vocational education and training*, ANTA, Brisbane, viewed 4 April 2012, <[www.dest.gov.au/NR/rdonlyres/3C0412FD-6898-46B5-B333-E19359C1D10F/11001/bridgingPathwaysNationalStrategy.pdf](http://www.dest.gov.au/NR/rdonlyres/3C0412FD-6898-46B5-B333-E19359C1D10F/11001/bridgingPathwaysNationalStrategy.pdf)>.
- Australian Institute of Health and Welfare 2009, *Australia's welfare*, AIHW, Canberra.
- Australian Government 2009, *A stronger, fairer Australia, national statement on social inclusion*, Commonwealth of Australia, Canberra, viewed 4 April 2012, <[www.socialinclusion.gov.au/sites/www.socialinclusion.gov.au/files/publications/pdf/report\\_stronger\\_fairer\\_australia.pdf](http://www.socialinclusion.gov.au/sites/www.socialinclusion.gov.au/files/publications/pdf/report_stronger_fairer_australia.pdf)>.
- Ball, K 2004, 'Factors influencing completion of apprenticeships and traineeships', Australian Labour Market Research Workshop, Perth, 6–7 December 2004, viewed 7 August 2012, <[www.voced.edu.au/content/ngv25148](http://www.voced.edu.au/content/ngv25148)>.
- Ball, K & John, D 2005, *Apprenticeship and traineeship completion rates*, NCVET, Adelaide, viewed 4 April 2012, <[www.ncver.edu.au/publications/1582.html](http://www.ncver.edu.au/publications/1582.html)>.
- Bagshaw, M & Fowler, C 2008, *National VET Disability Advisory Taskforce final report and recommendations*, viewed March 2012, <[www.dest.gov.au/NR/rdonlyres/9BF34871-8282-4CDA-9931-F13377E9016/25870/NVDAT\\_Final\\_report\\_2008.pdf](http://www.dest.gov.au/NR/rdonlyres/9BF34871-8282-4CDA-9931-F13377E9016/25870/NVDAT_Final_report_2008.pdf)>.
- Bednarz, A 2012, *Lifting the lid on completion rates in the VET sector: how they are defined and derived*, NCVET, Adelaide, viewed 4 April 2012, <[www.ncver.edu.au/publications/2467.html](http://www.ncver.edu.au/publications/2467.html)>.
- Cavallaro, T, Foley, P, Saunders, J & Bowma, K 2005, *People with a disability in vocational education and training: a statistical compendium*, NCVET, Adelaide.
- Cocks, E & Harvey, T 2008, *Employment/day options interface research project: final report*, School of Occupational Therapy and Social Work, Centre for Research into Disability and Society, Curtin University of Technology, Perth.
- Corbiere, M & Lecomte, T 2009, 'Vocational service offered to people with severe mental illness', *Journal of Mental Health*, vol.18, no.1, pp.38–50.
- du Plessis, K & Corney, T 2011, 'Blue-collar apprentices and bullying: experiences of bullying and its relation to resilience, satisfaction and self-rated health', in T Corney & K du Plessis (eds), *Apprentices – young people in transition*, Incolink & Australian Clearinghouse for Youth Studies, Carlton and Hobart.
- Eggleton, I, Robertson, S, Ryan, J & Kober 1999, 'The impact of employment on the quality of life of people with an intellectual disability', *Journal of Vocational Rehabilitation*, vol.13, no.2, pp.95–107.
- Jiranek, D & Kirby, N 1990, 'The job satisfaction and/or psychological well being of young adults with an intellectual disability and nondisabled young adults in either sheltered employment, competitive employment or unemployment', *Journal of Intellectual & Developmental Disability*, vol.16, no.2, pp.133–48.
- Department of Families, Housing, Community Services and Indigenous Affairs 2011, *National Disability Strategy for Australia 2010–2020: an initiative of the Council of Australian Governments*, Commonwealth of Australia, Canberra, viewed 15 August 2012, <[fahcsia.gov.au/our-responsibilities/disability-and-carers/publications-articles/policy-research/national-disability-strategy-2010-2020](http://fahcsia.gov.au/our-responsibilities/disability-and-carers/publications-articles/policy-research/national-disability-strategy-2010-2020)>.
- Griffin, T & Beddie, F 2011, *Researching VET and disability: at a glance*, NCVET, Adelaide.
- Group Training Australia Ltd, *Policy statement – a better skilled workforce*, viewed 18 March 2010, <[www.grouptraining.com.au/policy/downloads/GTA%20Policy%20Statement%20REVISED%20FINAL.pdf](http://www.grouptraining.com.au/policy/downloads/GTA%20Policy%20Statement%20REVISED%20FINAL.pdf)>.
- Kaplowitz, MD, Hadlock, TD & Levine 2004, 'A comparison of web and mail survey response rates', *Public Opinion Quarterly*, vol.68, no.1, pp.94–101.

- Karmel, T & Mlotkowski, P 2010, *The impact of wages on the probability of completing an apprenticeship or traineeship*, NCVER monograph series, 04/2010, NCVER, Adelaide.
- Kober, RO & Eggleton, IRC 2005, 'The effect of different types of employment on quality of life', *Journal of Intellectual Disability Research*, vol.49, no.20, pp.756–60.
- Lewis, G 2002, *Key success factors in placing and supporting new apprentices with disabilities through group training: findings from a national study*, EDGE Training Solutions, Subiaco.
- Lewis, G, Thoresen, SH & Cocks, E 2011a, 'Post-course outcomes of apprenticeships and traineeships for people with disability in Western Australia', *Journal of Vocational Rehabilitation*, vol.35, no.2, pp.107–16.
- 2011b, 'Successful approaches to placing and supporting apprentices and trainees with disability in Australia', *Journal of Vocational Rehabilitation*, vol.34, no.3, pp.181–9.
- National Disability Services 2009, *Annual report 2008–2009*, viewed 18 March 2010, <[www.nds.org.au/asset/view\\_document/979317491](http://www.nds.org.au/asset/view_document/979317491)>
- National People with Disabilities and Carers Council & Department of Families, Housing, Community Services and Indigenous Affairs 2009, *Shut out: the experience of people with disabilities and their families in Australia: National Disability Strategy consultation report*, FaHCSIA, Greenway, viewed 4 April 2012, <[www.fahcsia.gov.au/sa/disability/pubs/policy/community\\_consult/Documents/NDS\\_report.pdf](http://www.fahcsia.gov.au/sa/disability/pubs/policy/community_consult/Documents/NDS_report.pdf)>.
- NCVER (National Centre for Vocational Education Research) 2011a, *Australian vocational education and training statistics: apprentices and trainees 2010 – annual*, NCVER, Adelaide, viewed 4 April 2012, <[www.ncver.edu.au/publications/2387.html](http://www.ncver.edu.au/publications/2387.html)>.
- 2011b, *Australian vocational education and training statistics: student outcomes 2011*, NCVER, Adelaide, viewed 4 April 2012, <[www.ncver.edu.au/publications/2442.html](http://www.ncver.edu.au/publications/2442.html)>.
- 2011c, *Students with a disability*, NCVER, Adelaide, viewed 4 April 2012, <[www.ncver.edu.au/publications/2394.html](http://www.ncver.edu.au/publications/2394.html)>.
- NCVER & Department of Education, Employment and Workplace Relations 2012, *LSAY – Y09 cohort – response rates*, viewed 15 August 2012, <[www.lsay.edu.au/cohort/2009/104.html](http://www.lsay.edu.au/cohort/2009/104.html)>.
- National VET Equity Advisory Council 2011, *Equity blueprint 2011–2016: creating futures: achieving potential through VET*, viewed 15 August 2012, <[www.vetinfonet.det.wa.edu.au/accessequity/docs/nveac%20equity%20blue%20print%202011-2016%281%29.pdf](http://www.vetinfonet.det.wa.edu.au/accessequity/docs/nveac%20equity%20blue%20print%202011-2016%281%29.pdf)>.
- OECD (Organisation for Economic Co-operation and Development) 2003, *Transforming disability into ability: policies to promote work and income security for disabled people*, OECD Publications, Paris.
- 2007, *Sickness, disability and work: breaking the barriers: vol.2: Australia, Luxembourg, Spain and the United Kingdom*, OECD Publications, Paris.
- 2010, *Sickness, disability and work: breaking the barriers: a synthesis of findings across OECD countries*, OECD Publications, Paris.
- 2012, *Sick on the job? Myths and realities about mental health and work*, OECD Publications, Paris.
- Oliver, D 2011, *Skill shortages in the trades during economic downturns*, NCVER, Adelaide, viewed 6 August 2012, <[www.ncver.edu.au/publications/2333.html](http://www.ncver.edu.au/publications/2333.html)>.
- Polidano, C & Mavromaras, K 2010, *The role of vocational education and training in the labour market outcomes of people with disabilities*, NCVER, Adelaide, viewed 7 August 2012, <[www.ncver.edu.au/publications/2215.html](http://www.ncver.edu.au/publications/2215.html)>.
- Productivity Commission 2011, *Disability care and support*, report no.54, Canberra.
- Snell, D & Hart, A 2008, 'Reasons for non-completion and dissatisfaction among apprentices and trainees: a regional case study', *International Journal of Training Research*, vol.6, no.1, pp.44–73.

# Appendix A

**Table A1 Subthemes in the barriers to course completion**

Theme	Subtheme
Lack of resources	Resources (equipment, tools, financial, logistical, time, adjustment to the built environment or assistive technology) Opportunities (skills development, or relevant supportive employment) Flexibility
Impact of disability, health, and injury	Numeracy and literacy (reading, writing, or comprehension) Health related to disability (pain or discomfort) Communication Environment Social Sensory Mobility Lack of adjustment to tasks Impact of medication
Employment factors	Work place factors Emotional (lack of understanding, harassment, or bullying) Unspecified Practical Poor fit between requirements and work
Training and education factors	Course content (tasks, questions, theory, or requirements) Training networks (tutor, teacher, trainer, assessor, mentor, counsellor, or peers) Course structural factors (content, material, structure, or application) Poor fit between training needs and training
Negative motivations, experiences, and networks	Specified networks (i.e. school) Unspecified networks

# Appendix B

**Table B1 Subthemes in the facilitators to course completion**

Theme	Subtheme
Positive motivations, experiences, and networks	<p>Agency (motivation, determination, perseverance, or resourcefulness)</p> <p>Personal networks (family, friends, or acquaintances)</p> <p>Formal networks (school, disability employment service, employer/host employer, and training network)</p> <p>Prior experiences</p> <p>Work-based training/learning by doing</p>
Employment factors	<p>Employment network (manager/supervisor, colleagues, or other people in the workplace)</p> <p>Work-based training/learning by doing</p>
Training and education factors	<p>Training network (lecturer, tutor, teacher, assessor, mentor counsellor, peers, and others)</p> <p>Course factors (content material, structure, application, schedule, including adjustments to these)</p> <p>Collaborative learning</p>
Receiving resources	<p>Opportunity (to develop skills, knowledge, or to engage in work and training)</p> <p>Resource support (equipment, tools, financial incentives, logistics, or additional time)</p> <p>Flexibility</p>
Addressing disability, health, and injury	<p>Adjustment to training environment (ramps, special equipment, or assistive technology)</p> <p>Adjustment to work environment (ramps, special equipment, or assistive technology)</p> <p>Adjustment to training task</p> <p>Medication/improvement of condition</p> <p>Specific funding/services (mobility allowances, self-care services, Disabled Apprentice Supported Wage, allied health services, or other grants)</p> <p>Disability employment services</p>

# NVETR Program funding

This work has been produced by NCVET under the National Vocational Education and Training Research (NVETR) Program, which is coordinated and managed by NCVET on behalf of the Australian Government and state and territory governments. Funding is provided through the Department of Industry, Innovation, Science, Research and Tertiary Education.

The NVETR Program is based on national research priorities approved by ministers with responsibility for vocational education and training.

The authors/project team were funded to undertake this research via a grant under the NVETR Program. The research grants are awarded to organisations through a competitive process, in which NCVET does not participate. To ensure the quality and relevance of the research, projects are selected using an independent and transparent process and research reports are peer-reviewed.

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