COMPETENCY COMPLETION: AN EXAMINATION OF THE SUCCESSFUL STRATEGIES OF APPRENTICES WITH A LEARNING DISABILITY

Sandra Cotton
Manager, Disability Services, Polytechnic West WA
Sandra.cotton@polytechnicwest.wa.edu.au

This paper identifies the barriers experienced by apprentices undertaking trade training and reports on an investigation of the factors and underpinning strategies that contribute to the unit of competency completion rates of apprentices who have a learning disability. It is based on a study that was conducted for the National Centre for Vocational Education and Research as part of their program to build researcher capability in the Vocational Education and Training (VET) sector. Mentoring was organised by AVETRA to support new researchers over the 12 month period of the project. The study was initiated in response to the number of apprentices with a learning disability experiencing difficulties with the theoretical components of the course and being referred to Disability Services at Western Australia's largest Registered Training Organisation (RTO). Many of these apprentices, as proposed by Knapp (2000), have the intelligence, reasoning and concept formation in spite of a learning disability. Overcoming difficulties or barriers to the related course theory, therefore, allows individuals to complete their apprenticeships and have the benefit of a trade. With attrition rates still high among apprentices, the factors and strategies may also have benefit for wider application to apprentices in general and offer lecturers strategies that comply with current equity legislation.

Registered Training Organisations, when assessing competence, must comply with national and state vocation and education training policies so that "reasonable adjustments" are made for students with a disability to have their competence accurately recognised as defined by the Disability Discrimination Act (1992) and the Disability Standards for Education 2005 (Department of Education and Training, 2008). To comply with current policy and legislation, it is necessary that RTO staff understand the characteristics of a learning disability. In this paper , the concept of learning disabilities is provided by Foley, Saunders and Bowman (2005) and draws from the United States National Joint Committee for Learning Disabilities as:

> *a general term that refers to a heterogeneous group of disorders manifested*
> *by significant difficulties in the acquisition and use of listening, speaking, reading,*
> *writing, reasoning, or mathematical abilities. These disorders are intrinsic to the*
> *individual, presumed to be due to central nervous system dysfunction, and may occur*
> *across the lifespan. Problems in self regulatory behaviours, social perception,*
> *and social interaction may exist with learning disabilities but do not by themselves*
> *constitute a learning disability (cited in NCVER 2002).*

A learning disability can be characterised by difficulties in literacy but individuals may experience problems with memory, speed of processing, time management and self esteem (Dominy and Rees 1997). Training organisations are obliged to make reasonable adjustments to accommodate apprentices so that they are able to use what McNulty (2003) refers to as

their compensatory characteristics such as strong visual spatial awareness and unique problem solving capacity; strengths that assist with a natural aptitude for a trade

Review of the Literature

A review of the studies examining the completion and non completion of apprentices over the past ten years provides a context for Australian apprentice retention and attrition. While it might be reasonably expected that the apprentices' aptitude and skill play a major role towards retention, much of the research indicates that personal attributes, support systems and motivation are linked with achieving competency. Factors for success identified by Harris, Simons, Bridge, Bone, Symons, Clayton, Pope, Cummins and Blom (2001) are: the apprentice having a strong sense of personal agency, support from family and friends, and an ongoing commitment to the industry demonstrated through the undertaking of the VET in schools program. The importance of a positive attitude, initiative, the role of support, especially family networks and a passion for the apprenticeship are confirmed by Hill and Daley-Trim, (2008) while Snell and Hart (2008) identified the apprentices' motivation to obtain a certificate to ensure future employment as a significant factor. Cully and Curtain (2001) found the type of employer as having an influence on completion, particularly, those that provide the apprentices with the opportunity to use the skills that they have learned. As well as supportive work environments, Harris et al., (2001) acknowledge the importance off the job training as giving apprentices an opportunity to build relationships with peers, compare notes about workplaces and gain some technical knowledge. Cully and Curtain (2001) also recognise the influence of the occupational culture and the quality of training on retention and course completion.

When examining factors contributing to non completion, Hill and Dalley-Trim (2008) found a lack of initiative and enthusiasm as well as a lack of purpose and self-direction. Harris et al. (2001) described individuals without a sense of personal agency who are cut off from others, lack motivation and see little point in personal effort. While prior education levels are a useful indicator, Ray et al. (2000) as cited in Hill and Dalley-Trim (2008), comment that latent characteristics related to educational levels, such as aptitude and motivation, often have the greatest influence upon the likelihood of successful completion. It is predictable, therefore, that early school leaving age, year ten or below and previous unemployment are identified by Cully and Curtain (2001) as common characteristics among non-completers. This is supported by Snell and Hart (2008) who found those less likely to complete an apprenticeship were under the age of 25, had left school before they competed year 12 or 11 or undertaken a certificate I or II qualification.

Completion and non completion of students with learning disabilities

Milsom and Dietz (2009) and Borgå (2007), found that successful students have established networks of support such as families and friends, positive personal qualities, the ability to determine their learning goals and to place a high value on the chosen occupation. According to Borgå (2007), personal qualities or attributes play an important part in the success of students who have dyslexia, with those succeeding showing a mental fortitude to give their very best to each educational endeavour. Similarly, Milsom and Dietz (2009) found that students with learning disabilities who have the greatest chance of success at college display personal characteristics such as persistence, resilience, self-determination and self-discipline. These qualities enable the individual to persevere in pursuit of their goals despite potential

setbacks because they believe in their personal ability to achieve and maintain a clear focus on those goals. Milsom and Dietz (2009) and Borgå (2007), attributed the retention of students with a learning disability to "a passion for the job". Research conducted for the Department of Education Science and Training (2007) confirms these factors, highlighting the crucial characteristics of a supportive environment and lecturers who establish personal relationships with students, and create an atmosphere for success while focusing on skill development. The evidence here is that motivation, initiative, and self determination are significant factors in determining completion of many apprentices. It is important to consider that in spite of support and a commitment to the industry, however, many of apprentices with a learning disability experience low self esteem. Furthermore, they may have lost the motivation, initiative and self determination required to complete units of competency. These units often require the skills of reading, spelling and writing where individuals have previously experienced humiliation and failure.

An investigation into specific support or adjustment for students with a learning disability

Factors outlined in this paper, while playing an important role in the completion or non completion of apprentices, are not enough to address the barriers of poor reading, comprehension and writing, anxiety and or depression and negative self-image. In addition to factors that encourage and motivate, apprentices require specific strategies to address additional challenges presented by a learning disability. An investigation of the literature in this area reveals a range of strategies have been applied to students with a learning disability in post secondary organisations with varying degrees of success. To access new information, Trainin and Swanson (1990), for example, recommend instructional strategies, including modelling answers, scaffolding and cooperative learning. Borgå (2009) also identified the value of cooperative learning approaches, where students found discussions with their fellow students instructive and rewarding.

Additional time to practice and acquire a new skill is a fundamental adjustment for these students. Based on the research of neuroscientist, Shaywitz (2003), students with dyslexia have a neurological disorder causing phonological processing difficulties so "far and away the most critical accommodation for the dyslexic reader is extra time." (p.314). Similarly, to overcome the difficulties of poor writing in assignments, Herrington and Simson (2002), developed the use of alternative assessments with taped and videoed responses. To offset poor organisational abilities and time management difficulties, Milson and Dietz (2009) recommend that counsellors or support staff assist students with time management skills, the use of planners and the development of study skills for self reliance. To compensate for deficits in phonological processing, Trainin and Swanson (2005) and Wong (1996) encourage the use of metacognitive strategies or self-regulated behaviours for students who rely on different cognitive processes that don't involve decoding. With training in metacognitive skills, students learn to manage their own time, decide with whom to study and to monitor their comprehension with a variety of internal and external supports such as peers, family and relevant staff members. Reis and Colbert (2004) advocate a supportive learning environment in which to implement these strategies and to overcome the social, emotional and developmental barriers experienced by many of these students. It is important, therefore, that Disability Service staff identify students with a learning disability in a timely manner and work with lecturers and mentoring staff to implement suitable compensatory strategies to address the needs of these students to prevent their underachievement and promote their healthy social and emotional development.

Educational technology must also be considered as a strategy to assist apprentices with a learning disability. As the NET generation, so labelled by Marateo and Ferris (2007), these students are advantaged in dealing with using the new technologies to access learning. Advances in hardware and software applications, have benefits for struggling writers (MacArthur, 2009). These technologies range from basic word processing, spell checkers, word prediction and speech recognition for transcription and revision, to more advanced speech recognition and voice activation packages. Accessibility has also improved with the emergence of free computer software known as "freeware" and portable software programs that convert text to speech. MacArthur (2009) also identifies the potential of the Internet to improve students' communication skills. The Department of Education Science and Training (2007) acknowledges the positive social and cognitive development achieved through such strategies and poses what pedagogical approaches using technology can optimise learning. Research examined here demonstrates that strategies must build on strengths and develop the students' self efficacy which underpins their personal agency and drives motivation.

The Research Method

Research was conducted at the largest training organisation in Western Australia. With ten and a half thousand apprentices and approximately 450 trade lecturers across 35 industries areas, this organisation has a representative cross-section of apprentices and staff to provide an adequate sample for the purpose of this study. A questionnaire was used to gather data from 21 apprentices with a learning disability who are making progress in their certificate III trade qualifications. Fifteen lecturers and Disability Services staff and employment representatives participated in two focus groups, while interviews were conducted with seven family members and staff unable to be involved in focus groups. Participants in this study were selected for their experience of and insights into the subject. Given the constraints of resources and the timeframe, this study concentrates only on unit of competency completion based on the premise that this is evidence of progress towards retention, and eventually to the completion of a trade qualification. According to Australian Quality Training Framework 2007 (Department of Education and Training, 2008) a unit of competency means the specification of knowledge and skill and the application of that knowledge and skill to the standard of performance expected in the workplace. Apprentices receive their qualification from the training organisation when they are competent in both the training and on the job components of the course

Findings

The majority of apprentices, 80%, were diagnosed with dyslexia, often coexisting with attention deficit disorder. As a result of their learning disability, they experience difficulties; the two most common being an understanding of the texts and reading. Apprentices also experienced difficulties with assessments (58%), writing (52.6%) and concentrating (52.6%). Another 10% and 15 % of students also found organisation and time management respectively as problematic. The responses of the apprentices were confirmed by, lecturers and disability support staff who identified that poor organisation; lacking timetables and materials, has disadvantaged the apprentices in their course. Staff also acknowledged that problems associated with the learning disability such as distractibility, frustration, anxiety, and withdrawal were affecting the apprentices' capacity to focus and attain competency.

Factors contributing to completion

Responses of apprentices and lecturers confirm factors such as work satisfaction, pay and job availability as significant influences on their completion rates and the motivation for taking on their apprenticeship, identified by Snell and Hart (2008) and Harris et al., (2006). Eighty-six per cent revealed that they enjoyed the work, whereas the potential of being well paid at the completion of the apprenticeship motivated 60%, and another 53% were attracted by the availability of jobs in their industry. Completion of VET in schools and work experience were also given as reasons for taking on an apprenticeship by 60% of respondents. This is consistent with the findings of Harris et al., (2001) that students undertaking VET in schools demonstrate increased retention rates. Apprentices' responses emphasised the high value placed on their chosen occupation and an ongoing commitment to the industry also evidenced by those undertaking VET in schools.

Responses to the questionnaire and the data gathered from focus groups indicate that overarching factors underpinned by specific strategies, fell into the following broad categories that in many cases overlap and include:
- Systemic responses or holistic instructional approaches
- Supportive learning environments
- Specific instructional intervention

Apprentices' responses to questionnaire show strategies that helped to achieve competency.
Most respondents answered more than one question

Mentoring/tutoring	77.8%	14
Extra time	50.0%	9
Verbal assessments	38.9%	7
Notetakers	33.3%	6
Peer notetaking	22.2%	4
Technologies e.g. use of the computer	22.2%	4
Practical experiences	61.1%	11
Practical demonstrations	55.6%	10
Help with organising study e.g. study skills	33.3%	6
Handouts	61.1%	11
Understanding staff	66.7%	12

Holistic Instructional Approaches

Consistent with findings of Trainin and Swanson (1990), apprentices and lecturers support instructional approaches that address a range of learning styles and abilities and avoiding singling out individuals. A lecturer in automotive described the procedure of inclusive training, where the theory is made accessible through 'hands on' application and peer support, as follows:

We pair up the less capable students with stronger students during a quick theory presentation, which is put into practice in the workshop and further supported with diagrammatical presentations. This is then reinforced back in the class through discussions and debriefing. By breaking it down, it then reinforces what you've done in the class and that connection helps it stick for the fellow that struggles with the theory. In Auto, the apprentices cover more theory when they've got a piece of equipment in front of them.

Supportive learning environments

Lecturers identified the need to accommodate apprentices with appropriate styles of delivery while supporting them within a stimulating and encouraging learning environment. A lecturer, acknowledged for his success in dealing with apprentices at risk of failure, stressed how important it is to give apprentices a challenge but to support them through the challenge with the tools they need to succeed. Similarly, a metal fabrication lecturer, while enthusiastically advocating the value of building the apprentices' self-esteem, understood that encouragement alone was not enough. As a result, he uses a range of delivery styles and strategies that create a supportive working environment. This involves listening to the students, building trust through group activities and setting up a buddy system where the strengths and weaknesses of the students are balanced in an encouraging team atmosphere. Apprentices, he maintains, are more receptive to learning when they are happy and their stress levels are down. These practices confirm the need of a supportive learning environment, espoused by (Reis and Colbert, 2004), so apprentices with a learning disability overcome social, emotional and developmental barriers to learning. Findings of this study showed that apprentices agreed with the measures taken by lecturers to encourage the students, with 20% confirming the benefits of peer support and 66% acknowledging the role of understanding staff.

Specific instructional strategies

Consistent with the findings of Wong (1996) and Trainin and Swanson (2005), specific instructional strategies were acknowledged by the majority of apprentices, staff and parents as strengthening the apprentices' capacity to complete units of competency. The importance of individual tuition, where apprentices are given individual strategies, is evident with 77% of apprentices specifying mentoring or tutoring as the most helpful strategy. Feedback from the disability support staff working as mentors with apprentices, illustrates their use of strategies to develop the apprentices' knowledge and metacognitive abilities required to complete the tasks. In a supportive environment the measures that compensate for processing difficulties while enabling the students to demonstrate their understanding, include:
- simplifying terms and clarifying concepts
- mind mapping
- notetaking
- task analysis
- use of equipment ,diagrams and visual representations to present abstract concepts
- use of technologies such as laptops and tape recordings

Summary

A range of factors and underpinning strategies contribute to the successful completion rates of apprentices with a learning disability who experience barriers in accessing the theoretical components of the training unit of competency. These barriers manifest as difficulties with reading texts, writing, concentration, organisation and time management. Individuals may be further disadvantaged by frustration, anxiety, low self-esteem and self efficacy as a result of the long term impact of disappointment and failure in the learning environment. Training in a trade that provide apprentices the opportunities to build on their strengths, interests and aptitudes, identified in this study often as being 'hands on and problem solving' skills, can

restore their confidence and motivation. In spite of these barriers, therefore, many apprentices have made progress and shown the capacity to understand concepts and demonstrate their skills in order to achieve competency. This success can be attributed to factors such as a commitment to the job, a sense of personal agency, support from family and friends and an encouraging work and training environment. Another important consideration is the completion of year 12, previous work experience or VET in schools. Consistent with the literature, 80 % of the apprentices in this study had completed years 11 or 12 and 60 % VET in schools. Inclusive styles of delivery and supportive learning environments can also assist them in achieving competency.

Underpinning these broad factors have been specific strategies that accommodate students with a learning disability. These strategies such as additional time, presentation of information in different formats and the use of technology, have a basis in sound educational philosophy and may have a relevance to apprentices in general, many of whom share similar backgrounds and learning characteristics of those with a diagnosed learning disability. Findings of this study showed that awareness and application of strategies by lecturing and support staff is keeping pace with contemporary policy and equity principles. In addition, it indicates a willingness to be inclusive and deliver training to meet the learning needs of students from diverse backgrounds. Although techniques such as verbal assessments with extra time have been used widely in the trade areas, staff are now showing more advanced strategies from style of delivery, use of technologies and working closely with support staff and employers. Implementation of strategies, that overcome or remove barriers to learning, present many apprentices with an improved outlook. As shown in this study, the target group have the capacity for skills acquisition but are disadvantaged by neurological impairment, which affects processing upon which reading and writing fluently are contingent. Many of these students with their strong visual spatial awareness, practical skills and an aptitude for problem solving or lateral thinking, have been discouraged at school but see that training organisations now offer an alternative opportunity. Strategies that underpin such practice may accommodate other students disenfranchised by the education system. This may be worth further investigation as the attrition rate of 37 % (Hill and Dalley-Trim, 2008) is significant among both these groups and contributes to what has been waste and lost potential.

Conclusion

Insights provided by this study into the factors and strategies that contribute to the success of these students allows training organisations to put in place practices that will help these apprentices to achieve success. The effectiveness of VET in Schools for apprentices with a learning disability highlights the importance of the links between the schools and the transitions to training and a trade. To achieve this objective, lecturers must be provided with the knowledge and skills to recognize these students for early intervention. This requires professional development so that staff are able, not only to recognise but are equipped to apply the strategies for these students to succeed in training. This study highlighted that a training environment, that is inclusive and encouraging and willing to apply a range of strategies, is compliant with legislative guidelines while giving apprentices the chance to overcome the disadvantage of a learning disability and achieve in an occupation of their choice.

References

Barnes, K., Marateo, R & Ferris, S (2007). Teaching and learning with the net generation, *Journal of Online Education*, (.4), viewed 9 March, http://www.innovateonline.info/index.php?view= article&id=382

Borgå, M. (2007). *Students with Dyslexia: Empirical analysis of the study situation for students with specific reading and writing difficulties in Technical and Vocational Teacher Education,* Association of Teacher Education in Europe viewed 19 June 2009 www.pef.uni-lj.si/atee/978-961-6637-06-0/495-504.pdf

Cavallaro, T., Foley, P, Saunders, J & Bowman, K 2005*, People with a disability in vocational education and training: A statistical compendium*, *NCVER,* Adelaide

Cully, M & Curtain R 2001*, Reasons for new apprentices' non-completions, NCVER,* Adelaide

Dominy, A. & Rees, N. (1997). The class teacher. In P. Thompson and P. Gilchrist (Ed) Dyslexia; A Multidisciplinary Approach (pp 195-230). London: Chapman & Hall.

Feifer, S.G., & De Fina, P. (2003). The neuropsychology of reading disorders. New York: School Neuropsychic Press.

Harris, R., Simons, M., Bridge, K., Bone, J, Symons, H, Clayton, B, Pope, B, Cummins, G., & Blom, K. (2001). *Factors that contribute to retention and completion rates for apprentices and trainees*, Adelaide: National Centre for Vocational Education and Research.

Herrington, M. & Simpson, D (2002). Making *reasonable adjustments with students in higher education* viewed, 19 June 2009, http://www.nottngham.ac.uk/pesl/themes/inclusivity/amending

Hill, H. & Dalley–Trim, L (2000). Hanging in there: What makes a difference in the first year of the apprenticeship, Youth Studies Australia 27 (4) 36-42.

Kennedy, G, 2009 "Fact Sheet: Universal Access using text to speech.

Knapp, P (2004). Overcoming dyslexia book review, Journal *of the American Academy of Child and Adolescent Psychiatry*, 43 (10):1306-9.

MaCarthur, C.A (2009). *Reflection on research on writing and technology for struggling writers* viewed 22 April200: www3.interscience.wiley.com/journal/122352076/issue

Milsom, A. & Dietz, L (2009). *Defining readiness for students with learning disabilities*: a Delphi study, Professional School Counseling 82: 156-168.

Reiss, S.M & Colbert, T (2004). Counselling needs of academically talented students with learning disabilities. *Professional School Counselling* 19: 315-324.

Shaywitz, S.E (2003). *Overcoming dyslexia: A new and complete science based program for reading problems at any level.* New York: Simon and Schuster.

Shaw, J (2004) *Learning disability as a print disability,* viewed 1 May 2009, http://www.utasedu.au/alda/index.html

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 (1)44-73.

Tranin G, & Swanson H.L 2005, Cognition, metacognition and achievement of college students with learning disabilities/ *Learning Disability Quarterly* 28 (4) 261-72.