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Full Length Research Paper

# Building an Australian Indigenous Mining Workforce with Competency Based Training in the Australian Vocational Education and Training (VET) System

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**The Australian mining industry is undergoing resurgence in economic development, and the high demand for additional skilled workers is reflected in employment strategies targeting Indigenous people in remote regions of the nation. Driven by legislative reforms during the 1990s mining companies are installing educational vocational programmes for Indigenous communities and this paper provides primary data of five Indigenous people who successfully transitioned an inaugural unique VET scheme to become full time operators at the Pacific Aluminium refinery at Nhulunbuy on the Gove Peninsula of the Northern Territory (NT) of Australia. The presented evidence challenges simplistic assumptions the delivery of VET programmes to Indigenous people will facilitate their employment at remote Australian mining operations.**

**Keywords:** Mining, Resurgence, Vocational Education and Training (VET)

## INTRODUCTION

The Australian mining sector continues to substantially contribute to the economic welfare of the nation. Even in the current period when the economies of several developed and developing nations are suffering severely from the after effects of the recent Global Financial Crisis (Gültekin-Karakas, Hisarciklilar and Öztürk, 2011; Gurtner, 2010; Sen, 2011) the Australian mining boom is delivering considerable revenue to the State and Federal Governments (*The Mining Tax*, 2011; Roarty, 2010). Nevertheless, maintaining a dominant presence in the global market place as a sustainable supplier of minerals is reliant on a sound and expanding national economy (Dickie and Dwyer, 2011; *Minerals Council*

*Australia*, 2010). Thus, the vibrancy of the Australian minerals industry depends on capital investment, suitable infrastructure, a supply of essential goods and services, innovation and technical knowledge, as well as a dominant focus on the direct and indirect employment of competent people (Martinez-Fernandez, 2010; Zheng *et al.*, 2007). However, the incessant demand for personnel possessing relevant mining industry skills has created a deficiency of these people nationally; and as the increased overseas migration of skilled people is problematic, while more flexible and innovative approaches (such as fly in fly out or drive in drive out) can have negative social influences the threat to regional economic development has advanced an interest in local Indigenous employment (Barker, 2006; Jordan and Mavec, 2010; Warne-Smith, 2010).

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Figure 1 the study site

The 1993 Native Title legislation has profoundly changed how Australian mining companies engage Indigenous communities. Impetus for this legal reform is rooted in the 1992 Mabo decision (*Mabo*2009) of the High Court of Australia when the existence of inherent Indigenous rights in land was recognised. Although current land use agreements may focus on direct financial benefits, and meaningful contributions to Indigenous communities (Kelly and Burkett, 2007; Henderson and Thomas, 2002; Kelly and Sewell, 2001) many of the recently negotiated covenants are likely to contain provision for the training and employment of Indigenous people (Barker 2006; *ICMM* 2008; *Arafura Times*, 2011). Regional partnerships between industry partners and the mining companies to implement Indigenous education and vocation programmes for increasing participation in the workforce have potential to improve community wealth and prosperity (Brereton and Parmenter, 2008; *Good Practice*, 2010; Lertzman and Vredenburg, 2005; Taylor, 2012).

The facilitation of Indigenous training and employment for the Australian mining industry is underpinned with pragmatism. A continuing major problem for the Australian mining sector is embedded in human resource management functions for the attraction, selection and retention of talented people (Colley, 2005; Martinez-Fernandez, 2010; *PwC*, 2012; Moore and Gardner, 2004). In practice, ensuring a fit of work place capabilities necessitates an integration of information acquisition, physical stamina and technical competence as much of the work is performed in onerous, demanding task settings. In addition to the need to possess academic qualifications, employees at Australian mine sites and refineries are obliged to hold certification and vocational documentation that is ultimately connected with government regulations, licenses and enforceable statutes (Banks, 2003; Harvey and Brereton, 2005; Tiplady and Barclay, 2007; Vivoda and O'Callaghan, 2010). Consequently, mining industry workers are

required to not only have relevant task skills, and experience, but to demonstrate workable competencies in English literacy and numeracy, usually not less than grade 10. Delineated in this paper is the subjects were initially deficient in these requirements, as revealed by assessments with national tests (Pearson and Daff, 2010; 2011a), and from disadvantaged work life circumstances (e.g., labouring, low skilled, welfare).

This paper traces out the evolutionary education vocation progress of five Indigenous Australians. Originally from the NT and other Australian states these people gravitated to the mining company sponsored education vocation Arnhem Learning Education and Regional Training (ALERT) scheme (Daff and Pearson, 2009; Pearson and Daff, 2010; 2011a). The programme is conducted on the Gove Peninsula at Nhulunbuy in the NT of Australia, and this remote region is shown in Figure 1. Initially, the subjects were low skilled itinerant and unemployed Aboriginals who travelled to Nhulunbuy to participate in vocational education and training (VET). After being awarded Certificate qualifications in Resources and Infrastructure Operations, and with further educational vocational investment they are now in full time (relatively highly paid) employment as operators at the Nhulunbuy refinery. Foundations for Indigenous employment in the mining operations on the Gove Peninsula, and specifically the journey of the five people are described in the following pages.

### Indigenous Mining Employment

Across a range of infrastructure partnerships the Australian mining sector contributes to rural and regional communities as well as Indigenous employment. From the commencement of British colonisation in 1788 until the Mabo decision on the 3<sup>rd</sup> June 1992, untitled land in Australia was regarded as *terra nullius* (land belonging to no one), and in this context mining companies were

issued with exploration and excavation licenses by Australian governments that reaped considerable revenues. Although some Indigenous people, who lived in the region of the mining operations, were provided with menial employment (Halcombe, 2004; Rogers, 1973), the mining companies had almost uninhibited access to the land as the Indigenous people were disposed of their rights and interests. These arrangements were profoundly changed in 1992 when Eddie Mabo, David Passi and James Rice challenged the Queensland government that had in 1879 annexed the Murray Islands from the Indigenous Merian people, and in 1992 the judgement of the High Court of Australia declared the notion of *terra nullius* irrelevant. To deal with the implications of the Mabo decision, to set forward procedures for dealing with native title claims, and to retrospectively validate the interests of the non Indigenous land holders, in 1993 the Keating Labor government introduced the Native Title Act. In a historic compromise Indigenous organisations accepted the retrospective clause for a guaranteed right to negotiate land use agreements. Subsequently, there has been a concerted drive by mining companies to engage Australian Indigenous communities and to provide educational and vocational training with the view to increase their participation in mining workforces (Barker, 2006; Brereton and Parmenter, 2008; Daff and Pearson, 2009; Harvey and Brereton, 2005; Pearson and Daff, 2011a).

Although the strategic importance of resource extraction to Australia has been widely reported the notion remains contested between national governments, the industry, and Indigenous people. In spite of the swings, commonly referred to as boom and bust cycles, a great deal of literature attests to the significance of mining in terms of business activity, investment, regional development, export revenue, technological advances as well as the contribution to both direct and indirect employment (Martinez-Fernandez, 2010; Menghetti, 2005; Tedesco and Haseltine, 2010). Yet in periods of peak demand for minerals, as occurred in 2012, and is continuing in 2013, a key challenge facing the mining and resources sector is the supply of competent personnel to service the geographically dispersed and remote mineral extraction operations. Historically, inaugural staff shortages and high turnover has encouraged international mining companies to build new towns in Australia (Pearson, 2012a; Thomas, *et al.*, 2006), to considerably improve the infrastructure and services of existing settlements/towns (e.g., Boddington, Kalgoorlie, Ravensthorpe), or to engage in fly in fly out operations (Beach, Brereton and Cliff, 2003). While all these methods continue to be used, more recently mining companies have incorporated into their land use agreements, with the Indigenous Traditional Land Owners, provisions for training and employment of

Indigenous people, who are often from the relatively large populations of Aboriginals who reside in close proximity to the mining operations.

Indigenous vocational outcomes remain unfavourable despite Australian mining companies providing work opportunities in remote regions of Australia. The thriving Australian resources sector, which supports nearly one million people in direct and indirect employment, continues to experience a shortage of skilled and experienced workers (*Skills Australia*, 2011; *PwC*, 2012). To reduce this imbalance some mining companies are providing employment and training opportunities for Aboriginal and Torres Strait Islander people (Chinnery, 2012; *Good Practice*, 2010; *PwC*, 2012), but in spite of these endeavours the representation of Indigenous people in the Australian mining workforce remains quite low (i.e., 2.5%) (Barker, 2006; Brereton and Parmenter, 2008; Jordan and Mavec, 2010; Tiplady and Barclay, 2007) while the proportion of the Indigenous people in the population of these remote areas is relatively high (i.e., 60%) (East Arnhem, 2010; Harrison, 2012). A number of strategies have been promoted (e.g., Mentoring, training packages, industry – education partnerships) for augmenting Indigenous employment in the mining industry. Nevertheless, one dominant feature is few Aboriginal and Torres Strait Islander people have suitable levels of educational attainment commensurate with the certification and educational qualifications of the identified shortages of Australian mining occupations (*ABS*, 2011; *Industry Snapshot*, 2010; *Skills Australia*, 2011).

### VET and Indigenous Mining Employment

A strong desire by mining corporations to hire from local Indigenous communities intensifies the importance of VET in remote regions of Australia. Employment opportunity for Aboriginal people in the resources sector is facilitated by industry bodies and educational institutions collaborating to provide competency based training in the Australian VET system (Keating, 2009; Pocock, *et al.*, 2011; Wallace, *et al.*, 2008). Managed by state, territory and federal governments the Australian VET scheme is led by employers and industry representatives who ensure the system is responsive to client needs (Smith, 2010; Walstab and Lamb, 2009). In Australia VET is formally delivered by Technical and Further Education (TAFE) colleges nationwide, and a plethora of government accredited Registered Training Organisations (RTOs). However, in remote regions of the country lesser facilities are available than those provided in suburban Australia (Pearson and Daff, 2011b).

There are four fundamental elements to the Australian VET scheme. First, is the Australian Qualifications Framework that provides a single structure for defining the nationally recognised qualifications from Senior

Secondary Certification to Ph D. Second, is the Australian Quality Training Framework (AQTF) that is the national set of standards to ensure clients of the Australian VET scheme are delivered high quality training and assessment services. Australian organisations, that deliver VET qualifications must be registered to the AQTF national conditions and standards, are classified as RTOs, which is the third fundamental element of the Australian VET scheme (Keating, 2009). The fourth element is in each state and territory there are accrediting authorities that are responsible for the registering and monitoring of the training organisations to ensure they comply with AQTF standards. These state and territory authorities accredit VET courses and approve the delivery of content and pedagogy to overseas students. National recognition of the AQTF is the cornerstone of the Australian VET system, which is linked to the federal Department of Education Employment and Workplace Relations (DEEWR), State and Territory Authorities, and Industry Skills Councils. A feature of the Australian VET scheme has been continuing industry contribution in terms of leadership and development (Kent, 2004), which has led to competency based curricula (Smith, 2010).

A significant challenge for the VET scheme in remote regions is to fulfil industry and client aspirations. On the one hand mining companies are obliged by Australian statutes and regulations to engage accredited, certified and qualified personnel (Colley, 2005; *Industry Snapshot*, 2010; *PwC*, 2012). On the other hand there may be a considerable gap between these requirements and the held competencies of the applicants, which conditions a fertile platform for enrolment in VET programmes. In Australia vocational skills acquisition can occur with on the job training with or without qualification to allow VET instruction to be undertaken at remote industrial sites. Often this arrangement is combined with a residential component when trainees attend distant suburban/city RTOs that have greater infrastructure capacity.

### **Gove Peninsula Indigenous Mining VET**

The VET system at the Nhulunbuy mining operations has two primary objectives. A primary objective is to ensure employees at the mine site or the refinery are accredited to the regulatory industry standards. The second goal for conducting comprehensive on the job competency based training is to maximise the commensurate level of skills formation with the company operational practice. Although there is generic skill/vocation sets across an industry each site will have peculiarities (i.e., type of refining process, state regulations, and cultural differences) that must be learned and incorporated into acceptable work practices.

A VET programme to prepare Indigenous Australians for employment in the minerals extraction industry

commenced in Nhulunbuy as the ALERT scheme. The initial ALERT programme commenced in May 2007, and thereafter there were two modules per year with a nominal 15 local Indigenous people in each one. Charles Darwin University was the prominent RTO as other organisations were engaged as RTOs to deliver specialist content (e.g., first aid, working at height). At the Nhulunbuy TAFE the trainees were given instruction in carpentry, painting, sheet metal working, and welding. Qualified industry operators were involved with skilling at the mine site (e.g., Heavy haul vehicles). In appropriately equipped premises, built by the mining operator, qualified instructors/teachers gave instruction for the certification and qualification of the Indigenous candidates with expectation they would become employed in sustainable vocations in the wider community or the Nhulunbuy mineral extraction operations. The reality was that at the close of 2009 few Indigenous people were working in the Nhulunbuy mining operations.

There were two other pertinent events in 2009. First, for the first time the mining company was able to provide single person fully messed accommodation for ALERT participants, which provided the opportunity to extend the applicant catchment zone beyond the local precincts of Nhulunbuy. Second, in 2009 the NT Department of Education and Training judged ALERT to be the most innovative education vocation scheme in the Territory. Unsolicited publicity by the media was followed by a flood of applicants from across the nation, particularly from larger centres in the northern half of Australia. These circumstances enabled the introduction of more stringent selection procedures, including a one week residential assessment workshop, and the realignment of ALERT into a work readiness stream and a work starts component, which contained applicants with higher educational and vocational competencies.

To bolster the number of qualified technical personnel at the refinery the mining company installed a competency based course for operators. At Nhulunbuy the VET refinery operator programme is an onerous interwoven tapestry of elements in which the successful participants experience a series of interactions, diverse experiences, and social norms to condition them to behave appropriately in regulatory work settings. Initially, the process would begin by the resident mining company inviting employees to register for a training course for operators. This VET scheme had been operating for a previous six occasion with each one for 12 candidates, but only three non Indigenous applicants had completed separate previously Development Pools as there was a lack of higher quality, genuinely relevant and essential job competencies held by Indigenous people. After examining all the applications a small select group were chosen and they travelled to Darwin (2 hour airplane trip) where they undertook a four hour recruitment and assessment workshop, and the successful candidates

would then return to Nhulunbuy where they were enrolled in an eight week training programme. Four weeks were classroom instruction and during a further four weeks the trainees were rotated across a number of work areas (e.g., Calcination, Hydrate, Materials handling, Plant services). On the conclusion of the eight weeks the candidates returned to their initial workplace where they remained until a job position became vacant in one of the work areas. If chosen by the members of the work area to join that team the candidate moved to a full time position as an operator in that team. When in this work team further comprehensive competency based training was undertaken within normal work activities to enhance task competencies relevant to that work area.

Five graduates of the June 2011 ALERT programme were the participants of the first dedicated Development Pool at Nhulunbuy for Australian Indigenous people. After completion of the ALERT work starts stream, and while employed at the Nhulunbuy refinery, eight of the candidates applied for the operator Development Pool course. These applicants were interviewed by the Capability and Development Team selected the Development Pool candidates. From a total of 48 interviewed applications eight of the Indigenous people received meritorious status, and this outcome became the first challenge for management, who had not expected the ALERT graduates to be successful. These eight Indigenous people air travelled to Darwin and when there they were interviewed by an independent professional body, who also administered a number of tests. Five of the Indigenous people (of this group of eight) were among the highest ranked of the total applicants for the operator Development Pool, and this result presented management with a second major challenge as the achievements of the Indigenous candidates were unexpected. Subsequently, a special course of six weeks had to be generated for the five Indigenous candidates: three weeks class instruction and three weeks of job rotation across four work sites. Although there was no assurance of being employed in a sustainable job today all five Indigenous people are now employed in highly paid jobs as full time operators at the Nhulunbuy refinery. Next, is an account of the respondents and their responses when these five Indigenous operators were interviewed by the authors.

## **Investigative framework**

### **Respondents**

The five Indigenous respondents were from centres in the NT and Queensland. Each had applied, and subsequently, was invited to attend the June 2011 ALERT residential one week course at Nhulunbuy, obliging candidates pay their own travel costs while the

mining operator provides fully messed single accommodation. There were four men and one woman, and all successfully completed the Discovery Session 1 (DS1) (Pearson and Daff, 2011a) as well as the Discovery Session 3 (DS3) (Pearson, 2012b) assessments. One completion of this VET programme they were employed in low paid work at the Nhulunbuy refinery.

### **Site**

Mining operations, the Indigenous VET programme facilities, and the refinery, which provides employment opportunities, are in proximity to the remote town of Nhulunbuy. Alluvial bauxite ore that is mined on Aboriginal land near Yirrkala is transported the 15km from the crusher site to the refinery that is 12km west of the Nhulunbuy townsite. The refinery, which is also on Aboriginal land, has a capacity of 3.8 million tonnes per annum of alumina and employs a workforce of over 3000 employees. A priority of the ALERT programme is to improve the educational attainment, thus, the preparation of Indigenous people for sustainable vocational careers in the Australian mining industry; preferably in the Nhulunbuy resource extraction operations.

### **Procedure**

During the one week residential workshop the candidates were assessed for their employability and given a supervised orientation of the mine site, the refinery and Nhulunbuy town site. An estimate of employability was obtained by administration of the DS1 and the DS3. Administration of DS1 required candidates to complete six tasks and the DS3 obligated the Indigenous person to actively participate in four team events. As a task was completed three individual aptitudes (e.g., special cognitions, working memory, deductive reasoning) were assessed by an observer from the displayed behaviours of the participants. Written English literacy skills and numeracy competencies were not evaluated as the DS1 and DS3 was administered orally. Out of class tours of mining operations and the town was done to give ALERT candidates an appreciation of the wide range of sustainable vocations that were available in the region.

All five respondents commenced the VET work starts stream of ALERT in their second week at Nhulunbuy. While there is a wide range of training programmes and a plethora of subjects in the Australian VET system in remote regions the availability of units/subjects is restricted. One restriction is what the RTO can deliver, and a second restraint is a choice offered by the host, in this instance the mining operator. Candidates were enrolled in a Certificate I in Resources and Infrastructure

Unit Code	Description
• RIIGOO1A	Work safe and follow OH&S policies and procedures
• RIIGOO2A	Communicate in the workplace
• RIIGOO3A	Contribute to quality work outcomes
• BSBCMN215A	Participate in environmental work practices

The four common elective units, that were also completed, are listed.

• RIIGOO4A	Conduct local risk control
• RIIG2OO1A	Plan and organise work
• RIIG2OO3A	Use hand and power tools
• RIIG2OO4A	Operate small plant and equipment

Operations, and all of the Indigenous people completed four mandatory subjects and five elective units. The four mandatory units are listed.

These units were delivered in Nhulunbuy at the TAFE centre and the ALERT education facilities. Funding was provided by DEEWR for the two mandatory units and four elective units. Other units were paid by the mining operator at \$500 per unit per candidate.

After completion of the ALERT programme the five Indigenous respondents attended a graduation ceremony and were invited to accept a work opportunity at the refinery. Their application to and transition through the operator Development Pool programme has been previously described. Subsequent to these events each candidate was individually interviewed by the authors to gauge their impressions of the processes experienced by these five Indigenous people as they were pathfinders for following Indigenous ALERT participants.

## Measures

Two types of data were obtained. First, in addition to the successful completion of the nine VET subjects, there were quantitative data from the aptitude assessments of the Discovery Sessions. Each aptitude was assessed with seven, seven point interval scales. There was one, seven point Likert scale; and six, seven point bipolar scales. For DS1 the scores ranged from 126 (6x3x7x1) to 882 (6x3x7x7), and for DS3 the range was 84(4x3x7x1) to 588 (4x3x3x7). Candidates were ranked to provide helpful information that could be coupled with other observational knowledge when deciding career path planning of the ALERT candidates.

The second data were responses from the interviews. The candidates were asked five questions (Q1-Q5):

Prior to being invited to join the ALERT programme what were you doing.

Why did you decide to become a refinery operator?

Explain your experience when you attended the Darwin selection process.

What features of the Nhulunbuy operator development pool programme has left a lasting impression.

Any message you would give to another Indigenous person who asked you should they apply to enter the Nhulunbuy operator development pool.

## Analysis

Quantitative data were obtained from the observed behaviours of the candidates as they performed the individual or team DS tasks. A summed total and an arithmetic mean was obtained for each of the aptitudes (DS1 = 18, DS3 = 12). Also a total score for all the aptitudes was provided. These data were evaluated with SPSS version 20.

Qualitative data were obtained from the interviews. The responses were recorded and a manual content analysis was performed to provide an overview of the respondent perceptions (see Pearson and Chatterjee, 2004: 435-436).

## RESULTS

Table 1 provides a profile of the five Indigenous respondents. Brisbane is the capital of Queensland and Darwin is the capital of NT. Bundaberg is relatively large centre, but both Yarrabah and Dhalinybuy are isolated remote Aboriginal communities of less than 100 people, which lack infrastructure and provide poor employment prospects. The DS scores and ranks show the Indigenous applicants from these Aboriginal communities had lesser average vocational and educational competencies.

In addition to the eight (4 mandatory and 4 elective) VET units the ALERT candidates also completed at least one other VET unit as well as in house requirements. All participants completed the DEEWR unit of HLTFAIA Apply based first aid (Delivered by St Johns as the RTO), and some participants received instruction by CDU the RTO for the VET unit of ICAITU128A Operate Personal computer.

These two units of instruction were provided at the ALERT training facility for General Induction. This

**Table 1** Profile of the respondents

Subject #	Gender	Age years	Origin	DS Scores/Ranks	
				1	3
1	Male	22	Bundaberg Qld	748/1	526/2
2	Male	22	Yarrabah Qld	602/4	502/4
3	Female	21	Brisbane Qld	695/2	514/3
4	Male	36	Darwin NT	541/5	549/1
5	Male	37	Dhalinybuy NT	671/3	500/5

Note. DS = Discovery Session, Qld = Queensland, and NT = Northern Territory.

accreditation enabled candidates to enter the Nhulunbuy refinery or the mine site under supervision. The General Induction unit included instruction in the topics of,

- a) Electrical safety awareness
- b) Manual handling
- c) Chemical awareness

After appointment to a workplace team as a refinery operator the five Indigenous employees are subjected to a further two year training plan. This programme, which is a comprehensive course of study with accredited outcomes, is a part of the industry Enterprise Bargain Agree and is awarded as a Certificate 3 and/or Certificate IV. All five Indigenous candidates are engaged in this programme of specific workplace skills.

There were five interviews each of one hour duration. One interview was conducted by telephone as the interviewee (employed on fly in fly out) arrangement was in another state, and four interviews were face to face. The responses were recorded and summarised as Table 2.

## DISCUSSION

In this paper primary data are presented to reveal partnerships between RTOs, industry and Indigenous people can lead to positive work life interference. Although the sample size is small the paper content humanises the story to show partnerships in VET can make a significance difference in the lifestyle of Indigenous people who otherwise were destined to remain in low paid circumstances. Often impersonal larger sets of secondary data are used for the convenience of detecting significant changes with traditional statistical tests, which swamp the personal accounts of life cycle events (Keating, 2009; Pocock *et al.*, 2011).

Literacy and numeracy skills are framed as foundation elements of Australian VET programmes (Black and Yasukawa, 2011), but these competencies were not prominent in the selection of ALERT participants.

Considerable evidence has been presented to demonstrate Australian Indigenous people are linguistically and numerically disadvantaged compared to other national groups (Bradley *et al.*, 2007; Kral, 2009; Pholi, Black and Richards, 2009). Understandably, the participation of Indigenous people in mainstream jobs in Australian society, and particularly in the minerals industry, is impeded by traditional recruitment procedures that assess intellectual abilities with instruments requiring demonstration of competency in English literacy and numeracy (Hughes, 2008; Pearson and Daff, 2010). Substituting discriminatory recruitment practices with an oral, acultural instrument identified the work related potential of Indigenous candidates with modest formal Western education levels and industrial vocational experience.

An unique feature of the Nhulunbuy VET programme has been the inaugural appointment of Indigenous refinery operators. The mining and refinery operations were commissioned in 1972 and it has taken 40 years for Indigenous people, despite the Aboriginal clans owning the mining reserves, to have an opportunity for substantial careers with substantive earnings. To account for this condition VET qualifications as well as the required certifications connected with government regulations, business compliance, and legislative statutes have not been possessed by Indigenous people on the Gove Peninsula. Consequently, most Aboriginal people in the region have been amongst the lower paid workers (i.e., unskilled and labouring jobs, CDEP, welfare) (Jordan and Macec, 2010) despite Nhulunbuy having the highest per capita income in the NT. While the Indigenous participants may have struggled to adapt to the learning needs "... that arise as a result of language and cultural differences ..." (Wallace *et al.*, 2008: 76) their development and aspirations have been profoundly acknowledged in the interview responses.

Responses to the interviews are flavoured by circumstances of the dominant Australian market economy values, and the fundamentally different customary Australian Aboriginal culture. The latter has an

**Table 2** Summary Responses to the Interview Questions

Q1- Q5	Comments
1	Low paid work, labouring, low skilled jobs (e.g., airport baggage handler), Community Development Employment Programme (CDEP), unemployed
2	<ul style="list-style-type: none"> <li>• A life changing experience</li> <li>• Had an ambition to succeed</li> <li>• A gender barrier to be broken</li> <li>• A chance to do new things</li> <li>• To make my family proud</li> <li>• Wanted to be judged as a worker not a female</li> </ul>
3	<ul style="list-style-type: none"> <li>• A team that we wanted to succeed, but knew only five could</li> <li>• To get the job you had to compete</li> <li>• Had a number of tests to do</li> <li>• Only one of us had been to Darwin before so we got up at 5.00am and walked to find the assessment centre</li> </ul>
4	<ul style="list-style-type: none"> <li>• Many challenges and now doing worthwhile work</li> <li>• Learned a lot from many people</li> <li>• Now get a good salary and can help my family who are proud of me</li> <li>• People in the team were great mentors</li> </ul>
5	<ul style="list-style-type: none"> <li>• Be proactive, it is a man's world, but have a go and be proud of your achievements</li> <li>• Find out what you want to do in life and do not give up</li> <li>• Key your eye on the ball and have confidence to win, but be honest to family</li> </ul>

emphasis on mutual obligation. On the one hand, the respondents acknowledged they were engaged in a capitalist labour market requiring them to deal with mainstream community institutions and processes. These notions are reflected in comments of being individually challenged, to become successful, and to do worthwhile work, yet seldom has it been recorded

Aboriginal communities have voiced aspirations of going to school to get an education in preparation for a working career (Guenther, 2008; Hughes and Warin, 2005). On the other hand, "Indigenous Australia is culturally and linguistically diverse" (Anderson, 2007: 139), and these strong cultural continuities are reflected in responses constructed around reciprocation and blood line connections

of kinship and family (Foley, 2006; Altman, 2002; Muir, 2012). Expectedly, the contemporary relevant literature records VET is strongly linked to employment. Associated listed outcomes are expressed as learning satisfaction, work force participation, skills acquisition, and increasing productivity



(Mitchell and McKenna, 2008; *NCVER*, 2007). Seldom were these attributes prominent in the responses of the interviewees, who gave greater emphasis to cooperative learning environments, trust building, social capital enhancement, and mutual obligation to family and extended groups. These elements are personal whereas VET outputs are more likely to be framed narrowly as impersonal dimensions of employment, skills, academic achievement or work performance (Guenther, 2008; Smith, 2010; Lambert, Vero and Zimmermann, 2012). A salient finding of the work reported in this paper is VET facilitated educational and vocational improvement for the five Indigenous respondents, but their historical and cultural roots secured greater exposure to a wider sphere of complex social issues.

## CONCLUSION

The minerals industry is a key contributor to the Australian economy. Mining corporations operate with finite resources, the industry is extensively controlled being intimately connected with government regulation, and the operations are highly consumptive in terms of economic funds as well as qualified/skilled/certified human capital. The importance of the human resources, both as employees and contractors, is linked to the mining operations that are amongst the most technologically advanced of all heavy industries. Operational and strategic issues for mining operations in Australia are further exacerbated by the location of the ore extraction/refining activities.

Australian mining is mainly undertaken in remote regions of the nation. A great deal of these operations is near Indigenous communities, where except for mining work, there are limited employment options. Yet relatively few Indigenous people at these places possess the educational qualifications or the vocational certification to be employed in the mining/refining operations. And while mining corporations embrace strategies to acquire a suitable workforce such as external employees by long distance commuting, or local workers by building new towns or refurbishing existing hamlets, negotiated land use agreements compel attention to training and employment while voluntary training of Indigenous people has financial benefits. Collectively, these disparate components heighten the promotion of VET programmes for Indigenous people.

At remote regions of Australia VET programmes for Indigenous people are unlikely to be impediment free. Widely reported is the low base levels of English literacy and numeracy competency, a lack of work fitness from substance abuse, inadequate vocational experience, poor work habits, and unreliable attendance are barriers for VET programmes designed to facilitate transition of Indigenous people to the workplace. A discernible

practical barrier is at remote centres the TAFE facilities and infrastructure is likely to be confined, obliging the VET participants to travel to geographically distant larger suburban centres and become residential students at better equipped centres of learning. Not only is this a considerable cost to the mining operator, but Indigenous families are reluctant to have their siblings (irrespective of age) removed from their care. Sustainable Indigenous VET programmes in remote regions are likely to be closely aligned with family support mechanisms and considerable pastoral care afforded to the participant.

A significant challenge for Australian Indigenous people enrolled in VET programmes is how to blend educational accreditation, specialised vocational skills and technical regulatory understanding as well as cultural continuities. In addition to political, social and environmental global issues the Australian mining industry depends heavily on technological transfer and is reliant on versatile, better educated and extensively trained personnel. The recent extensive expansion of the Australian minerals sector has outstripped the national ageing skilled workforce, the use of foreign skilled labour has become problematic, and endeavours to reduce the shortfall by facilitating the transition of Indigenous people into mining workforces by VET programmes has identified a number of problems. In addition to the previously nominated personal work related impediments there is considerable obscurity with the universal notion Indigenous people will be economically and socially integrated with the dominant Australian society. Aboriginal people living in remote regions of Australia are engaged in a fundamentally different customary economy. In these regions the Indigenous people are outside the mainstream religions and experience alternative spiritualities particularly relevant to their ancestral lands to which they hold strong environmental activism. Demonstrated in this paper is despite a disparate range of obstacles the VET programme was instrumental in enabling five Indigenous people to pathway to a better future by melding their customary heritage with the dominant Australian market economy.

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