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Section D: Research

Verbal Reasoning Abilities of Aboriginal and Torres Strait Islander Tertiary Applicants

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Introduction

The data reported in this article were collected in 1990 and 1991. To determine if verbal reasoning abilities for Aboriginal and Torres Strait Islander tertiary applicants have changed over the years, data for a more recent group of applicants were examined. Data from a sample of 100 Aboriginal and Torres Strait Islander tertiary applicants for 1994, 1995 and 1996 were subjected to analysis.

In the more recent data, it can be seen that the mean number of correct responses for verbal reasoning and verbal classification has increased slightly. In contrast, the mean number of correct responses for verbal analogies has decreased, with very little change in the same or opposite category.

To determine whether any of the changes were significant, t-tests were carried out. All four tests were statistically non-significant, although the difference in the verbal reasoning category approach significance ($t = 1.70$, $df = 182$, $p < .091$).

While there has been some slight improvement in verbal reasoning abilities for Aboriginal and Torres Strait Islander tertiary applicants across the two samples, the data still suggest that a substantial number of Aboriginal and Torres Strait Islander students will experience difficulty in coping with

the linguistic demands of a tertiary education system not known for its ability to cater for or cope with diversity.

The verbal reasoning abilities of 84 Aboriginal and Torres Strait Islander tertiary applicants were examined utilising the Australian Council for Education Research (ACER) ML test. Based on previous findings that Aboriginal and Torres Strait Islander people use a form of English which differs in its phonetic, phonemics, grammar and vocabulary from Standard Australian English, it was expected that differences in verbal abilities (as measured by Western standards) would emerge with Aboriginal and Torres Strait Islander students. These expectations were confirmed, with 66.7% of Aboriginal and Torres Strait Islander tertiary applicants performing at or below the 49th percentile when compared with the normative sample based on 15-year-old school-leavers. Consequences of these verbal reasoning differences in a tertiary environment are considered, together with suggestions that greater attention must be paid to the development of verbal reasoning skills if Aboriginal and Torres Strait Islander people are to be able to compete successfully in a Western educational environment.

As part of the National Aboriginal and Torres Strait Islander Education Policy (DEET, 1989) endorsed by Commonwealth and all State and Territory Governments, four main goals have been identified:

- to ensure Aboriginal involvement in educational decision-making
- to provide equality of access for Aboriginal people to educational services
- to raise the rates of Aboriginal participation in education to those for all Australians

- to achieve equitable and appropriate educational outcomes for Aboriginal people.

More specifically, in regard to higher education, concurrent efforts will be directed to:

- increasing Aboriginal participation in award courses as distinct from access and bridging courses, in technical and further education and in higher education
- achieving a broader representation of Aboriginal students across disciplines and courses of study in tertiary education
- raising the proportion of graduating Aboriginal students who commence technical and further education and higher education courses.

To these ends, the number of Aboriginal and Torres Strait Islander persons in higher education has increased markedly since the early 1980s from 854 in 1982 to around 3,300 in 1989 (DEET, 1990). Nevertheless, as the DEET Report notes, despite this growth the representation of Aboriginal and Torres Strait Islander persons in higher education in 1991 was still approximately half that of other Australians.

While efforts to increase and encourage the participation of Aboriginal and Torres Strait Islander people in higher education are admirable, particularly in light of the social and educational disadvantages they have suffered in the past, little attention has been paid to date to issues relating to the retention and achievement of Aboriginal and Torres Strait Islander students in a mainstream university environment.

Australian research summarised in the Australian House of Representatives Select Committee Report (1985: 24) suggests that academic achievements for Aboriginal and Torres Strait Islander persons remains significantly below those for the rest of the community, particularly in the areas of literacy and numeracy. These findings are in line with overseas research which suggests that academic success is very different for black and white students in higher education with attrition rates for black students being much higher than they are for whites (Tracey and Sedlacek, 1987).



Many factors have been proposed to account for these differentials in achievement including lowered self-esteem, traditional learning styles which differ from those used in European schools and society, negative early school experiences, home environments detrimental to academic learning, inability of parents to provide necessary assistance and support and western prejudices and stereotypes (Honeyman, 1986). Other authors such as Bostock (1981), Eades (1981), Christie (1985) and McGarvie (1986) have pointed out that while Aboriginal and Torres Strait Islanders speak a language similar to Standard Australian English, they follow different rules of use, in that its phonetic, phonemics, grammar and vocabulary differ from Australian English.

While all of the factors listed above can alone, or in combination, affect academic achievement, the fact remains that in contrast to traditional Aboriginal learning styles which tend to focus on mastering context-specific skills, a Western education system seeks to instil abstract context-free principles which can be applied in new, previously unexperienced situations (Australian House of Representatives Select Committee, 1985: 25). In a similar vein Harris (1982) contends that much Aboriginal learning is achieved by observation, imitation and trial and error, rather than through verbal instruction, and that Aboriginal and Torres Strait Islanders tend to learn context-specific skills rather than context-free principles which can be applied to any novel situation.

Christie (1985) contends there are three major differences between Aboriginal and non-Aboriginal learning. Firstly, he contends that in traditional Aboriginal learning, the role of language is reduced due to social, cultural and economic factors, and there is often very little need for recourse to verbal explanations. Secondly, he claims that this difference predisposes Aboriginal people to think and perceive in ways not constrained by the serial and sequential nature of verbal thinking. Thirdly, he asserts that in Aboriginal society, there is little need for formal education, as all learning necessary for effective participation can be gained through the day-to-day activities of the group.

While context-specific learning styles are undoubtedly appropriate within their own cultural environment, these styles do not appear to be associated with success in a non-Aboriginal education system. To master the skills necessary for success in a higher education setting, it is necessary for participants to possess well-developed analytical, problem-solving and verbal skills. As Schonell *et al.* (1962: 57) assert:

Abilities to reason and to appreciate fine discriminations are necessary in all university courses and verbal abilities generally play a predominant part.

The importance of verbal skills in an educational environment is further reinforced by Marland (1977: ix):

Learning, it is now clear, involves language not merely as a passive medium for receiving instruction, but as the essential means of forming and handling central concepts. Thus, learning is not merely **through** language but **with** language.

In a similar vein, the primacy of literacy and numeracy skills in a modern technological society are acknowledged by De Lacey *et al.* (1989: 54) who contend:

There are certain well defined skills which any individual in a modern society needs to acquire in his schooling and other social experiences in order to become employable and economically independent. These skills are mainly based on literacy and numeracy taught in mainstream schools. The principles of literacy, mathematics and science are universal, and school systems are not renowned for making substantial changes at the behest of small and powerless minorities.

The purpose of the present study was to examine the verbal reasoning abilities of Aboriginal and Torres Strait Islander tertiary applicants to the University of Southern Queensland (USQ). This was intended as a diagnostic exercise, firstly to determine applicants' current level of verbal reasoning skills and secondly to establish to what extent verbal ability is related to academic progress in a tertiary environment for Aboriginal and Torres Strait Islander students. Only the first aspect will be considered in this paper. The decision to utilise a test of verbal reasoning ability was based in part on previous evidence that many Aboriginal and Torres Strait Islander students experienced difficulties in this area which were likely to affect their academic progress.

A third factor was that statistics collated by the Office of Aboriginal and Torres Strait Islander Education indicated that the retention and progression rates for Aboriginal and Torres Strait Islander students were considerably lower than levels for mainstream students. For example, an analysis of 1990 results indicate that the overall mean progression rate for the 100 Aboriginal and Torres Strait Islander students enrolled at USQ was 45.43% (progression for the purpose of this paper is defined as the number of units passed as a percentage of the number of units enrolled in). When cancellations, deferments and transfers are taken into account (N=37), the progression rate climbs to 61.99%, but this rate is still significantly below desirable levels.

Entry Procedures for Aboriginal and Torres Strait Islander Students

The entry procedure for Aboriginal and Torres Strait Islander students at USQ is largely through direct application to the Office of Aboriginal and Torres Strait Islander Education (OATSIE). Only a small number (less than 10%) would have Tertiary Entrance (TE) scores (used at the time of this study, in 1990) which would qualify them for entry through the mainstream Queensland Tertiary Admission Centre (QTAC) system. Applicants attend a selection interview which for the first time in 1990 incorporated the use of ACER ML and MQ tests. As explained earlier, these tests were used for diagnostic and not selection purposes. In reality, the large majority of persons applying for direct entry are offered a tertiary place. Prior to the commencement of the academic year, the new intake of students undertakes a three-week preparatory course which attempts to give students some of the skills necessary for survival in the



tertiary system. Upon completion of the preparatory course, Aboriginal and Torres Strait Islander students commence mainstream studies in schools such as Management, Accounting and Finance, Arts, Applied Science, Education, Engineering, and Information Technology.

As this study was largely exploratory, no formal hypotheses were developed, although based on work by Bostock (1981), Eades (1981), McGarvie (1986) and the Select Committee Report (1985) it was expected that the mean verbal reasoning scores for Aboriginal and Torres Strait Islander applicants would be significantly lower than those of a mainstream sample.

Method

Subjects

The data reported in this study are based on those provided by 84 Aboriginal and Torres Strait Islander tertiary applicants. The mean age of the applicants was 26.04 years, with 33 males and 51 females participating. The background environment of the applicants varied, with representation from traditional, rural, semi-urban and urban areas throughout Queensland and the Northern Territory.

Materials

The ACER ML test was used in this study. This test is primarily intended as a measure of general scholastic ability in the prediction of achievement in school, counselling, training and for other purposes where the ability to think clearly with words is involved and in situations which involve a high level of demand on reasoning ability (ACER, 1981). The test is intended for use with students in Year 9 or higher, with norms being provided for secondary school students aged 15 years and first-year TAFE students. The test consists of 34 items and these break down into four sub-categories, including Verbal Reasoning (10 items), Verbal Analogies (7), Verbal Classification (9) and Same or Opposite (8) items. The test is normally timed, with subjects being allowed 15 minutes to complete the test; however, as the test was being used for diagnostic purposes, no time stipulation was imposed with this sample.

Procedure

The test was administered to applicants in a variety of locations throughout Queensland, normally prior

to or after their interviews during November and December 1990. Applicants were normally tested individually, and prior to proceeding with the test, a practice page of questions was completed and checked to ensure that applicants understood the types of questions which would follow. Subjects then proceeded at their own pace to complete the test.

Results

The mean proportion of correct responses for each question, together with standard deviations, indicated that 22 of the 34 questions attained a correct response of less than 50%. It was also noted that the performance level in the latter half of the test appeared to be considerably lower than that in the first half.

A second analysis sought to group items into their sub-categories. Again, an examination of the results indicated that for Verbal Reasoning, Verbal Analogies and Same or Opposite sub-categories, the mean correct response was less than 50%.

A further examination of the scores indicated that 66.67% of respondents obtained a total score of 17 or less. Norms provided for the ML test indicate that a raw score of 17 falls at the 49th percentile (ACER, 1981).

Discussion

The purpose of this study was to examine the verbal reasoning abilities of Aboriginal and Torres Strait Islander tertiary applicants. Past studies suggest that well-developed analytical, verbal and language skills are a crucial element in successfully undertaking tertiary studies (Schonell *et al*, 1962; Marland, 1977).

The more interesting results from the point of view of support personnel working with Aboriginal and Torres Strait Islander students indicated that two-thirds (66.7%) of Aboriginal and Torres Strait Islander applicants were performing at or below the 49th percentile compared with the normative sample based on a 15-year-old group (ACER, 1981). When one considers that the test was untimed, the scores obtained are probably inflated compared with what would be achieved under normal timed test conditions. These results lend support to the

tentative hypothesis that differences in verbal reasoning abilities (as measured by Western standards) would emerge with Aboriginal and Torres Strait Islander students.

While the actual percentage of a population capable of successfully undertaking a tertiary course is uncertain, the finding that two-thirds of the Aboriginal and Torres Strait Islander sample scored below the 50th percentile (compared with a normative, timed sample) is a cause for some concern, and suggests that many Aboriginal and Torres Strait Islander applicants experience difficulty in coping with Western verbal concepts. The extent of this difficulty may, in part, be reflected in lowered progression and retention rates for Aboriginal and Torres Strait Islander students.

Results showed that the source of difficulty does not reside in any particular area but is evenly spread across Verbal Analogies, Verbal Reasoning, Verbal Classification and Same or Opposite type questions. This is indicative of general, rather than specific, verbal difficulties.

Interestingly, the proportion of correct responses decreases as one proceeds further into the test. This result is in line with the general construction of spiral omnibus tests such as the ML test whereby item difficulty tends to increase in the latter part of the test (Anastasi, 1976).

Aboriginal and Torres Strait Islander students enrolled at USQ undertake studies in both the internal and external modes. The breakdown for 1990 was 62 studying internally and 38 studying externally. Although it could be argued that the majority of these students are not from traditional backgrounds and should be familiar with non-Aboriginal educational concepts, it would appear that many experience difficulties when dealing with the formalised, decontextualised analytic and linguistic expectations and codes encompassed in tertiary level education. As Langlands (1988) observes, even where little traditional culture appears to remain, Aboriginal people still rely mainly on oral language for interpersonal and inter-community communication. This cultural preference, while important in maintaining relationships, does not appear to be valued or conducive to academic achievement in a mainstream educational setting.

The use of a test such as the ACER ML is open to claims that it is culturally unfair. This claim is not disputed and indeed, the manual warns that its

use may be inappropriate with some cultural groups. However, as Anastasi (1976) points out, when an individual must adjust and compete within a culture different from the one in which he/she was reared, then cultural difference is likely to become cultural disadvantage. Similarly, Christie (1985) states that educating Aboriginal people through formal schooling is largely a matter of imposing a Western world view upon the Aboriginal one. While the perceived necessity for one set of cultural values to dominate equally legitimate cultural alternatives is regrettable in many ways, the fact remains that currently, in order to achieve within a non-Aboriginal education system, Aboriginal and Torres Strait Islander people will be required to adjust to the values and pedagogical dictates of the dominant culture.

If Aboriginal and Torres Strait Islander people are to be encouraged to participate and achieve in a non-Aboriginal Higher Education setting, it is essential that they be provided with adequate preparation in the verbal, abstract reasoning and problem-solving skills necessary to survive. Evidence provided in this paper indicates that many Aboriginal and Torres Strait Islander tertiary applicants experience difficulties in these areas which will lead them to discontinue studies, or significantly impede their academic progression. In order to overcome this problem, it is suggested that appropriate bridging or preparatory programs be developed to operate in conjunction with award courses to provide Aboriginal and Torres Strait Island persons with a realistic chance of succeeding in an often alien, culturally-unfriendly and unfamiliar education system. Without this added input, it is highly likely that we are repeating past mistakes and setting people up for failure.

It is realised that the recommendation for appropriate tertiary bridging programs runs counter to the current direction of National Aboriginal and Torres Strait Islander Education Policy which, despite its idealistic philosophies, operates to mainstream Aboriginal and Torres Strait Islander students and ignores basic cultural and language differences. Criticism of bridging courses as outlined by Keeffe (1990) are also noted; however if one is concerned with outputs and outcomes as Keeffe suggests we should be, it is necessary to ensure that students are adequately prepared to cope with tertiary study. Bridging or preparatory programs conducted in conjunction with mainstream courses are a means of introducing

tertiary concepts, expectations and the elaborate language codes necessary for survival in a university environment.

Data presented in this paper suggest that many Aboriginal and Torres Strait Islander tertiary applicants experience difficulty in coping with the verbal reasoning and language concepts embodied in a non-Aboriginal educational curriculum. As it is highly unlikely that tertiary institutions will move to accommodate language differences or diversity, it will be necessary to broaden and develop the language and verbal reasoning skills of Aboriginal students to allow them a realistic chance of achievement in a Western educational setting.

Conclusion

The purpose of this research has been to examine the current language and verbal reasoning skills of Aboriginal students applying for or intending to undertake tertiary studies. It is not intended as, and should not be interpreted as any measure of general intelligence. The research has stemmed from a recognition that the linguistic and conceptual demands of tertiary education are often alien and unfamiliar to many prospective Aboriginal and Torres Strait Islander students and differ markedly from what is appropriate in their own culture. It is difficult to succeed in any game when its rules, expectations and requirements are not well understood. Again it is argued that bridging or preparatory units offered in conjunction with mainstream units are a means of redressing many problems Aboriginal students face in adjusting to, and succeeding in, a tertiary environment.

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