

**Bridging the gap: Identifying needs and aspirations of Indigenous students
to facilitate their entry to university**

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Delwar Hossain, Research Fellow, University of Southern Queensland (USQ) has twenty six years of research and teaching experience. He has more than two-dozen of research publications.

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ABSTRACT

The negative trend of enrolment of Indigenous students into tertiary study indicated gaps between their current achievement and knowledge levels and university requirements for admission. This study was designed to determine the perceived needs, attitudes and knowledge of Indigenous secondary school students when considering admission to university; investigate remedial strategies in order to make university a more attractive choice for Indigenous students; and ascertain the types of assistance and support the Indigenous students would like to receive in order to meet the enrolment requirements as well as completion of study at university.

Focus groups were conducted with 50 Indigenous students in years 10 to 12 within the Toowoomba District and surveys conducted with 30 first year Indigenous undergraduate and Indigenous Higher Education Pathways Program (IHEPP) students at University of Southern Queensland.

The findings of the research included that the school students were not aware of the IHEPP and university programs. Scholarships and bursaries need to be developed and publicised. Tutorial assistance, learning support e.g., assignment preparation, multicultural activities, childcare facilities, group accommodation, needs to be promoted. Furthermore, there is a need for the university to establish and maintain relationships with local Indigenous communities and understand the 'cultural dimension' impacting on Indigenous students and their families.

Bridging the gap: Identifying needs and aspirations of Indigenous students to facilitate their entry to university

INTRODUCTION

The enrolment of Indigenous students at national level is decreasing. Universities across the states are continuously striving to provide support to Indigenous students, however, the enrolment status continues to decline. For example, during the period of 2004 and 2005 the declining rate of enrolment at national sector and USQ were 6 and 17 percent respectively (USQ, 2007). This trend questions the viability and effectiveness of aspects of assistance initiatives. It is imperative reasons for the decline in student numbers are identified in order to improve recruitment and support retention. This study has been initiated with this goal in mind.

This study aimed to identify the reasons for the gap between current achievement and knowledge levels for Indigenous students and university requirements for admission at one university, the University of Southern Queensland. This information will in turn foster greater understanding of the factors influencing Indigenous enrolments at this institution, and allow the university and the Indigenous support services to develop and enhance recruitment, retention and student support mechanisms to address the issues.

The reasons identified by participants in the study include the gaps between the achievement level of the students at schools and their admission at university; motivation of the students, parents and community; financial hardship; lack of information about university programs

and support services; availability of other opportunities such as apprenticeships and traineeships; encouragement to participate in vocational education programs “learn as you earn”; and much more.

Specific objectives: determine the perceived needs and attitudes of Indigenous secondary school students when considering admission to university from an entrance requirement perspective; investigate remedial strategies in order to make university a more attractive choice for Indigenous students; and ascertain the types of assistance and support Indigenous students would like to receive in order to achieve the appropriate standard for enrolment as well as completion of undergraduate programs at university.

Theoretical foundation

McRae et al. (2000) has narrated an overview of major policy and programme contexts and initiatives relating to the improvement of outcomes for Indigenous students. They asserted that the development of the Indigenous Education Strategic Initiatives Programme (IESIP) and IESIP non-capital strategic results projects examining key transition points (e.g. school to post-school options in vocational education and training, higher education or work, etc) as valuable initiatives aimed at developing concrete strategies to assist Indigenous students with being successful with post compulsory educational opportunities.

James (2002) in his study on the school students’ aspirations and expectations concluded that financial obstacles to university entry or even the perceived costs associated with higher

education contributed to the lower participation of the students in higher education. Alloway et al. (2004) in their study dealing with factors impacting on student aspirations and expectations in regional Australia found that students believe that financial considerations might hinder their aspirations. For most rural students and their parents, the likely cost involved in pursuing aspirations, especially where students must leave town to pursue higher levels of education and training, was a persistent concern. 'The final reality for students was the realisation that fulfilment of their aspirations and expectations was bound inevitably to their capacity to finance them' (p.262).

Eltchelebi (1999) highlights the importance of counselling, social support and transitional programs for high school students. Crump (2001) also believes that it is imperative for counsellors working with Indigenous students to have knowledge of the negative impact of overgeneralisations and stereotyping, specific information and cultural issues.

A lack of family support, career guidance (poor quality or difficult to access) and achievement levels, as well as "entrenched racist attitudes in a number of communities" were identified as key barriers to achieving their aspirations. Another factor that the vocational education career pathways has also gained popularity amongst Indigenous secondary students in recent years and the reasons for growing levels of participation in this area are explored in Miller's (2005) review of research. He affirms that the successful outcomes for Indigenous Australians are met through such strategies as extensive student support services and quality staff and committed advocacy.

The transition from high school completion or employment to undergraduate status is stressful for any student, and perhaps more so for Indigenous students who often do not have a direct knowledge or understanding of what tertiary study entails or the long-term social and economic benefits of this educational pathway.

Kippen et al. (2006) investigate the factors influencing access, participation, retention and outcomes for Indigenous students enrolled in health courses in a rural setting – their findings reveal that both university and wider community issues can either encourage or impede student success. The authors state that some issues (distance, family commitments and financial constraints) are widely recognised, however other factors come into play. These include “negative past experiences, lack of role models, lack of information about courses, limited supports, culturally inappropriate learning environments and institutionalised racism”.

Bourke et al. (1996), DiGregorio et al. (2000), Farrington et al. (1999), and Sonn et al. (2000) discuss the importance of actively offering ongoing academic, personal and cultural support to Indigenous students who have made the transition to mainstream higher education.

METHODOLOGY

Design of the Study

This was a survey designed to determine the needs of Indigenous students. The first phase was conducted via focus groups with Indigenous students in years 10 to 12 within the Toowoomba District to understand their perceived needs and attitudes to enrolling at university.

In phase 2, first year Indigenous university undergraduate and Indigenous Higher Education Pathways Program (IHEPP) students were surveyed to ascertain the types of assistance and support they would have liked to have received in order to meet the enrolment requirements, as well as to complete their study programs at university.

Recruitment of Participants

Phase 1: Focus Group Sessions with High School Students

Five secondary schools in Toowoomba were purposely selected for inclusion in this study. The District Education Office granted approval for the state high schools to be involved in the study while two private Colleges approved involvement for their staff and students.

Indigenous students in years 10, 11 and 12 from each of the selected schools were invited to attend the focus group sessions which lasted more than an hour each. A total of 18, 15 and 17 students from year 10, 11, and 12 respectively participated in the focus groups. The facilitator was of Indigenous descent and began each session by welcoming and

acknowledging the staff and students for taking time to come and participate in the focus group.

As per the Indigenous culture and tradition the facilitator proceeded to introduce herself to the participants and then asked them to respond to the sets of questions in turn. The students were informed that their responses would be recorded, but that all identifying information would be removed.

Phase 2: Survey of Indigenous University Students

Of the 52 first year Indigenous IHEPP and undergraduate students enrolled in 2007, 42 participated in the study. This list of students was generated by the university admissions office.

The survey instrument contained both open and closed questions arranged systematically in plain English language to be understood easily by the respondents.

The instrument contained 34 items concerning the six aspects of needs (academic information, economic information, social information, academic support, economic support and social support) for Indigenous students at pre and post level of enrolment at university.

The respondents indicated their perceived needs about each of the items on a five point Likert-Type-Scale (1= no need, 2 = little need, 3=some need, 4= substantial need and 5 = urgent need).

Based on the comments and suggestions made by the team, 19 of the original 50 items were deleted and certain items were modified and/or reorganised. Cronbach's alpha (α) procedure was used to obtain reliability estimates of the items in the instrument (Cronbach, 1951; Santos, 1999). The reliability of the instrument was calculated on the basis of items addressing academic information, economic information, social information, academic support, economic support and social support related needs of the Indigenous students. The reliability coefficients for the six aspects of needs were .95, .91, .94, .93, .90, .95 respectively. The overall reliability coefficient was .98. According to Borg (1981) the reliability of this instrument was very high and acceptable.

One set of mailing labels for all the first year Indigenous students was obtained from the admission office. A package containing a cover letter explaining the purpose of the study, the questionnaire, and a stamped envelope addressed to the researcher (coded for follow up purposes) was sent to each student. Potential respondents were assured that their replies would be kept confidential; they were encouraged to complete and return their questionnaire in 10 days. The response rate from the first mailing was 38% (16). Ten days later, reminder letters along with thank-you notes were mailed to all potential participants. The response rate increased to 57% (24). A second instrument and a return-addressed stamped envelope were sent to 19 non-respondents, with a cover letter urging them to return their questionnaires and the response rate increased to 71% (30). The researchers also made contact with potential respondents through emails and by phone to increase the response rate.

Some researchers (Clausen & Ford, 1947; Hossain, 1992; and Newman, 1962) have found that late respondents are often similar to non-respondents; thus one should determine the possible nature of the replies of respondents by statistically comparing early respondents to late respondents. In this study, respondents were dichotomized into those who responded early and those who responded late. These two groups were compared statistically to ascertain whether any difference existed between the groups. The researchers found no significant differences in the responses of the two groups. Thus the responses of Indigenous students have been considered the representative opinions of all the first year Indigenous students at the university.

Data Analysis

The qualitative data were analysed based on the established themes and the quantitative data were analysed using the SPSS 14.0 for Windows. Frequency counts and percentages, as well as means and standard deviations, were calculated for the descriptive data. T-tests were used to determine whether there were significant differences between the groups of students with regards to their needs, based on age and completion of year 12. The resulting differences in needs were tested for significance at 0.05 level of probability with an accompany 95% confidence level.

Ethics approval for this study was granted by the university's Human Research Ethics Committee.

Results

Phase 1: Perceived Needs of High School Students Relating to Enrolment

The qualitative responses of the focus group discussions on the perceptions, attitudes and difficulties and gap in knowledge relating to enrolment in programs at university held by Indigenous students in Years 10, 11 and 12 have been presented in the following sub-sections.

University as an Educational Pathway

The majority of students were able to demonstrate accurate knowledge of the role of universities. They indicated that universities were educational institutions which differed from TAFE in both the courses on offer and the types of career paths/professions catered for ... “TAFE is more ‘hands on’, uni is more about theory and University is harder to get into than somewhere like TAFE because at TAFE you pick what you are doing and you get into it”. Several responses indicated that studying at TAFE was regarded as a ‘soft option’ to university, due in part to the practical nature of content covered at this level. These included “(Uni) is different from TAFE, like higher than TAFE, ...I want to get a higher education...uni is just better I reckon and TAFE is more of a trade thing – it is easier to get into a trade than uni like woodwork or carpentry.”

Most respondents had not considered enrolling at university after completing year 12, with the prevailing reasoning relating to negative self-concepts – “I’m too dumb.” Several respondents were able to relate their knowledge of family members who had attempted

university study or were currently enrolled and in most instances; these students were mature-age.

The fact that vocational education offered the opportunity to “learn as you earn” was mentioned repeatedly as an important reason why so many Indigenous students chose this path.

Perceptions of Study at University

A critical factor influencing a negative perception of university study related directly to the financial outlay involved with the purchase of text books and payment of course fees and accommodation.

The higher academic expectation of university was seen as a deterrent to university study. Negative self-concept was again cited as a strong reason why Indigenous students viewed university study as an unpopular choice. As one participant put it “(Indigenous students) are scared of not succeeding like say they start it and if something gets in the way they just quit or if it gets too hard they just pull out.” It needs to be understood that even Indigenous students achieving at high school are often hesitant to ‘big note’ themselves and their achievements, preferring to maintain the status quo amongst peers by instead ‘dumbing down’ their successes. It was revealed from the discussion that Indigenous students in years 11 or 12 who are “breezing through” their work and consistently getting high marks are considering leaving school early and securing menial employment.

Racism and prejudice from university students, staff or other employees was also mentioned as a detracting factor when considering going to university.

Students also talked about the fact that they preferred practical learning tasks to the theoretical challenges posed at university, and that in some cases, they had simply had enough of study and that the pursuit of a vocational education pathway allowed them to do so. One student commented that “I also don’t want to think about enrolling in another 3 or 4 years of study straight out of high school...” Another student commented that “...for me, it’s the hands on I’d rather be doing practical work...you should find something you enjoy doing and I enjoy hands on jobs”.

Admission Requirements for University Entry

Responses to this set of questions revealed that most students were aware of the importance of attaining a good OP score to secure university entry to preferred courses, and that this study pathway, commencing in year 11 with the selection of appropriate board and school subjects was most commonly chosen by students wishing to enter university. One student indicated knowledge of ‘special entry’ arrangements for Indigenous people. Two responses mentioned the possibility of going to university ‘later on’ as mature-aged students.

One student exposed a different aspect of entry processes with his comment that “A good OP score will get you into uni, but you can also transfer into your first preference from somewhere else if you have a high enough GPA.” Two students also mentioned scholarships and cadetships as alternate paths for entry.

However, it is important to note that **none** of the participating students had any knowledge of the Indigenous Higher Education Pathways Program (IHEPP) ‘enabling’ program offered to Indigenous people seeking an alternate entrance pathway to university. One student did ask a

question about alternate entry pathways for Indigenous students "...can't Indigenous get in differently? Aren't there more options available for them? My sister wanted to use her Indigenous identity to get in too". Another student remarked that it was, "just too hard to find out how to get in". This indicates a lack of information about university assistance and support.

Life as a University Student

Students viewed university life differently. One student mentioned that "partying should be seen as an important aspect of university life". One student reflected that "uni is all up to you... if you don't want to do the work, no one cares about you". That is, they talked about the need for "commitment" and a responsible and mature attitude to study and doing assignments at university.

One participant stated that attending university is sort of the same as being a student at high school. "Like, it will be a bit harder obviously because these are harder courses that are setting you up for the workforce." The student commented that "there are only certain days that you have to come in like Tuesdays or Fridays and if you don't come in on those days you miss out on that lesson's work. They'll leave it up to you...won't chase you". Another mentioned that "they (lecturers) say well, these are your courses. This is where and when they are on and it's up to you if you turn up or not."

An underlying knowledge of having to be a self-directed learner at a higher level than high school was evident, with several students noting that success or failure at this level would

depend solely on the amount of effort given to studying. Completing assignments and doing presentations and exams were mentioned as typical responsibilities at university.

Things I'd like to see

The provisions of scholarships or bursaries to purchase text books were considered key incentives. The financial assistance, access to computers and the internet, good sporting and social facilities were emphasized by most of the students. It is also noted that the students had no idea about the existing assistance policy of the university. One student noted that "I'd need a scholarship where they pay for some of your stuff like textbooks or courses." Another student stated that "uni costs a lot of money too, and they take a lot of time to pay off and they can take it from your pay packet."

The students also talked about the importance of establishing and maintaining relationships with academic and general staff members and "knowing that someone is there if you need to talk". One student made the remark: "If I got into trouble or behind in my work, I'd want to talk to an Indigenous person, 'cause I know they'd understand me." Another student said that "I think the relationship between students and lecturers is important if you need help. Accessing them if you are having trouble would be good. Even if it is outside hours – flexibility is good."

Phase 2: University Students' Perceived Needs and Aspirations

Demographic Profile of Respondents

The age of Indigenous students ranged from 17 to 47 years; the average being 28.13 years.

The skewness and kurtosis were .48 and -.95 respectively. For analysis, the respondents were

categorised into two groups, 25 years & below (53%) and 26 years and above (47%) age groups. The majority of Indigenous students were female (87%).

More than two-thirds (70%) of the respondents were doing Bachelor degrees. Of these students 20% were studying nursing, 13% education, and 10% Business courses.

One-half (50%) of the students had completed year 12 and came from a range of high schools across the Australia. Those who did not complete year 12 were admitted through a range of ways such as completion of IHEPP diploma, certificate courses, Tertiary Preparation Program, QTAC and mature age entry.

Six broad areas of needs were considered. The needs were grouped into pre and post enrolment at university levels. The pre-enrolment needs were academic information, economic information, and social information. The academic support, economic support and social support needs were identified as post enrolment level. To understand the overall scores on the needs, one has to have an understanding of them.

Pre-Enrolment Needs

Academic information

The mean ratings of academic information ranged from 3.59 to 3.69, indicating substantial needs for specific academic and support service information sessions, information about the study requirements and commitment and information packages about pathways for Indigenous students at university for high school careers advisors. Five areas of academic information needs ranged from 3.24 to 3.28, indicating some needs for information for students, parents and interested community members on academic programs and support

services; and support in pre requisite mathematics and communication areas. The overall mean rating of academic information was 3.58, indicating substantial needs. The skewness of this distribution was -.78, this negatively skewed distribution indicated that the highest proportion of respondents was above the mean.

Economic information

The mean ratings of economic information needs ranged from 3.72 to 3.86, indicating substantial needs for information about fee free Indigenous Higher Education Pathways Program (IHEPP) for students who fail to achieve the required overall position (OP) score (prior to completion of Year 12) and information about financial costs associated with tertiary study (including the purchase of textbooks, accommodation etc). The overall economic information mean rating was 3.79 and the skewness of this distribution was -1.01, meaning the highest proportion of respondents was above the mean.

Social information

The mean ratings in this area ranged from 3.14 to 3.69, indicating substantial need for information sessions for interested community members about university support services (employment, counselling; information about on campus accommodation; arrangement for tours of campus to highlight facilities and services available for students); maintaining liaison and cooperation with schools (grades 10-12) to meet university requirements for admission, assessment of students' difficulty for admission at university; and maintaining potential student motivation (for example, mentoring, social activities). The overall social information need was negatively skewed (-.67) meaning more respondents were above the mean (3.50).

Post Enrolment Needs

Academic supports

The mean ratings of five academic supports ranged from 3.51 to 3.66, indicating the students substantially require the information on different courses offered by faculties at the university, staff support, tutorial assistance to improve academic performance, support services such as teleconferencing, telephone calls and computers. The overall mean rating was 3.58 (SD 1.18) and the skewness was -.45.

Economic support

The economic support (scholarship) and employment opportunities indicated a substantial need for them. The distribution was negatively skewed (-.58), indicating that the majority of the students felt these needs.

Social support

Except for the “Flexible options regarding Indigenous students’ grouped accommodation (upon student request)”, the mean ratings of social support needs ranged from 3.17 to 3.48, indicating some needs to continue study at university. The overall social support need was negatively skewed (-.49), indicating that more respondents were above the mean (3.51).

Overall Needs

Table 1 shows how the highest proportion of respondents (43%) indicated they urgently required the economic information at the pre-enrolment level, whereas 27% exhibited this need as substantial. The majority of the respondents (40%) indicated academic information as substantial whereas 40% illustrated some social information need at this level.

Again the majority (66%) of the students indicated that the economic supports are urgent and substantially needed to continue study at university as compared to academic and social support.

Table 1: Percentage distribution of respondents in phase 2 according to their responses to different areas of needs

Area of need	Level of needs of Indigenous students				
	No need	Little need	Some need	Substantial need	Urgent need
Academic information	7	20	13	40	20
Economic Information	10	10	10	27	43
Social Information	17	13	40	30	0
Academic support	3	20	17	30	30
Economic support	0	14	20	33	33
Social support	7	17	23	30	23

Pre-Enrolment Needs of the Students Based on their Age

There were no significant differences in pre enrolment needs of the two age groups.

Post-Enrolment Needs of the Students Based on their Age

The only difference in the post-enrolment needs of the two age groups was a higher level of need reported by the 25 years or below age group for academic support, and some socio-economic supports they require to continue their studies at university respectively.

Pre-Enrolment Needs of Students Based on their Completion of Year 12 or Not

Students who had not completed year 12 rated the following higher than students who had completed year 12:

- information about on campus accommodation,
- arrangement of tours of campus to highlight facilities and services available for students (e.g., sporting facilities, the library, Kumbari/Ngurpai Lag etc),
- liaison with schools (grades 10-12) to meet USQ requirements for admission,
- cooperation with schools to assess students' difficulty for admission at USQ,
- maintain liaison with schools to assess students' need at school for USQ support.

On the other hand, the students who had completed year 12 rated the following slightly higher than the students who had not:

- on campus accommodation,
- action by university staff to maintain potential motivation,
- arrangement of campus tour to highlight facilities,
- liaison with schools to meet university requirements,
- cooperation with schools to assess students' difficulty and
- maintain liaison with schools to assess students needs for support

Post-Enrolment Needs of Students Based on their Completion of Year 12 or Not

There were no significant differences in post enrolment needs of the two groups.

DISCUSSION

High School Students' Perceived Needs and Attitudes

The majority of high school students were able to indicate that universities are educational institutions which differed from TAFE in both the courses on offer and the types of career paths/professions catered for. Most of them had not considered enrolling at university after completing year 12, with the prevailing reasoning relating to negative self-concepts. Another critical factor influencing a negative perception of university study related directly to the financial outlay involved with the purchase of text books and payment of course fees and accommodation. On the other hand, vocational education pathway offered the opportunity to “learn as you earn” and this was mentioned as an important reason why so many Indigenous students chose this path.

Financial hardship was constantly reported as the key reason why Indigenous students did not view tertiary study as a preferred or viable option. They considered that the cost of resources and course fees would be too much for many families to cope with. The findings of previous studies conducted by James (2002) and Alloway et al. (2004) confirm that these economical constraints impact upon educational pathways chosen by Indigenous students.

As mentioned above negative self-concept was cited as a strong reason why Indigenous students viewed university study as an unpopular choice. Indigenous students are often hesitant to change and prefer to maintain the status quo amongst peers by ‘dumbing down’ their successes. Crump (2001), Craven and Marsh (2004) and Craven et al. (2005) confirm that negative self-concept is an instrumental factor in limiting education aspirations of Indigenous students.

Students also preferred to earn some money for themselves and their families, and the pursuit of a vocational education pathway allowed them to do so. This is congruent with Miller's (2005) report on the positive outcomes of vocational education and training (VET) for Indigenous students. This motivates students to complete apprenticeships and traineeships instead of enrolling at university which involves long-term commitment and significant financial outlay. The VET option has had a phenomenal impact on enrolling at university.

Most students were aware of the importance of attaining a good OP score to secure university entry to preferred courses, and that this study pathway, commencing in year 11 with the selection of appropriate board and school subjects was most commonly chosen by students wishing to enter university. It is important to note that **none** of the students in the study had any specific knowledge of the Indigenous Higher Education Pathways Program (IHEPP) offered by the university to Indigenous people seeking an alternative entrance pathway to university. As well as the IHEPP program the USQ also provides courses and support such as Indigenous studies; graduate certificate in Indigenous mental health and wellbeing (through distance education mode; cultural studies; computer studies; financial advice; individual tailored student support and Indigenous tutorial assistance to students.

There is a need to promote the university programs in the schools. These could be done regularly through radio, TV and newspapers as well as sending information packages to schools.

Additional financial assistance with good sporting and social facilities, accommodation close to transport, computer facilities including internet services, scholarships or bursaries to

purchase texts and opportunity to establish and maintain relationships with academic and general staff were contemplated as the key incentives to consider the university as an attractive option. Students are not aware of the assistance that universities provide. Like the IHEPP program, information about assistance should be disseminated among the potential students, parents and community on a regular basis.

Current Students' Perceived Needs and Aspirations

Students indicated they had needed a substantial amount of academic information to get admission at the university.

At the pre enrolment level the students indicated that economic information –fees, cost of text books, accommodation etc and academic information- program of studies, support, commitment, etc were necessary to get admission. They also stated information about support services, social activities, sporting facilities, library facilities, and liaison with schools is needed at that stage. This is congruent with Ferrier and Heagney's (1999) findings regarding the socio-economic factors responsible for low enrolment of Indigenous students at university. Similarly the Monash University-ACER Centre for the Economics of Education and Training (2006) review emphasised the importance of financial and other socioeconomic considerations, aspirations and expectations of Indigenous students for education.

At the post-enrolment level the students indicated substantial academic needs such as tutorial assistance, learning support, academic assistance, and computer facilities. Similarly the students indicated they needed some economic support- scholarship, employment opportunities and social support such as orientation, multicultural activities, socio-cultural

support, support for physical disabilities, childcare facilities, sense of belonging and group accommodation to continue studies at the university. They identified these needs irrespective of their age and whether they had completed year 12 or not.

The students made comment that “there needs to be more information going out to schools to show other Indigenous students out there that there is something for them and it will show their parents and give people encouragement about it and encourage people to do their best and go for it”. They have mentioned that there is insufficient Indigenous support.

The university needs to provide appropriate facilities, activities and programs of study for Indigenous students.

The students also expressed their concern about their negative feelings. Some students are shy, scared etc and need to be made to feel comfortable. University can be frightening for Indigenous students, and there is a need to address this. More entertainment, sports, musical events, BBQ's, excursions could play significant role in addressing this.

CONCLUSIONS AND RECOMMENDATIONS

It is expected that the enrolments would be increased in line with the university goals in the area of diversity and multiculturalism if the university were to undertake positive measures in the following specific areas:

Ongoing Promotional Campaign to inform the Indigenous community, including potential students and their families about university. A range of media should be utilised including radio, TV, newspapers, university presentations and brochures. High schools should be specifically targeted.

This campaign should address issues such as:

- Information on the university program of studies, facilities, and services.
- Employment opportunities of the university graduates.

Universities should also provide:

- Information to current students about the services and facilities available to them,
- Scholarships and bursaries to attract applications from potential Indigenous students.
- Economic, social and academic support.
- Tutorial assistance, learning support e.g., assignment preparation, multicultural activities, childcare facilities, group accommodation, modified where necessary to meet the needs of Indigenous students.

The university needs to:

- Establish and maintain relationships with local Indigenous communities. This could be achieved through offering 'in-kind' support for community initiatives and taking a more active role in Indigenous events (for example NAIDOC week).
- Explore the possibility of establishing strategic links with other service providers (for example TAFE) which would demonstrate to Indigenous peoples that university study can be undertaken after completing a vocational program.
- Ensure that staff working within the university have an understanding of the 'cultural dimension' impacting on Indigenous students and their families. This could be facilitated by a cross-cultural awareness program to be delivered to all staff within the university, ideally as a core component of the induction program for new staff.

REFERENCES

- Alloway, N., Gilbert, P., Gilbert, R., & Muspratt, S. (2004). *Factors impacting on student aspirations and expectations in regional Australia*. Retrieved on 15 November 2007 from www.dest.gov.au/highered/eippubs/eip04_1/eip_04_01.pdf.
- Borg, W. R. (1981). *Applying educational research: A practical guide for teachers*. New York: Longman.
- Bourke, C., Burden, J., & Moore, S. (1996). *Factors affecting performance of Aboriginal and Torres Strait Islander students at Australian universities: a case study*: Australian Government Publishing Service.
- Clausen, J. A., & Ford, R. N. (1947). Controlling bias in mail questionnaires. *Journal of the American Statistical Association*, 42.
- Craven, R., & Marsh, H. (2004). Indigenous secondary students' aspirations, self-concepts and barriers to achieving their aspirations. *Australian Journal of Guidance and Counselling*, 14(1), 16-33.
- Craven, R., Tucker, A., Munns, G., Hinkley, J., Marsh, H., & Simpson, K. (2005). *Indigenous students' aspirations: Dreams, perceptions and realities*. Department of Education, Science and Training: Canberra.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16, 297-334
- Crump, D. (2001). Issues in Indigenous educational and vocational counselling. *Australian Journal of Career Development*, 10(3), 20-24.
- DiGregorio, K., Farrington, S., & Page, S. (2000). Listening to our students: understanding the factors that affect Aboriginal and Torres Strait Islander students' academic success. *Higher Education Research and Development*, 19(3), 297-309.
- Eltchelebi, W. (1999). *Tertiary success for the Aboriginal student: the numerous factors impacting on the dream* (No. RC 023646). Australia: La Trobe University
- Farrington, S., DiGregorio, K., & Page, S. (1999). *The things that matter: Understanding the factors that affect the participation and retention of Indigenous students in the Cadigal program at the faculty of health sciences, University of Sydney*. Paper presented at the 1999 Annual Conference of the Australian Association for Research in Education, Melbourne.
- Ferrier, F., & Heagney, M. (1999). *Re-thinking equity for students at Monash University*. Victoria: Monash University -ACER Centre for the Economics of Education and Training.
- Hossain, D. (1992). *Attitudes of Agriscience Teachers in Michigan toward Internationalizing Agricultural Education Program*. Unpublished Doctoral Dissertation, Michigan State University, East Lansing.

- James, R. (2002). *Socioeconomic background and higher education participation: an analysis of school students' aspirations and expectations*. Retrieved on 15 November 2007 from www.dest.gov.au/archive/highered/eippubs/eip02_5.pdf.
- Kippen, S., Ward, B., & Warren, L. (2006). Enhancing Indigenous participation in higher education health courses in rural Victoria. *The Australian Journal of Indigenous Education*, 35, 1-10.
- McRae, D., Ainsworth, G., Cumming, J., Hughes, P., Mackay, T., Price, K. (2000). What Works? Explorations in improving outcomes for Indigenous students. In Training and Youth Affairs. Commonwealth Department of Education (Ed.): Canberra, ACT.
- Miller, C. (2005). *Aspects of training that meet Indigenous Australians' aspirations: A systematic review of research* Retrieved on 14 November, 2007 from <http://www.never.edu.au>.
- Monash University-ACER Centre for the Economics of Education and Training. (2006). *A review of higher education equity research in Australia 2000-2005*. Melbourne, VIC: Monash University.
- Newman, S. W. (1962). Differences between early and late respondents to a survey. *Journal of Advertising Research*, 2(2), 37-39.
- Santos, J. R. A. (1999). Cronbach's Alpha: A tool for assessing the reliability of scales. *Journal of Extension* 37(20).
- Sonn, C., Bishop, B., & Humphries, R. (2000). Encounters with the dominant culture: Voices of Indigenous students in mainstream higher education. *Australian Psychologist*, 35(2), 128-135.
- University of Southern Queensland. (2007). *Students Admission Toowoomba*: University of Southern Queensland.