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a MEASURE of the STRENGTH  
of the RELATIONSHIP BETWEEN  
the INDIGENITY and DESIRABILITY  
of QUEENSLAND STATE SCHOOLS

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■ Abstract

Education Queensland's Remote Area Incentives Scheme (RAIS) is intended to provide financial and other benefits to teachers who choose to accept employment in undesirable locations in the state. On paper, this scheme claims that remoteness from an urban centre is the foremost measure of a school's undesirability. However, the percentage of Indigenous students in a school has a strong influence on the assignment of transfer ratings to Queensland state schools. This paper provides the details of a statistical analysis that shows that there is a strong relationship between the Indiginity of a school and its institutionalised perception of undesirability. It also includes a survey of urban schools in southeast Queensland that are categorised as less desirable than surrounding schools in the region primarily because there is a higher percentage of Indigenous students enrolled in those schools.

■ Introduction

In Queensland, rural and remote schools experience significant challenges in attracting and retaining skilled and experienced teachers. As a result, Education Queensland (2004) created an intricate system of benefits through its Remote Area Incentives Scheme (RAIS) designed to support teachers who undertake employment opportunities in isolated locations. These benefits include cash payments, additional leave entitlements, special induction programmes and priority for transfer requests. According to Education Queensland (2004), the scheme classifies each state school based on four factors:

- Remoteness, which is calculated on the basis of the distance from Brisbane, Toowoomba, or coastal centres with a population of at least 8,000;
- Availability of sufficient community services, which is calculated by the distance from and size of designated service centres;
- "Complexity of the school environment" which is based on "district advice" and is "moderated centrally" (p. 20); and,
- Organisational staff requirements.

Although Education Queensland (2004) states that remoteness and access to services are the primary criteria used to determine a school's rating, the "complexity of the school environment" and organisational staff requirements are sometimes used to revise the classification. Therefore, a school's rating by the RAIS is effectively a measure of the desirability to teach at that school. Schools in metropolitan southeast Queensland, for example, are generally regarded as the most desirable because of the availability and range of community services, whilst remote schools with limited access to basic services are usually considered to be less desirable. However, I hypothesise that the Indiginity of the student population influences the rating of a school under the pretext of increasing the "complexity of the school environment". In order to test this hypothesis, this paper measures the strength of the relationship between the percentage of Indigenous students enrolled in a school and school ratings.

■ Data collection

Data for this paper were collected over a two week period in mid-September 2005. There were two sets of figures assembled for every state school in Queensland:

- The percentage of Indigenous students (POIS) enrolled in a school; and,
- The school's transfer rating.

Data for both variables were available in the information provided for state schools on the Education Queensland website (<http://education.qld.gov.au>). Note that this process of data collection cannot be repeated in exactly the same manner due to subsequent changes in the website.

*Percentage of Indigenous students (POIS)*

In order to calculate the POIS for each state school, I accessed the Education Queensland online directory of schools at <http://education.qld.gov.au/schools/directory/> and conducted a search for "All State Schools" in the "School Types" field. Next, I selected "Export School Details" for each of the following data sets:

- Enrolments All/Full Time/FTE (all\_ft): Total of all students attending the school full-time.
- Enrolments All/Part Time/FTE (all\_pt): Full-time equivalent (FTE) of all students attending the school part-time (for example, a student who attends school half-time is counted as 0.5 FTE).
- Enrolments ATSI/Full Time/FTE (atsi\_ft): Total of all Aboriginal and Torres Strait Islander (ATSI) students attending the school full-time.
- Enrolments ATSI/Part Time/FTE (atsi\_pt): Full-time equivalent of all ATSI students attending the school part-time.

Concurrently, I chose the tab delimited export format so that I could easily import the data into Microsoft® Excel. Using a number of basic spreadsheet techniques, I added variables all\_ft and all\_pt to get the total number of all students enrolled as full-time equivalents (all\_fte). Likewise, I added variables atsi\_ft and atsi\_pt to obtain the total number of Indigenous students enrolled as full-time equivalents (atsi\_fte). Finally, I calculated the POIS by simply dividing atsi\_fte by all\_fte and then expressing the result as a percentage. For example, Acacia Ridge State School has a total of 436 FTE students, of whom 62.4 are Indigenous full-time equivalent students.

Since  $62.4/436 = 0.1431$ , the POIS for Acacia Ridge is 14.31%. That is, 14.31% of the total student population of Acacia Ridge is Indigenous.

*Transfer ratings*

The RAIS uses a transfer rating scale to assess the desirability of Queensland state schools. The scale has nine ratings with 1 being the most desirable and 7A being the least desirable (Table 1). In southeast Queensland, most schools are assigned a transfer rating of 1, and nearly all the schools that have a transfer rating of 2 are situated in communities with below-average socio-economic conditions. Schools with a transfer rating of 7 are usually located in extremely remote areas that do not have daily access to basic necessities and services.

The transfer rating for every school in Queensland was easy to find but difficult to collate. After selecting a school from the Education Queensland online directory, the transfer rating is available under the option for "Additional Details". Unfortunately, this information was not available for automatic export. Therefore, each school had to be selected individually and its transfer rating recorded manually. It was a tedious and laborious exercise but proved to be the only way to obtain the information.

After collecting all of the transfer rating data, I realised that the scale is not really linear. That is, a school with a transfer rating of 4 is not really four times less desirable than a school with a transfer rating of 1. Conversely, a school with a transfer rating of 7C is likely to be many more than 7 times less desirable than a school with a transfer rating of 1. Therefore, I decided to modify the scale so that it would more closely represent the non-linearity of the transfer ratings. There are seven criteria that I used to quantify the transfer rating scale:

- (a) Compensation cash benefit: A cash benefit payable per year to teachers employed at a school with a transfer rating of 5 or higher in their first and second years of service (Battams, 2005).
- (b) Incentive cash benefit: A cash benefit payable per year to teachers who decide to remain employed at a school with a transfer rating of 4 or higher in their third, fourth, fifth and sixth years of service (Battams, 2005).
- (c) Special incentive cash benefit: A cash benefit payable per year to teachers who continue to work at a school with a transfer rating of 6 or higher beyond their sixth year of service (Battams, 2005).

Table 1. Queensland transfer rating scale.

1	2	3	4	5	6	7C	7B	7A
← More desirable						Less desirable →		

- (d) **Extended emergency leave:** Additional days off with pay for emergency-related travel to larger urban centres for medical, dental and other personal reasons (Battams, 2005).
- (e) **Minimum number of years of service required before a request for a transfer can be lodged:** Teachers at a school with a transfer rating of 7 can lodge an application for a transfer after only two years of service, whilst all other teachers must wait three years before they can request a transfer (Education Queensland, 2004).
- (f) **Induction programme:** Teachers who are selected to work at a school with a transfer rating of 6 or higher are offered the opportunity to participate in an induction programme which provides them with the necessary preparations for relocating to and living in remote locations (Battams, 2005).
- (g) **10 year accrued transfer points:** Over a period of 10 years, teachers at a school with a transfer rating of 7 can accrue up to 136 transfer points, as opposed to those at a school with a transfer rating of 1 who earn only 10 points (Education Queensland, 2004). The RAIS uses transfer points to prioritise transfer requests to more desirable locations in Queensland. That is, teachers with more transfer points receive higher priority for their transfer requests.

Table 2 organises these seven criteria based on the nine transfer ratings.

Next, I scaled the data for each criterion so that the minimum value is 0, the maximum value is 1, and all intermediate values are interpolated proportionately, except for criterion (e) in which the two data values are scaled relative to each other. Table 3 summarises the scaled quantification of transfer rating benefits.

Then, I considered weights for each criterion. Clearly, some criteria carry more or less weight than others. Since criteria (a), (b) and (c) were all based on cash incentives, I decided to consider teachers who work in a school with a transfer rating of 7A for 10 consecutive years. Their cash incentive from (a) would total \$10,000, (b) \$20,000 and (c) \$6,000. Therefore, I determined the proportionate amounts so that (a) is  $10/36 = 0.2778$ , (b) is  $20/36 = 0.5556$  and (c) is  $6/36 = 0.1667$ . Then, I multiplied each value by 10 to give them an appropriate weight against the other criteria: (a) 2.7778, (b) 5.5556, and (c) 1.6667. For criterion (d), I realised that five additional days of emergent leave represent 2.5% of a 200 day school year and therefore set the corresponding weight at 0.025. Because it seemed reasonable to assume that the entitlement to apply for a transfer after only two years of service at a school with a transfer rating of 7 when other transfer applications can be lodged after three years is less significant than the cash incentives, I estimated

Table 2. Summary of transfer rating benefits by criterion.

Criterion	School transfer rating								
	1	2	3	4	5	6	7C	7B	7A
(a)	Nil	Nil	Nil	Nil	\$1,000	\$1,750	\$2,500	\$4,000	\$5,000
(b)	Nil	Nil	Nil	\$2,000	\$3,000	\$4,000	\$5,000	\$5,000	\$5,000
(c)	Nil	Nil	Nil	Nil	\$1,200	\$1,500	\$1,500	\$1,500	\$1,500
(d)	Nil	Nil	Nil	2 days	4 days	5 days	5 days	5 days	5 days
(e)	3 years	3 years	3 years	3 years	3 years	3 years	2 years	2 years	2 years
(f)	No	No	No	No	No	Yes	Yes	Yes	Yes
(g)	10 points	20 points	36 points	49 points	60 points	85 points	136 points	136 points	136 points

Table 3. Scaled quantification of transfer rating benefits.

Criterion	School transfer rating								
	1	2	3	4	5	6	7C	7B	7A
(a)	0	0	0	0	0.2	0.35	0.5	0.8	1
(b)	0	0	0	0.4	0.6	0.8	1	1	1
(c)	0	0	0	0	0.8	1	1	1	1
(d)	0	0	0	0.4	0.8	1	1	1	1
(e)	0	0	0	0	0	0	0.6667	0.6667	0.6667
(f)	0	0	0	0	0	1	1	1	1
(g)	0	0.0794	0.2063	0.3095	0.3968	0.5952	1	1	1

Table 4. Actual and scaled weights of each criterion.

Criterion	Actual weight	Scaled weight
(a)	2.7778	0.1723
(b)	5.5556	0.3445
(c)	1.6667	0.1034
(d)	0.0250	0.0016
(e)	1.0000	0.0620
(f)	0.1000	0.0062
(g)	5.0000	0.3101

Table 5. Weighted and scaled average for each transfer rating.

Transfer rating	Weighted average	Scaled average
1	0.0000	0.0000
2	0.3968	0.0251
3	1.0317	0.0653
4	3.7798	0.2394
5	5.8930	0.3732
6	9.8512	0.6238
7C	14.4028	0.9120
7B	15.2361	0.9648
7A	15.7917	1.0000

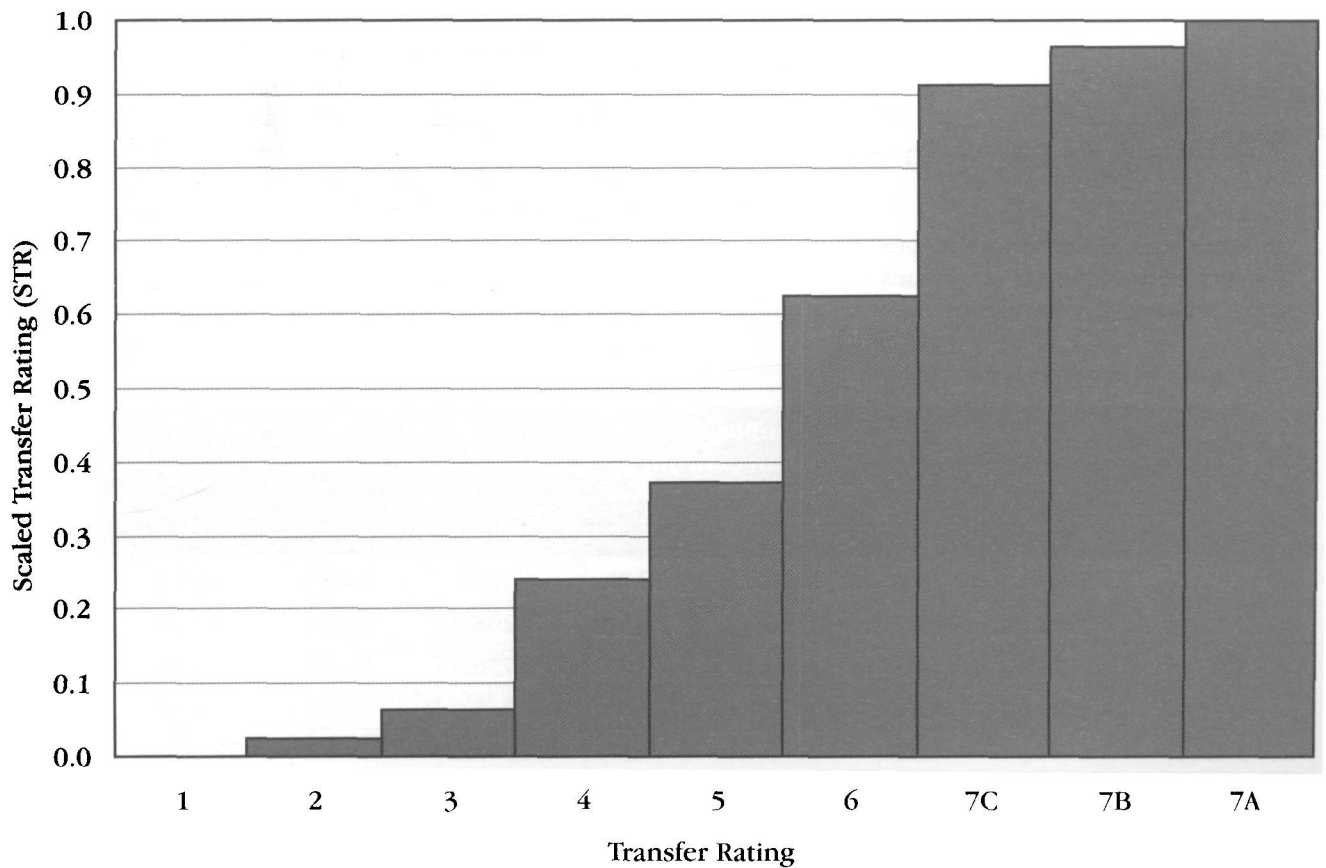


Figure 1. Scaled transfer rating for each transfer rating.

the weight for criterion (e) to be 1. With regards to the criterion (f), I assigned a weight of only 0.1, because the induction programme for teachers intending to work in schools with a transfer rating of 6 or 7 seems to be less of an incentive and more of a necessity that would prepare them for the unusual and extreme living conditions that exist in the ensuing communities. Lastly, criterion (g), I believe, is worthy of a hefty weight of 5 due to the strong bargaining power afforded to teachers who have accrued many transfer points.

Table 4 summarises the weighting of each criterion and also scales the weights from 0 to 1. The corresponding weighted and scaled averages of the seven criteria for each transfer rating are shown in Table 5. These scaled average values are hereinafter referred to as the scaled transfer ratings (STRs). The STR estimates the relative undesirability of higher-rated schools. Figure 1 represents this relationship graphically.

## ■ Results

Table 6 adds up and calculates the percentage of the number of schools, number of all students, and number of Indigenous students per transfer rating. It also derives the POIS for each transfer rating and provides the STR in percentage form. In statistics, the correlation coefficient,  $c$ , between any two variables  $x$  and  $y$  is determined by the formula:

$$c = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sqrt{\sum (x - \bar{x})^2 \sum (y - \bar{y})^2}}$$

where:

$\bar{x}$  = the mean of the set of  $x$  values

$\bar{y}$  = the mean of the set of  $y$  values

$c$  = represents the correlation between  $x$  and  $y$ :

- If  $c=1$ , then a perfect positive correlation exists between  $x$  and  $y$ .
- If  $c=0$ , then no correlation exists between  $x$  and  $y$ .
- If  $c=-1$ , then a perfect negative correlation exists between  $x$  and  $y$ .

Let  $x$  be the POIS, and  $y$  be the STR. Then, the correlation between these two variables is  $c=0.9483$ , which indicates a strong positive relationship. In other words, 94.83% of the data values correlate positively. Therefore, there is a strong inclination for a school's transfer rating to be affected by the percentage of Indigenous students enrolled in the school.

## ■ Discussion

Now that the hypothesis has been shown to be likely true, it is necessary to analyse the result. Because an increase in the Indigeneity of a school's population corresponds strongly with an increase in that school's transfer rating, it is evident that the undesirability to teach in that school also increases. Therefore, there is an institutionalised perception that teaching Indigenous students is inherently undesirable. Young and inexperienced teachers, in particular, are overwhelmingly worried that Indigenous children are "troublesome and difficult" and might negatively reflect on the advancement of their careers (O'Brien, 1999, p. 7). Similarly, preservice teachers who contemplate remote service consistently anticipate difficulties working within Indigenous communities, because they believe that Indigenous students are more demanding and more difficult to handle than other students (Sharplin, 2002). On the other hand, the conclusion that undesirability correlates with Indigenous students might actually be just a consequence of the fact that many Indigenous citizens live in remote areas. Nationally, more than

Table 6. POIS and STR categorised by transfer rating.

Transfer rating	Number of schools		Number of all students enrolled		Number of Indigenous students enrolled		POIS	STR	
	#	%	#	%	#	%	%	%	
1	499	39.1%	2743	10.8	58.2%	8321.0	24.1%	3.03%	0.00%
2	362	28.3%	1341	186.1	28.5%	13208.2	38.2%	9.84%	2.51%
3	189	14.8%	330	84.1	7.0%	3736.5	10.8%	11.29%	6.53%
4	79	6.2%	136	70.6	2.9%	1245.0	3.6%	9.11%	23.94%
5	54	4.2%	71	95.1	1.5%	2098.6	6.1%	29.17%	37.32%
6	35	2.7%	200	7.4	0.4%	535.0	1.5%	26.65%	62.38%
7C	14	1.1%	14	72.4	0.3%	1020.0	3.0%	69.27%	91.20%
7B	25	2.0%	27	86.1	0.6%	2169.9	6.3%	77.88%	96.48%
7A	20	1.6%	23	72.2	0.5%	2231.7	6.5%	94.08%	100.00%
<b>Total</b>	<b>1277</b>		<b>4710</b>	<b>84.8</b>		<b>34565.9</b>			

one-quarter of Indigenous Australians live in remote locations compared with only 2% of non-Indigenous Australians (Australian Bureau of Statistics, 2001). In this case, therefore, remoteness would prevail over any racially-motivated measures of undesirability.

Nonetheless, I believe that Indigeneity is indeed an implicit factor used in conjunction with measures of remoteness to determine the transfer ratings for Queensland state schools, because there are schools in southeast Queensland with a transfer rating of 2. Clearly, teachers working at these schools would not endure problems caused by remoteness. Therefore,

the only remaining criterion to justify a less desirable rating would be the "complexity of the school environment". The question now is whether the increased "complexity of the school environment" in these schools is caused by the lower socio-economic status of the surrounding communities or the Indigeneity of the student population. Answering this question, however, is quite difficult, because many Indigenous people are afflicted by a lower socio-economic status anyway (Altman, 2001). Nonetheless, there is a relationship between the POIS of these schools and the schools' lower rating. Table 7 provides

Table 7. Southeast Queensland schools with a transfer rating of 2 and a higher-than-average POIS. The percentage in brackets following each local council is the average POIS for schools in that council with a transfer rating of 1.

Local council	School	POIS
Brisbane (3.43%)	Acacia Ridge State School	14.31%
	Brisbane Youth Education and Training Centre	45.83%
	Carole Park State School	6.38%
	Durack State School	15.76%
	Glenala State High School	15.32%
	Inala Special School	7.95%
	Inala State School	14.84%
	Inala West State School	11.85%
	Richlands East State School	20.83%
	Richlands State School	13.01%
	Serviceton South State School	5.94%
Watson Road State School	5.91%	
Caboolture (3.51%)	Deception Bay North State School	6.16%
	Deception Bay State High School	6.00%
	Deception Bay State School	4.93%
	Moreton Downs State School	6.51%
Caloundra (2.65%)	Conondale State School	6.94%
Gold Coast (2.39%)	Beenleigh State High School	5.07%
	Eagleby South State School	10.52%
	Eagleby State School	13.30%
Ipswich (5.80%)	Bundamba State School	7.33%
	Bundamba State Secondary College	9.15%
	Dinmore State School	22.24%
	Goodna Special School	10.67%
	Goodna State School	14.04%
	Kruger State School	8.79%
	Leichhardt State School	17.16%
	Redbank Plains State High School	5.88%
	Redbank Plains State School	6.07%
	Redbank State School	11.44%
Riverview State School	7.59%	

Table 7. Southeast Queensland schools with a transfer rating of 2 and a higher-than-average POIS. The percentage in brackets following each local council is the average POIS for schools in that council with a transfer rating of 1 (cont.).

Local council	School	POIS
Logan (2.52%)	Berrinba East State School	4.71%
	Burrowes State School	3.81%
	Crestmead State School	4.87%
	Harris Fields State School	7.51%
	Kingston College	7.55%
	Kingston State School	8.86%
	Logan City Special School	6.95%
	Loganlea State High School	5.44%
	Mabel Park State High School	7.44%
	Mabel Park State School	10.64%
	Marsden State High School	6.18%
	Marsden State School	6.27%
	Waterford West State School	8.86%
	Woodridge North State School	10.32%
	Woodridge State High School	9.82%
Woodridge State School	9.94%	
Redland (2.51%)	Dunwich State School	34.12%
	MacLeay Island State School	27.72%
	Russell Island State School	6.67%

a list of these schools and next to each school is the POIS for that school. The POIS of every school is higher than the average POIS for schools with a transfer rating of 1 in the same council.

### Conclusion

There is a strong relationship between the Indigeneity of a school and its rating of undesirability. Negative attitudes toward Indigenous Australians by the majority of white Australians (Pedersen, Beven, Walker, & Griffiths, 2004) will continue to promote negative attitudes toward teaching prospects in remote Indigenous communities. Likewise, the institutional classification of Indigenous schools as undesirable contributes to the perpetuation of these prejudicial ideals. Because education is a basic right for all Australians, Indigenous children should have equal access to educational opportunities. It is an unfortunate consequence of our modern world that indigenous populations continue to be denigrated by the effects of European colonisation. Aboriginal and Torres Strait Islander people deserve to be respected and valued for their significant contributions to the culture and society of modern Australia. More needs to be done to ensure that they are given every opportunity to succeed.

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