

## A comparison between Chinese and Australia background students' performance in NMIT

Zonghan Yang<sup>1, a</sup>, Con Nikakis<sup>2, b</sup>, Lin Tang<sup>1, c</sup>

<sup>1</sup>Guilin University of Aerospace Technology, Guilin 541004, China

<sup>2</sup>Northern Melbourne Institute of TAFE, Melbourne 32 State VIC32, Australia

<sup>a</sup>yanghan77777@163.com, <sup>b</sup>connikakis@nmit.edu.au, <sup>c</sup>tanglin@guat.edu.cn

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**Abstract.** The purpose of current research is to determine whether there is difference between Chinese and Australia background students' academic performance. Furthermore, we apply the analysis of variance to see if there is any difference between the academic performances of different student groups on some variables. These variables include students' cultural background, age, and the aims of study. The result of current research is that there is not enough evidence indicating that the variables, students' cultural background and age, have effect on the students' academic performance. In addition we find that students' aims for study have significant effect on the students' academic performance. With the development of Chinese economy more and more Chinese students travel to Australia for higher education. Current research gives an insight into Chinese and Australia background students' academic performance.

### 1. Introduction

#### 1.1 The Data Collection

This study was conducted in the Department of Higher Education Business at Northern Melbourne Institution of TAFE (NMIT). Data for current research were extracted from the student records system. All subject records taught during spring 2012 and spring 2013 were identified and extract in a temporary table.

#### 1.2 Attributions for Students' Performance

Current research attempts make some contribution to the confusing area that what factors impact the students' academic performance, in particular, focuses on the difference between the Australia background and the Chinese background students' academic performance in Australia higher education sector.

#### 1.3 The Assessment of Students' Performance

There are all kinds of approaches to assess the students' performance. These approaches usually include questionnaire investigation and the using of subject grades. In current research, to assess the students' academic performance, we use the final grade of specific subjects in several semesters.

#### 1.4 Research Problems

Based on the previous researches and the current research conditions, several key research problems are proposed.

*Is there statistically significant difference in academic performance of the students with Chinese background comparing to the students with Australia background;*

*Is students' academic performance related to the students' cultural background;*

*Is students' academic performance related to the students' age;*

*Is students' academic performance related to the students' aim for study;*

*Is there any significant difference in students' academic performance when we take the students' cultural background and the students' age acting together;*

*Is there any significant difference in students' academic performance when we take the students' cultural background and the students' aims for study acting together.*

## 2. Research Methods

The population for the current research was the student subject records for students enrolled in all courses taught between spring 2012 and spring 2013. The sample of current research was chosen in stage. At the first stage, we divided the student subject records into several primary sample units according to the subject name. At the second stage, three primary sample units were chosen. These primary sample units included the subject records of Management Principles (BACC108), the subject records of World Business Environment (BUS101) and the subject records of Macroeconomics (BACC201). At the third stage, each of the three primary sample units were divided into Chinese background students' records, Australia background students' records.

## 3. Empirical Result

### 3.1 Descriptive Analysis and Statistic

According to our descriptive analysis and statistic, the distribution of research sample is reasonable, it contributed to the current study.

### 3.2 Two Samples T-test

Chinese background students' sample mean of 40.16 (SD=26.25) was significantly lower than Australia background students' sample mean of 48.94 ( $t(df128) = 2.1, p < 0.05$ ). Since  $p\text{-value} = 0.038 < 0.05$ , at  $\alpha = 0.05$  level of significant, there was no enough evidence to conclude that the students' mean final grades were the same for two student groups with different cultural background.

### 3.3 Analysis of Variance

Three one-way analysis of variance were conducted by SPSS, the result from the analysis (table 1,2,3) indicated that the students' cultural background, age and aim for study did not has significant effect on the students' academic performance.

Table 1 One-way analysis of variance of cultural background

Culture	ANOVA				
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	158.209	1	158.209	1.466	0.293
Within Groups	431.815	4	107.954		
Total	590.024	5			

Table 2 One-way analysis of variance of age

Age	ANOVA				
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	164.929	2	82.465	0.863	0.468
Within Groups	573.135	6	95.522		
Total	738.064	8			

Table 3 One-way analysis of variance of students' aim for study

Aim for Study	ANOVA				
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1004.61	2	502.305	6.509	0.031
Within Groups	463.016	6	77.169		
Total	1467.626	8			

Two two-way analysis of variance were conducted by SPSS to determine the relationship between the independent variables. From the analysis of table 4, it indicated that the Culture\*Age interaction was also not significant,  $F(2, 12) = 0.27, p\text{-value} = 0.768 > 0.05$ . Table 5 indicated that the Culture\*Aim interaction was also not significant,  $F(2, 12) = 0.417, p\text{-value} = 0.668 > 0.05$ .

Table 4 Two-way analysis of variance of students' age

Dependent variable: Culture & Age		Tests of Between-Subjects Effects			
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	824.926a	5	164.985	0.852	0.54
Intercept	35169.283	1	35169.283	181.511	0
Culture	515.752	1	515.752	2.662	0.129
Age	204.373	2	102.187	0.527	0.603
Culture * Age	104.801	2	52.4	0.27	0.768
Error	2325.095	12	193.758		
Total	38319.304	18			
Corrected Total	3150.02	17			

a R Squared = .262 (Adjusted R Squared = -.046)

Table 5 Two-way analysis of variance of students' aim for study

Dependent Variable: Final Grade		Tests of Between-Subjects Effects			
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	886.969a	5	177.394	0.348	0.874
Intercept	38545.208	1	38545.208	75.719	0
Culture	442.319	1	442.319	0.869	0.37
Aim	20.016	2	10.008	0.02	0.981
Culture * Aim	424.634	2	212.317	0.417	0.668
Error	6108.69	12	509.058		
Total	45540.867	18			
Corrected Total	6995.66	17			

a R Squared = .127 (Adjusted R Squared = -.237)

#### 4. Discussion

John Cresswell's report (2004) supported by Australia Council of Education Research has found that students whose home language is English performed better in reading and scientific literacy than those whose home language is non-English. But in current study, we did not find that the students' cultural background had effects on the students' academic performance in NMIT higher education sector.

There have been some limitations to current research. At first, there might be other attributions to be considered in the exploration of students' academic performance. Inclusion of more attributions is more likely to improve the explaining power of current research. Secondly, the sample size is relative small so that we cannot conduct an analysis of variance with more levels. Thirdly, the current research focuses on NMIT and its students only. It is necessary to investigate the same issue across different institutes and student groups for improving the explaining power of our research.

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