Gender Imbalance in Brunei Tertiary Education Student Populations: Exploring English Language, Self-Efficacy and Coping Mechanisms as Possible Causes

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Abstract

Brunei has a multilingual society where no citizens (except very young children) are monolinguals. The dominant and official language of the country is Bahasa Melayu. English is widely spoken by many bilinguals and used as the medium of instruction in most schools in addition to being an admission criterion to colleges and universities. Arabic, the language of both Islamic educational institutions and religion, is added to trilinguals who are adherents while each indigenous language is used by most of the multilinguals. In such a complex linguistic environment, the learning and use of spoken or written English is often affected by both retroactive and proactive interferences from other competing languages. In the present survey (N = 287) females scored significantly higher on an English test than their male counterparts. In addition, females significantly used the emotion-oriented coping strategy more than the male peers. No significant differences were obtained on self-efficacy variable by gender and ability in English. Similarly, no significant differences were also obtained on coping strategies by ability in English. However, the task-oriented and avoidance-oriented coping styles were predictors of good and bad achievement in English respectively. Overall, English appeared to be a partial causal factor to the gender gap in Brunei tertiary student populations. Further mixed-methods research was recommended to access more details and possible solutions.

Keywords: gender gap, English, admission criterion, self-efficacy, coping strategies

1. Introduction

Brunei is a multilingual society. Although English is spoken widely in the country, the main and official language is Bahasa Melayu. English is widely spoken by many bilinguals and used as the medium of instruction in most schools in addition to being an admission criterion to colleges and universities. Arabic, the language of both Islamic educational institutions and religion, is added to trilinguals who are adherents while each indigenous language is used by most of the multilinguals. In such a complex linguistic environment, learning and use of spoken or written English is often affected by both retroactive and proactive interferences from other competing languages. In the present survey (N = 287) females scored significantly higher on an English test than their male counterparts. In addition, females significantly used the emotion-oriented coping strategy more than the male peers. No significant differences were obtained on self-efficacy variable by gender and ability in English. Similarly, no significant differences were also obtained on coping strategies by ability in English. However, the task-oriented and avoidance-oriented coping styles were predictors of good and bad achievement in English respectively. Overall, English appeared to be a partial causal factor to the gender gap in Brunei tertiary student populations. Further mixed-methods research was recommended to access more details and possible solutions.

Keywords: gender gap, English, admission criterion, self-efficacy, coping strategies
process, some students become confused and often do not know how to solve both their academic problems (Law, Shahrill, & Mundia, 2015) and personal problems (Shahrill & Mundia, 2014). In such a situation, Brunei students need teachers who are both academic-oriented and affective-oriented to help them sort out their problems (Omar et al., 2014). Teachers with good interpersonal skills, both social and linguistic, are also valuable assets in assisting students and colleagues with problems (Mahalle et al., 2013).

1.1 Factors Impacting Achievement in English and Mathematics in Brunei

Registration records in Brunei tertiary institutions have consistently, over the years, indicated that there were more females than males among students. However, a thorough and critical review of vital life incidence statistics (such as birth rates, infant mortality, diseases, accidents, and death) revealed no significant differences in numbers between the two genders. Similarly, careful analyses of student enrolments have indicated no significant gender differences at three levels of the education system where students learn or study the same subjects, namely primary school stage (Years 1-6), lower secondary cycle (Years 7-8), and General Certificate of Education Ordinary Level, GCE O-Level (Years 9-11). At the pre-university level, also known as General Certificate of Education Advanced Subsidiary Level, GCE AS-Level (Year 12) and General Certificate of Education Advanced Level, GCE A-Level (Year 13) students study only few chosen or preferred subjects.

The gender gap seems to have its origins at the GCE O-Level (Year 11) examinations when females outdo males in both English language and mathematics. As a result, more females were admitted to Sixth Form or pre-university colleges than males. This difference in English and mathematics between the two genders appears to persist during the GCE “AS” and “A” Levels (Years 12 to 13). Since tertiary institutions in Brunei often include GCE “O” Level English and mathematics among their admission criteria, this has in turn, resulted in fewer males than females being admitted to colleges and universities.

1.2 Objectives of the Study

Since students of both genders grew up in the same culture, attended similar schools, and were taught by teachers with identical qualifications and experience, the causes of the difference in academic performance at “O”, “AS”, and “A” Levels in English language is hard to explain and remains a source of worry to stakeholders such as teachers, parents, and employers. Many plausible explanations and speculations could be made here. The present study sought to identify some of the potential factors that enable or disable male students from performing well in O-Level English and beyond. The variables that were investigated include: ability in mathematics; self-efficacy; and coping strategies. Briefly, the three main objectives of the present study were to:

- Determine the performance differences between females and males on an English test.
- Determine the performance differences between low and high scorers in English on the self-efficacy and coping strategies variables.
- Determine the extent to which self-efficacy and coping strategies predict achievement in English.

2. Method

The strategies used in conducting the present study are briefly described below under Sections 2.1-2.5.

2.1 Design

The field survey approach was used to investigate the problem. Under this procedure, the researcher went to six randomly selected Sixth Form colleges to collect the data from the participants. The research strategy was thus different from other forms of surveys (e.g. postal, telephone, online, and longitudinal).

2.2 Sample

Two random samples were used in the present study. The pilot sample had 32 participants (16 females, Mean age = 20.125, SD = 1.586 and 16 males, Mean age = 21.375, SD = 2.802). The pre-test sample came from one Sixth Form Centre (also known as Pre-University College or Year 12/13 school in Brunei). Data collected from this trial sample was not included in the main study. The main study sample consisted of 330 participants (179 females, Mean age = 17.543, SD = 0.061 and 151 males, Mean age = 17.799, SD = 0.805). Participants in the main study came from six different Sixth Form Centres. There were two inclusion criteria. First, both genders were recruited. Second, all participants were drawn from GCE A-Level (Year 13) cohorts.

2.3 Instruments

Finding suitable research instruments is one of the main problems facing educational researchers in Brunei. Most of the good instruments are written in advanced English and many tend to be too long (Mundia & Bakar, 2012; Mundia, 2011). The data for the present study were collected by three quantitative instruments (two
psychometric tests and one educational test), namely: the New General Self-Efficacy Scale, NGSS (Chen, Gully, & Eden, 2001); the Coping Inventory for Stressful Situations, CISS (Endler & Parker, 1990); and an adopted SAT mathematics test (Muntone, 2006).

The New General Self-efficacy Scale, NGSS (Chen, Gully, & Eden, 2001) is an 8-item unidimensional scale. Each item is rated on a 5-point Likert-type scale ranging from Strongly Disagree (1 SD) through Neutral (3 N) to Strongly Agree (5 SA).

The Coping Inventory for Stressful Situations, CISS (Endler & Parker, 1990) is a self-report paper and pencil measure of coping containing 48 items. Sixteen (16) items assess task-oriented coping and 16 items measure emotion-oriented coping. The avoidance scale is actually divided into two subscales: distraction (8 items) and social diversion (8 items). All the three scales are Likert-type instruments and each item is rated on a 5-point response format (ranging from 1 = not at all, to 5 = very much).

The 40-item objective SAT English test (Muntone, 2006) covered several topics in comprehension passages (e.g. themes, genre, tone, characterisation, structure, organisation, narrative voice, syntax, diction, vocabulary, figurative language, and imagery) which are taught and familiar to all students in Brunei secondary schools up to GCE O-Level. Each item had five-response options (A, B, C, D, E) with one correct answer and four distractors scored dichotomously as zero (0) if wrong and as one (1) when right. Altogether the 40 items measured a wide range of high-order skills such as understanding, interpretation, synthesis, application, evaluation, and critical thinking. The difficulty for this test was set at the GCE O-Level standard. SAT tests are international college selection / entrance assessments. They are taken by students all over the world with Year 11 and above level of education. In terms of contents, the test was suitable for Brunei students in Years 12-13.

Clarifications made to the participants on completing the instruments accurately helped to increase the number of usable returns. Using data from the preliminary sample, the quality, suitability and feasibility of the instruments were determined. The scale descriptive statistics and reliability are presented in Table 1 while validity indices for the measures are provided in Table 2. The instruments were both reliable and valid for use with Brunei Year 13 students. As shown in Table 2, measures of coping (Task, Emotion, and Avoidance scales) correlated high, positively and significantly (bold values) supporting convergence validity. However, both English and self-efficacy related low with all other variables indicating discriminant validity.

Table 1. Descriptive statistics, standard error of measurement and Alpha reliability

<table>
<thead>
<tr>
<th>Scale</th>
<th>Subscale</th>
<th>Items</th>
<th>Maximum(^1)</th>
<th>Mean</th>
<th>SD(^2)</th>
<th>SEmeas(^3)</th>
<th>ISr(^4)</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>NGSS</td>
<td>Self-efficacy</td>
<td>8</td>
<td>80</td>
<td>28.727</td>
<td>4.415</td>
<td>1.681</td>
<td>0.599</td>
<td>0.855</td>
</tr>
<tr>
<td>SAT</td>
<td>English test</td>
<td>40</td>
<td>40</td>
<td>12.650</td>
<td>5.212</td>
<td>2.758</td>
<td>0.198</td>
<td>0.720</td>
</tr>
</tbody>
</table>

\(^1\) The highest score possible from each scale
\(^2\) Standard deviation of total scores
\(^3\) Standard Error of Measurement
\(^4\) Item-to-Scale Correlation (corrected)
Table 2. Convergence validity and discriminant validity by inter-scale correlations

<table>
<thead>
<tr>
<th>Test</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task-oriented</td>
<td>0.118*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotion-oriented</td>
<td>0.058</td>
<td>0.544**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoidance-oriented</td>
<td>-0.060</td>
<td>0.628**</td>
<td>0.613**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>0.072</td>
<td>0.343**</td>
<td>0.125*</td>
<td>0.128*</td>
<td>1</td>
</tr>
</tbody>
</table>

* p < 0.05 (2-tailed)
** p < 0.01 (2-tail)

2.4 Procedures

The present study was originally conducted as part of the PhD doctoral dissertation research using sponsorship funds from the University of Brunei Darussalam. Permission to collect the data from the Sixth Form Centres (schools) was obtained from the Ethical Committee of the University. In addition, permission to conduct the study in schools was also granted by the Ministry of Education in the Government of Brunei Darussalam. Ethical requirements for involvement in the study were explained to all the participants. No deception was used. Only students who voluntarily agreed to participate in the study were recruited as respondents. The researcher had no conflict of interest.

2.5 Data Analysis

The two psychometric scales and the SAT test of English were scored according to instructions in their respective technical manuals. Raw quantitative data were analysed by a variety of procedures that included descriptive statistics, correlation, t-test for independent groups, One-Way ANOVA and simultaneous multiple regression. These techniques were deemed suitable to address the objectives of the study.

3. Results

The results of the study are presented below according to the data collection instruments used.

3.1 Participants’ Performance on Self-Efficacy Scale by Ability in English

Table 3 shows that the three ability groups in English did not differ significantly in self-efficacy.

Table 3. Participants’ performance on self-efficacy scale by ability in English (N = 287)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Bottom (n = 79)</th>
<th>Middle (n = 136)</th>
<th>Top (n = 72)</th>
<th>F (df = 2, 286)</th>
<th>P (2-tailed)</th>
<th>Eta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-efficacy</td>
<td>28.747</td>
<td>28.096</td>
<td>29.250</td>
<td>1.477</td>
<td>0.230</td>
<td>0.101</td>
</tr>
</tbody>
</table>

sd Standard deviation of total scores

3.2 Participants’ Performance on Self-Efficacy Scale by Gender

No significant difference in self-efficacy was obtained between females and males (Table 4).
Table 4. Participants’ performance on self-efficacy scale by gender (N = 287)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Females (n = 164)</th>
<th>Males (n = 123)</th>
<th>ANCOVA F (df = 285)</th>
<th>P (2-tailed)</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>28.848</td>
<td>28.187</td>
<td>0.052</td>
<td>0.244</td>
<td>0.090</td>
</tr>
<tr>
<td>SD</td>
<td>4.487</td>
<td>5.071</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Standard deviation of total scores

3.3 Participants Performance on Coping Styles by Ability in English

No significant differences were obtained between the three English ability groups coping styles. However, top achievers in English scored highest on task-oriented coping.

Table 5. Participants performance on coping styles scale by ability in English (N = 287)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Bottom (n = 79)</th>
<th>Middle (n = 136)</th>
<th>Top (n = 72)</th>
<th>F (df = 2, 286)</th>
<th>P (2-tailed)</th>
<th>Eta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>55.139</td>
<td>55.603</td>
<td>57.708</td>
<td>1.499</td>
<td>0.225</td>
<td>0.102</td>
</tr>
<tr>
<td>SD†</td>
<td>11.009</td>
<td>9.982</td>
<td>8.031</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task-oriented coping style</td>
<td>50.532</td>
<td>49.809</td>
<td>50.694</td>
<td>0.234</td>
<td>0.792</td>
<td>0.041</td>
</tr>
<tr>
<td>Emotion-oriented coping style</td>
<td>49.899</td>
<td>46.824</td>
<td>47.917</td>
<td>2.310</td>
<td>0.101</td>
<td>0.127</td>
</tr>
<tr>
<td>Avoidance-oriented coping style</td>
<td>55.139</td>
<td>10.610</td>
<td>10.341</td>
<td>1.499</td>
<td>0.225</td>
<td>0.102</td>
</tr>
</tbody>
</table>

* Standard deviation of total scores

3.4 Participants’ Performance on Coping Styles by Gender

The results in Table 6 indicated that females used an emotion-oriented coping style more so than males when solving stressful academic and personal problems (p < 0.05).

Table 6. Participants' performance on coping styles scale by gender (N = 287)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Females (n = 164)</th>
<th>Males (n = 123)</th>
<th>ANCOVA F (df = 285)</th>
<th>P (2-tailed)</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task-oriented coping style</td>
<td>55.951</td>
<td>56.073</td>
<td>0.427</td>
<td>0.104</td>
<td>0.031</td>
</tr>
<tr>
<td>Emotion-oriented coping style</td>
<td>51.311</td>
<td>48.789</td>
<td>0.140</td>
<td>2.132</td>
<td>0.034*</td>
</tr>
<tr>
<td>Avoidance-oriented coping style</td>
<td>47.146</td>
<td>49.008</td>
<td>0.476</td>
<td>1.540</td>
<td>0.125</td>
</tr>
</tbody>
</table>

*p < 0.05 (two-tailed)

3.5 Coping Strategies and Self-Efficacy as Predictors of Achievement in English

Only two predictors were, task-oriented and avoidance-oriented coping styles, were obtained as presented in Table 7. However, the avoidance-oriented coping style had a negative relationship or effect with achievement in English. Overall the model was significant but the predictors accounted for only a small 3.7% of the variance in
English achievement.

Table 7. Predicting achievement in English using coping styles and self-efficacy (N = 287)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>7.512</td>
<td>2.770</td>
<td>-</td>
<td>2.712</td>
</tr>
<tr>
<td>Task-oriented</td>
<td>0.085</td>
<td>0.037</td>
<td>0.153</td>
<td>2.279</td>
</tr>
<tr>
<td>Emotion-oriented</td>
<td>0.051</td>
<td>0.036</td>
<td>0.092</td>
<td>1.419</td>
</tr>
<tr>
<td>Avoidance-oriented</td>
<td>-0.090</td>
<td>0.037</td>
<td>-0.166</td>
<td>-2.406</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>0.053</td>
<td>0.070</td>
<td>0.046</td>
<td>0.749</td>
</tr>
</tbody>
</table>

Model: F (4, 286) = 2.681, p = 0.032; R = 0.191, R^2 = 0.037

4. Discussion

Learning English can be very challenging, especially for students in a multilingual context. Despite this, students in Brunei have to work hard at mastering English since this language is the medium of instruction. Harlaar, Hayiou-Thomas and Plomin (2005) argued that the earlier the reading ability starts, the better the development of linguistic skills. Ritchie and Bates (2013) also agreed by suggesting in the findings of their study that the effects of early reading ability improved the socio-economic status attainment across the life span. The problem here is that low English scorers tend to use avoidance-oriented coping style to deal with stress or any problems according to results of the present study. This type of coping style is the least favourable coping style and it is not really a good way to deal with stress or any problems, as low English scorers prefer to distract themselves away from the problem, for example by watching television or calling a friend, rather than taking problem-solving actions directly (Walker, 2012). Mastering English helps in the study of other subjects taught in English language. Research done by Wei, Lu, Zhao, Chen, Dong and Zhou (2012), discovered that girls who were good in English language were also good at arithmetic. This finding concurs with other studies which stated that girls were good at languages because they started their verbal ability earlier and vocabulary acquisition faster, and furthermore, their reading skills and usage in word roots are better and their word utterances are longer, compared to the boys (Bornstein, Haynes, Painter & Genevro, 2000).

Below are few recommendations for teachers and students of English as a school subject.

- Workshops on English language should be mounted to equip teachers with effective instructional techniques and provide students with better learning strategies (Anthony, 1996; Dhindsa & Fraser, 2004).
- To support active participation among students, teachers should use puzzles and other word games to encourage students to learn English vocabulary, sentence structure, idioms, and metaphors.
- English teachers should give students interesting homework, such as reading their favourite English novels, and writing a report or summary about this.
- Teachers should encouraging students to do oral presentations and mini projects in English.
- Undertaking presentations and mini projects in English will encourage students to present their ideas and explore their creativity. This will encourage participative and enthusiastic learning, and invite more peer interactions, which will improve both English proficiency and social skills.
- Active participation in oral presentation might also eliminate students’ fear of speaking or anxiety about learning English, as well as improving their writing, listening and reading skills.

5. Conclusion

The gender gap in Brunei’s tertiary education institutions is not caused by the birth rate, natural infant mortality rate, infanticide, unequal school enrolment rates, school dropout rate, unfair opportunities, or limited access to school or college or university. Rather, the problem seems to be due to poor achievement among males in GCE “O” Level English and mathematics which persists at the GCE “AS” and “A” Levels (Years 12 and 13). GCE “O” Level English and mathematics are included among the admission criteria for colleges and universities in Brunei. Consequently, this has led to more female than male students being admitted to colleges and universities.
6. Limitations

There were two main limitations to this research. First, the variables investigated were only limited to learning styles and study strategies. Inclusion of other factors such as home environment, teaching effectiveness, school quality, the nature of the curriculum, assessment procedures and language difficulties might have expanded the findings but this was going to require more time, resources and practical considerations to implement. Moreover, each of these factors is very broad and embraces a wide range of issues. Second, as a survey the findings of the study could not actually show cause-and-effect relationships among the variables investigated. Despite these limitations, the study had practical significance in that it addressed one of the major problems in the Brunei tertiary education system.

References


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