The Influence of AQ on the Academic Achievement among Malaysian Polytechnic Students

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Abstract

This study aimed to examine the influence of Adversity Quotient (AQ) on the academic achievement among Malaysian polytechnic students. A total of 1,845 students from five polytechnics in Malaysia participated in this study and these polytechnic was selected from five different zones, namely Nouthern, Southern, Eastern, Western and Borneo. The samples for the study was selected using the proportionate clustered multistage stratified sampling technique. Data collected for this study was analyzed using regression analysis and the results showed that the findings of the analysis showed that AQ contributed only 0.9% (r = .098) changes in the variance of academic achievement score. AQ still has the potential to be studied from the other perspective of the success factor in the polytechnic students as a whole.

Keywords: adversity quotient, academic, polytechnic, regression

1. Introduction

Adversity Quotient (AQ) is a new concept that is very useful when one's need to face various challenges in their everyday life (Phoolka & Kaur, 2012). Evidencefrom previous studies indicates the interest on AQ related research in the academic field (Tripathi, 2011; Williams, 2003). AQ has the potential to be explored in order to empower students (D'Souza, 2006) and indeed serve as a predictor besides IQ and EQ on students' achievement (D'Souza, 2006; Stoltz & Weihenmayer, 2010; Stoltz, 1997, 2007). For example, students' with strong AQ will achieve higher marks with many attempts to score in the examination. Technical and Vocational Education (TVE) is one of important aspects of the Malaysia education systemin providing skilled workers to achieve a developed nation status with high income.Polytechnic Transformation is one of the Critical Agenda Projects (CAP) in the National Higher Education Strategic Plan (2011–2015) (Ministry of Higher Education, 2011). This transformation aims towards increasing the number of highly skilled workforce from 23% to 37% by 2015 (Polytechnic Education Department, 2009).This transformation is introduced along with the current educational needs (Norfadila, Mohd-Noor, & Azmi, 2011) that demand TVE to train manpower inbecoming more resilient, high competitive spirits, and adaptable to various industrial and work situations(Zuhaila, Mohd-Safari, & Muhammad-Syukri, 2012). As such, AQ plays role in as an individual will encounter various challenges in everyday work life, such as competition, productivity, learning, and resilience (Stoltz, 1997).In this study, the challenges ofpolytechnic student isto success in their academic life and achievement.

The main idea of this paper is to investigate to what extent AQ that is the ability of the students in handling challenges affect their achievement.Students should not only excel in academics but also need to be and resilient in order to be capable of facing the challenges in the future (Yahya, Muhammad-Sukri, & Hairul-Anuar, 2008). In the National Education Philosophy (NEP), four quotients that highlighted as an indicatorof students' development in Malaysia, namely Intellectual Quotient (IQ), Emotional Quotient (EQ), Spiritual Quotient (SQ) and Physical Quotient (PQ). This study aims to empirically examine the potential of AQ as a predictor of academic achievement among polytechnic students.

2. Adversity Quotient

AQ is defined as the ability of an individual to face and overcoming adversities, problems or difficulties and also changed them into an opportunity for greater achievement (Stoltz, 1997). Generally, some researchers defined AQ with different perspectives and interpretations. The definition of AQ can be categorized into three, which are:

(i) the conceptual framework to increase all facets of success; (ii) the measure of how one responds to adversity; and (iii) a network of scientific tools based on knowledge to improve one's response towards adversity (Stoltz, 1997). In the educational perspective, AQ is the ability that is needed to keep fighting when students face difficulty in achieving their performance. Basically, AQ can predict resilience and persistence of a person and can be used to enhance the effectiveness of teams, relationships, families, communities, cultures, societies and organizations (Phoolka & Kaur, 2012). Operationally, AQ is measured using four constructs, which are Control, Ownership, Reach and Endurance. In the field of management, AQ can be used to understand how employees' adapt work pressure and fulfill their potentials, aggressively face pressure, and meet the expectations (Shen, 2014). Generally, persons with high AQ will successfully easily surpasses the big and small challenges that confront them every day (Cura & Gozum, 2011); predicts how well one withstands adversity, overcome it, and foresee who will be crushed; who will exceed and fall short of their expectations in performance and potential; and who gives up and prevails (Canivel, 2010); a reflection of the one who is facing a problem (Pangma, Tayraukham, & Nuangchalerm, 2009). The idea of AQ is, as there has a question on why two individuals with similar IQ and EQ, but handle life's adversities differently. Both persons with the same ability of intelligence will have a probability to respond differently to the challenges in their life.

3. Research of AQ and Academic Achievement

Previous studies have shown AQ relationship with the students' academic achievement.However, the relationship are not consistent (D'Souza, 2006; HuiJuan, 2009; Williams, 2003; Yodsakun & Kuha, 2008). A study by Sia (2001) empirically showed no correlation between AQ, IQ, and EQ with the academic achievement of high school students.Meanwhile, a study by Anik and Lydia (2006) indicated that AQ did not contribute to the academic achievement of high school students enrolled in Mathematics and Science subjects (MIPA) as well as in languages. On the other hand, Priska (2010) showed that there was no positive correlation between AQ and the academic achievement among the high school students studying in District 1 Seyegan, Indonesia.A study by Indah (2010) found that AQ did not affect the academic achievement of 318 undergraduates majoring in Accountancy at the Faculty of Economics in one of the private universities in Jakarta. Arstity (2012) showed that there was no relationship between AQ and academic achievement of 110 undergraduates in the Faculty of Psychology, University Muhammadiyah Surakarta, Indonesia.AQ was found to have explained about 2.4% of variance inacademic achievement. Rizqon (2009) stated that there was a very weak correlation between AQ and academic achievement among students in the Acceleration Programme at *SMP 1* District of Malang, Indonesia and contributed about 4.8% of variance in academic achievement scores while the remaining was influenced by other factors.A review by Kiki (2011) showed that only Control construct has negatively influenced the academic achievement of students, while other constructs such as Ownership, Reach and Endurance did not affect it at all. However, the findings were different for Yodsakun and Kuha (2008) in which showed a positive relationship between all constructs of AQ and the academic achievement of 231 students in Pattani, Thailand.Study by HuiJuan (2009) found that there was a significant relationship between AQ and the academic achievement of 280 college students in the Philippines. D'Souza (2006) showed that there was a positive relationship between AQ and the partial English primary school in India.In addition, there existed a relationship between AQ and the mathematical achievement of students in Manila, Philippines (Cura & Gozum, 2011).

Due to these inconsistent findings regarding the relationship of AQ with the academic achievement in a different context of institutions, sample and countries, this gap providesthe opportunity in contributing empirical evidence on how the AQ can influence the academic achievement among students studying in Malaysian Polytechnic. AQ was originally assessed to the sample of employees from the variety of organizations, but this study aim to examine whether the AQ is a predictor of academic achievement among polytechnic students.

4. Method

4.1 Sampling

The proportionate clustered multistage stratified sampling procedure was adapted in this study to ensureappropriate representation of the population within the overall sample (Denscombe, 2010). The sample size for this study comprised of 1,892 students from a population of 18,828 students.Clusters referred to the location of the polytechnic into five zones, namely Nouthern, Southern, Eastern, Western and Borneo.This study employed a proportionate sample size 10% from each polytechnic selected as proposed by Gay, Mills and Airasian (2012) and Zainuddin (2012). The sample selected were polytechnic students in semesters two, three, five, and six. Three strata were used, namely the programme of study (first strata), a semester of study (second strata), and gender (third strata) as proposed by previous researchers (HuiJuan, 2009; Macasaet, 2013; Rohaya & Mohd-Najib, 2008).

4.2 Research Design and Instrumentation

This study applied the quantitative research approach. The independent variable was AQ and the dependent variable was the academic achievement. The Cumulative Grade Point Average (CGPA) was used as a measure of academic achievement.Based on the measures of association, one of the conditions is the need to use the interval or ratio data measurement scale. Thus, there is a need to transform the ordinal data into interval data through the use of Rasch model to obtain a linear interval scale.Using Rasch model, the ordinal data in the Likert scale weretransformedto tointerval scale with a unit in Logits in order to fulfil the needs of regression analysis. An instrument name as, IKBAR is a self developed questionnaires to measure using a Likert scale (four points). IKBAR has 66 items including four constructs which are Control, Ownership, Reach and Endurance. This instrument was pilot tested using the Rasch Model with a good psychometric assessment.

5. Results and Discussions

5.1 Demographic Profile

The study was successfully collected 95% of the questionnaires from the respondents and the rate of returnwas acceptable because it exceeded the rate of 75% (Christensen, Johnson, & Turner, 2011). A total of 1,845 instruments was successfully collected. The samples comprised of 994 (53.9%) male students and 851 (46.1%) female students. According to year of study, about 619 (33.6%) are first-year students. Civil Engineering Department (JKA) recorded the highest percentage of students 490 (26.6%) that represents the sample and the Commerce Department (JP) recorded the lowest sample of students 442 (24.0%).

5.2 Data Analysis

Prior to the conducting regression analysis, the assumption of normality was tested (Ghasemi & Zahediasl, 2012) using skewness and curtosis (Field, 2009). The result showed that AQ is a normally distributed and acceptable with curtosis ranges between 0.509 to 4.147 and skewness ranges between 0.442 to 1.047 (Kim, 2013; Kline, 2009). The finding in Table 1 shows that AQ only explained about one percent of variance in student academic achievement. Table 1 shows the results of the simple regression analysis,which shows that AQ is significantly, associated with academic achievement scores [0.098,*p*< .05] and the finding can be represented by the equation as follows.

$$\text{Academic Achievement Score} = 2.982 + 0.04 \ (AQ) \tag{1}$$

Table 1. The regression coefficients

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,982	.017		172.340	.000
	AQ	.040	.009	.098	4.223	.000

Dependent Variable: CGPA.

R-square = 0.01, R squared adjusted = 0.098; F (1.1843) = 17.835, p = 0.001.

In conclusion, polytechnic students' AQ explained only 0.9% (*r*=.098) variance on academic achievement. Based on the results of the simple regression analysis, the AQ is not the only predictor variable to the academic achievement of polytechnic students. Basically, AQ is a factor that influences the work performance in accordance with the original context of an organization. In fact, AQ is a global success predictor (Stoltz, 1997). In the context of education, the study by Williams (2003) also found that there is a possibility that AQ is a factor influencing students' academic achievement. Nevertheless, the results clearly show that AQ was associated with academic achievement among polytechnic students but not contributed to it. On the other hand, these findings are theoretically very opposite to the AQ concept, which serves AQ as a global success predictor (D'Souza, 2006; Stoltz & Weihenmayer, 2010; Stoltz, 1997, 2007). These findings are unlike the theories and concepts previously envisaged. Similarly, the findings of this study are contradictory to the findings of several previous studies (Cura & Gozum, 2011; D'Souza, 2006; Hajar, 2013; HuiJuan, 2009; Williams, 2003; Yodsakun & Kuha, 2008). This inconsistency is caused by the selection of polytechnic students' academic achievement as a definition for a global success predictor, which is seen as not conforming to the original concept of success by Stoltz (1997). The findings in the context of polytechnics are in line with the study by Cura and Gozum (2011), who found that only 8.18%

change in the mathematical achievement of respondents are influenced by AQ while the study by Huijuan (2009) recorded only 7.18% change in the respondents'Grade Point Average (GPA) is influenced by AQ. Review by Yodsakun and Kuha (2008) found that the combination of AQ, EQ, and MQ are only able to predict 38.2% in the academic achievement of students in Thailand. Review by Hajar (2013) also found that AQ has contributed about 17.89% of the students' academic achievement. It can be concluded that AQ is absolutely not much of an influence to the academic achievement of students. It has another factor that affected academic achievement such as attitudes towards an academic subject.Another factor was supported by a study from Mohd Mahzan et al., (2013) indicated that most students were not active in class activities, poor attendance and exhibited a lack of motivation to study the subject. Another interesting matter to be clarified in the context of this study is that AQ may tend not to be linked with cognitive elements such as academic achievement and IQ.

6. Conclusions

The education system in Malaysia is basically emphasizing on intelligence IQ, EQ, SQ and PQ as stated in National Education Philosophy in determining the success of a student. Students in higher education institutions such as polytechnics require different types of intelligence to improve the academic achievement. This study sought to prove whether AQ can be a variable that has the potential to improve student academic achievement. The results indicated that AQ of students did not much influence their academic achievement but positively associated. It showed that the students' competence in handling the challenges in their lives was based on the life experience, environment, and upbringing. Academic achievement was determined only through a learning process at the polytechnics. The challenges faced by them were extensive and not limited to the internal context of the polytechnics, in fact reaching far to the internal challenges such as anxiety, emotion, fear, and much more. Excellent cognitive ability did not mean that the individuals were resilient and academically weak students, on the other hand, were not necessarily going to fall in facing challenges. Many leaders, businessmen, and successful corporate members were not university graduates or might have previously had excellent academic results, but their life experience and endurance have made them persevered and resilient. They need to believe in themselves because positive self-esteem can lead to high academic self-efficacy, and that academic self-esteem relates to academic achievement (Afari, Ward, & Khine, 2012). AQ was still a relevant intelligence for students not to give up easily with whatever obstacles they faced in order to achieve the academic results that they were proud of. This was because there were still many students who excelled in academics were among those who were intelligent in handling challenges. Overall, the current study recommends that AQ should be introduced and implemented in the polytechnic student development programs in preparing themselves to involve in the working field in future. In addition, future research can be conducted with make use of the capabilities in Rasch analysis in explaining the correlation between the variables of AQ, items and people involved.

Acknowledgments

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