Relating emotional intelligence to academic achievement among university students in Barbados

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This study investigated the relationships between emotional intelligence and academic achievement among 151 undergraduate psychology students at The University of the West Indies (UWI), Barbados, making use of Barchard (2001)'s Emotional Intelligence Scale and an Academic Achievement Scale. Findings revealed significant positive correlations between academic achievement and six of the emotional intelligence components, and a negative correlation with negative expressivity. The emotional intelligence components also jointly contributed 48% of the variance in academic achievement. Attending to emotions was the best predictor of academic achievement while positive expressivity, negative expressivity and empathic concern were other significant predictors. Emotion-based decision-making, responsive joy and responsive distress did not make any significant relative contribution to academic achievement, indicating that academic achievement is only partially predicted by emotional intelligence. These results were discussed in the context of the influence of emotional intelligence on university students' academic achievement.

Keywords: academic achievement, emotional intelligence, university undergraduates

Introduction

The term emotional intelligence was first described by Salovey and Mayer (1990) as a form of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and action. It was made popular by Goleman (1995) who refers to it as the ability to sense, understand, value and effectively apply the power and acumen

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of emotions as a source of human energy, information, trust, creativity and influence. Since then, the general notion of emotional intelligence became widely known, appearing in magazine and newspaper articles (Bennetts, 1996; Peterson, 1997), and popular books (Cooper & Sawaf, 1997; Gottman & DeClaire, 1997). Presently, the academic concept of emotional intelligence has been developed through several theoretical models and frameworks (Barchard 2001; Mayer et al., 2003; Peterson & Seligman 2004) and is based on a growing body of relevant research (Fischer et al., 2004; Katyal & Awasthi 2005; Mizra & Redzuan 2010; Simon & Nath, 2004).

The literature suggests that emotional intelligence plays a key role in determining success in life and it becomes more and more important as people progress up the career ladder (Kolb & Hanley-Maxwell, 2003; Richburg & Fletcher, 2002). Goleman (1995) argues that emotional intelligence, social intelligence, and luck also play a big role in a person's success. While IQ gets you hired, emotional, EQ gets you promoted. Research has shown that what separates successful people from less successful counterparts is not necessarily IQ but rather EQ, with key skills to success more likely to found in the latter rather than the former. For instance, Snarey and Vaillant, (1985) underlined the limitation of IQ in predicting one's success at work and life in general over a forty years longitudinal investigation with 450 boys in Massachusetts, USA. They found that the strongest predictors of success were characteristics such as being able to handle frustration, control emotions, and get along with other people.

Emotional intelligence and academic achievement among university students

Nasir and Masur (2010) assert that effective learning takes place when students develop an understanding of how to learn and this understanding requires such emotional skills as confidence, self-control, the ability to communicate and cooperate with others. They found that emotional intelligence significantly predicted academic achievement among the 132 students in different departments at the International Islamic University, Islamabad, Pakistan. In an earlier investigation by Rozell, Pettijohn, and Parker (2002), a significant relationship was found between emotional intelligence and the academic achievement of undergraduate students at Mid-Western University in the USA. Similarly among 246 Pakistan adolescents, Farooq (2003) reported that students with high emotional intelligence showed better academic performance than students with low emotional intelligence. A similar finding among Nigerian university students by Adeyemo (2007) also showed significant correlations between emotional intelligence and academic self-efficacy with academic achievement, while Sünbül and Aslan (2008) reported a similar relationship between emotional intelligence and academic achievement among 312 Education students in Konya, Turkey. Moreover, there is a significant body of research indicating that EI and other non-traditional measures are just as predictive of success as traditional IQ tests (Brackett & Mayer 2003; Low et al., 2004; Low & Nelson 2005; Stottlemyer 2002).

There is a growing realisation that transitions from school to college and career are challenging and difficult, especially for minority, first generation and non-traditional college students and that emotional intelligence influences students' achievement and retention during the transition period. For instance, Nelson and Low (2004) reported such a relationship among high school graduates in the first year of college in Texas Universities and colleges. Other studies in Texas, USA, found a significant relationship between academic performance and emotional intelligence for both high school and college students during transition in South Texas (Stottlemyer, 2002; Vela, 2003). Likewise, Parker et al. (2004) found that emotional intelligence is a predictor in identifying academically successful and academically unsuccessful students during transition periods.

Present Study

The literature shows that there is dearth of research on the influence of emotional intelligence on academic achievement among university students in Barbados in spite of the importance of emotional intelligence in life achievement and success and its potential usefulness in the context of academic institutions. It is against this backdrop that this research was conducted to find out whether emotional intelligence predicts academic achievement and career success among some undergraduate psychology students at UWI, Barbados.

Research Questions:

Specifically therefore, this study addresses the following three research questions:

1) Is there a significant relationship between emotional intelligence and academic achievement amongst undergraduate students in Barbados?

2) What is the relative contribution of emotional intelligence components to academic achievement amongst undergraduate students in Barbados?

3) What are the joint contributions of the predictor variables to academic achievement?

Method

Participants

The sample consisted of 151 out of 154 undergraduate students who undertook the Introduction to Developmental Psychology course during 2009/2010 at UWI, Barbados with age ranging from 16 to 52 years (*Mean age = 22.8years, SD =7.6years).Sixty three were males and, 88 females*. Ninety two students were from the Faculty of Humanities and Education, 50 from the Faculty of Social Science and 9 from Pure and Applied Sciences. The great majority (127) of students were from Barbados, while the remaining were from other Caribbean Islands such as St Vincent, Trinidad and Tobago, St Lucia, Jamaica, Grenada and Canada.

Measures

Barchard (2001)'s Emotional Intelligence Scale.

Barchard (2001)'s Emotional Intelligence Scale has two sections. Section A contains demographic variables such as gender, age, faculty etc., while Section B consists of seven subscales with 68 items measuring the different components of emotional intelligence. Sample items include:

- Positive Expressivity *"Express my affection physically", "Have difficulty showing affection"*.
- Negative Expressivity *"Can't help but look upset when something bad happens", "Keep my feelings to myself, regardless of how unhappy I am."*
- Attending to Emotions *"Think about the causes of my emotions", "Rarely think about how I feel"*
- Emotion-based Decision-making. *"Believe emotions give direction to life", "Plan my life logically"*
- Responsive joy *"Feel other people's joy", "Rarely get caught up in the excitement"*
- Responsive Distress *"Easily moved to tears", " Am not easily disturbed by events"*
- Empathic concern *"Concerned about others", "Feel little concern for others"*.

Barchard (2001) reported gender-specific internal consistency values for each of the seven components, ranging from .59 to .81 for males and from .63 to .83 for females. A pilot study was carried out by the researcher among 40 UWI students to ensure the suitability of the instrument for the Caribbean context. The alpha reliability coefficients of the 7 components range from .60 to .82, indicating that the instrument has a high internal consistency as reported by Barchard (2001). The commonly accepted rule of thumb for describing internal consistency using Cronbach's alpha is .7 or .8 (George, & Mallery, 2003; Kline, 1999). However, Cortina (1993) affirms that a greater number of items in a test can artificially inflate the value of alpha, and scales with alphas less than .7 are not necessarily not valid or unreliable. For instance popular scales like Rosenberg Self-Esteem Scale (Rosenberg, 1965) and Cognitive Reflection Test (Frederick 2005) have alpha values less than 0.7.

Academic Achievement Scale

The *Academic Achievement Scale* assesses the students' knowledge of the topics covered in Introduction to Developmental Psychology class through a 50-item multiple choice test. The items were generated from the topics covered during the first eight weeks of lectures, including the nature of developmental psychology; principles of human development; heredity and environmental factors; research methods in developmental psychology; Freud's and Erickson's personality development theories, Piaget's cognitive development theory, and Vygotsky's zone of proximal development theory amongst others (See Appendix for a sample of items). Achievement scales have also been developed and used in various studies (Fortman 2006; Babalola & Fayombo 2009). Although the academic achievement test in this study was used

for research purposes, it was also designed to monitor students' learning and to provide ongoing feedback for both the students and the lecturer. This is why it was preferred to the students' GPA or end of semester examinations. Moreover, students would have to provide a form of identification to be able to correlate their emotional intelligence with GPA, which would have posed issues of confidentiality. Furthermore, asking students to self report their GPA had been found to be very unreliable as reported by Zimmerman, Caldwell and Bernat, (2002).

The initial version of the instrument was given to experts for suggestions and comments before coming up with the final version. The choice of items was subjected to internal consistency analysis yielding a coefficient alpha of .67.

Results

The results in Table 1 show a minimum score of 10 and maximum scores of 45, 50, 50, 45, 50, 50 and 50 respectively in the different components of emotional intelligence. Academic achievement ranged from 0 to 50.

Table 1: Means and standard deviation of emotional intelligence and academic achievement scores

Variables	Minimum	Maximum	Mean	Standard Dev
Gender	1	2	1.58	0.49
Age	16	52	22.82	7.56
Positive Expressivity	10	45	33.52	8.47
Negative Expressivity	10	50	31.46	11.44
Attending to Emotions	10	50	33.47	9.38
Emotion-based Decision-Making	10	50	32.09	10.88
Responsive joy	10	46	32.94	9.05
Responsive distress	10	50	31.75	7.96
Empathic Concern	10	50	29.24	8.71
Academic Achievement	0	50	26.68	13.15

The findings displayed in Table 2 show significant positive correlations between academic achievement and the emotional intelligence components of attending to emotions *(r=.58, p<0.05);* positive expressivity *(r=.44, p<0.05)*; empathic concern *(r=.36, p<0.05);* emotion-based decision-making *(r=.33, p<0.05);*responsive joy *(r=.33, p<0.05)* and responsive distress*(r=.18, p<0.05);* and a negative correlation with negative expressivity *(r= -.50, p<0.05)*. The positive correlations suggest that higher academic achievement is associated with a greater tendency to be able to think about the causes of their emotions intelligently; express affection physically; show concern for others; listen to their feelings when making important decisions, and feel other peoples' joy or happiness. Contrarily, the more people say that they express their upsetting feelings, including anger and sadness, the less their academic achievement.

Table 2 Correlations between academic achievement and emotional intelligence *(n=151)*

Variables	1	2	3	4	5	6	7	8
1) Academic Achievement	-							
2) Attending to Emotion	.58**	-						
3) Negative Expressivity	-.50**	-.36**	-					
4) Positive Expressivity	.44**	.45**	-.35**	-				
5) Empathic concern	.36**	.46**	-0.08	0.07	-			
6) Emotion-based decision-making	.33**	.48**	.27**	.24**	.27**	-		
7) Responsive Joy	.33**	.56**	-.20*	.41**	.30**	.34**	-	
8) Responsive Distress	.18*	.23**	-0.08	.11*	.24**	.24**	.46**	-

** significant (p<0.05)

The second objective of the study was to estimate the relative contribution of the predictor variables to the variance in academic achievement. To this end, stepwise regression analysis was computed with academic achievement as the dependent measure and the emotional intelligence components being the predictors. As can be seen in Table 3, step 1, attending to emotion alone accounted for 34% (*R*-square = 0.338) of the variance in academic achievement; the inclusion of negative expressivity accounted for *43% (R-square 0.434)* which resulted in additional 9% in step 2; positive expressivity was added in step 3 which accounted for 45% *(R-square = 0.452)* and this resulted in additional 2%; empathic concern was included in step 4 which accounted for *48% (R-sq = .476)* and this was found to be significant *(F(4,146) = 33.19, p < .05).* However, the inclusion of emotion-based decision-making, responsive joy and responsive distress in steps 5, 6 and 7 respectively did not make any significant difference, indicating that these emotional intelligence components did not make significant relative contributions to academic achievement. In step 4, the standardized *β* values show the decreasing order of the predictors, showing that attending to emotion was the best predictor, followed by negative expressivity, positive expressivity and empathic concern respectively.

The third objective of the study was to investigate the joint contributions of the predictor variables. As seen in Table 3 step 7, the seven components of emotional intelligence accounted for *48% (R-square = 0.480)* of the variance in academic achievement, and this was found to be significant *(F (7,143) = 18.85, p < .05).* Table 4 displays information of the predictors included in the model, showing that emotion-based decision-making, responsive joy and responsive distress were excluded, and that academic achievement was only partially predicted by emotional intelligence.

Table 3: Stepwise multiple regression analysis predicting students' academic achievement

Predictors	SEb	β	R-Sq	ΔR2	t	Significance	F
Step 1							
Attending to Emotion	0.093	.581**	0.338	.34**	8.72	. 000	76.11.
Step 2							
Attending to Emotion	0.093	.461**			6.96	0	
Negative Expressivity	0.076	-.333**	0.434	.09**	-5.02	0	56.81
Step 3							
Attending to Emotion	0.099	.405**			5.75	0	
Negative Expressivity	0.077	-.300**			-4.46	0	
Positive Expressivity	0.109	.151*	0.452	.02*	2.16	0.033	40.36
Step 4							
Attending to Emotion	0.11	.306**			3.89	0	
Negative Expressivity	0.076	-.311**			-4.71.000		
Positive Expressivity	0.108	.180*			2.57	0.011	
Empathic Concern	0.082	.179*	0.476	.02*	2.62	0.01	33.19
Step 5							
Attending to Emotion	0.117	.306**			3.89	0	
Negative Expressivity	0.077	-.311**			-4.71	0	
Positive Expressivity	0.108	.180*			2.57	0.011	
Empathic Concern	0.082	.179*			2.62	0.012	
Emotion-based							
Decision-making	0.1	0.011	0.476	0	0.715	0.357	26.38
Step 6							
Attending to Emotion	0.124	.322**		3.64	0		
Negative Expressivity	0.077	-.307**		-4.483	0		
Positive Expressivity	0.112	.190*			2.65	0.009	
Empathic Concern	0.083	.183*			2.63	0.009	
Emotion-based							
Decision-making	0.1	0.016			0.715	0.487	
Responsive joy	0.109	-0.052	0.478	0	0.696	0.817	21.99
Step 7							
Attending to Emotion	0.125	.322**			3.64	0	
Negative Expressivity	0.077	-.307**			-4.483	0	
Positive Expressivity	0.112	.190*			2.65	0.008	
Empathic Concern	0.083	.183*			2.63	0.013	
Emotion-based							
Decision-making	0.101	0.016			0.696	0.357	
Responsive joy	0.119	-0.052			0.232	0.476	
Responsive Distress	0.114	0.049	0.48	0	0.232	0.875	18.85

SE b   (unstandardised coefficients showing the predicted increase in the value of the criterion variable)

β   (the standardized beta coefficients, gives a measure of the contribution of each variable to the model)

ΔR^2   (R Square Change)

t   (gives a rough indication of the impact of each predictor variable, the bigger the t value, the larger the impact of the predictor variable on the criterion variable)

R-sq   the square of the measure of correlation and an indication that the model is fit for future prediction of academic achievement among university student

Table 4: Stepwise unstandardised and standardised regression coefficients for the variables included in the model

Predictors	SEb	β	R-Sq	ΔR2	t	Significance	F
Step 1							
Attending to Emotion	0.093	.581**	0.338	.34**	8.72	. 000	76.11.
Step 2							
Attending to Emotion	0.093	.461**			6.96	0	
Negative Expressivity	0.076	-.333**	0.434	.09**	-5.02	0	56.81
Step 3							
Attending to Emotion	0.099	.405**			5.75	0	
Negative Expressivity	0.077	-.300**			-4.46	0	
Positive Expressivity	0.109	.151*	0.452	.02*	2.16	0.033	40.36
Step 4							
Attending to Emotion	0.11	.306**			3.89	0	
Negative Expressivity	0.076	-.311**			-4.71	0	
Positive Expressivity	0.108	.180*			2.57	0.011	
Empathic Concern	0.082	.179*	0.476	.02*	2.62	0.01	33.19

Discussion

This study investigated the relationships between emotional intelligence and academic achievement among psychology undergraduates in Barbados. The findings show that academic achievement is positively and significantly related with attending to emotions, positive expressivity, empathic concern, emotion – based decision-making, responsive joy and responsive distress, and negatively correlated with negative expressivity. These correlations are quite expected and consistent with the extant literature in this field, namely that emotional intelligence significantly predicted academic achievement among university students (eg. Nasir and

Masur 2010; Rozell, Pettijohn & Parker 2002; Farooq 2003). This finding may be explained by the reciprocal bidirectional relationship between intelligence and emotions (Mayer and Salovey, 1997; Snarey & Vaillant 1985). Those participants who attend to, and are aware of, their emotions, are likely to think about the causes of their emotions in order to deal with them intelligently which may also facilitate productive academic activities. Likewise, those who are positively expressive may express their positive emotions and show physical affection, which may contribute to healthy relationships and consequently to academic achievement. Likewise, those who are empathetic are likely to have relationships that foster academic activities. Similarly, students who listen to their feelings when making important decisions and who are aware of their and other people's emotions, tend to manage their emotions more intelligently and may be more academically oriented. The findings of this study, however, contradicts those of Shipley, Jackson and Segrest (2010) who found that the global trait emotional intelligence was not significantly associated with academic achievement among a sample of Caucasian, African American, Hispanic and Asian undergraduate business students. One explanation for this apparent contradiction may be due to participants' different background; moreover, emotional intelligence has many components and areas, and the two studies may have underlined different aspects of emotional intelligence in their investigations.

The negative correlation between academic achievement and negative expressivity is also expected. It is possible that participants who have the tendency to express their negative expressions non verbally, may underachieve, at least in part, because of the negative feelings they may tend create around them. Additionally such students may lack the ability to understand and control the motivation for their behaviour (Bradberry & Greaves 2005), suggesting that they would benefit from appropriate emotional skills necessary for academic achievement as well as career success and fulfillment.

In terms of the relative contribution of the predictor variables to academic achievement, the results corroborate those of Brackett, Raquel, and Marquez (2006) who reported that emotional intelligence was moderately related to social competence and predicted students' final grades. Emotion–based decision-making, responsive joy and responsive distress did not have any significant relative contribution to the variance in academic achievement indicating that some emotional intelligence skills are more important than others. One explanation for these findings is that the stepwise method conducted ensures that only the minimum number of variables is included to predict the criterion variable (Brace, Kemp & Snelgar 2009). Thus, the variables that contributed to the model (attending to emotion, negative expressivity, positive expressivity and empathic concern) were retained while other variables (emotion – based decision-making, responsive joy and responsive distress) which did not have any significant relative contribution to the variance in academic achievement were excluded. This suggests the need for further research to see whether the findings of this study may be replicated. The lack of contribution to the variance in academic achievement by emotion-based decision making, responsive joy and responsive distress, suggests that some students who probably listened to their feelings when making important decisions, base their goals in life on inspiration

rather than logic or even plan their lives on the basis of on their perceived lack of skills necessary to handle frustration, control emotions and get along with people, skills which are characteristics of high achievers (Snarey & Vaillant 1985). On the other hand, the predictive power of attending to emotions may be an indication that those who attend to and control their emotions and think intelligently, are likely to achieve by virtue of having learnt specific EI skills such as self-control, which would have helped them to behave more responsibly and prioritize the time needed for studying as opposed to other activities.

Finally, participants who score high on emotional intelligence tend to manifest requisite skills necessary for academic achievement which enhance their academic output (Kolb & Hanley-Maxwell, 2003; Richburg & Fletcher, 2002). This finding is in keeping with other research suggesting that EI and other non-traditional measures are just as predictive of success as traditional IQ tests (Low et al., 2004; Low & Nelson 2005; Stottlemyer 2002). It should be noted that measures introduced in this study have not been tried in large samples. Hence further studies are required to further investigate the contributions of the variables that did not contribute significantly to the variance in academic achievement in this study.

Conclusion

The findings of this study suggest a framework positing emotional intelligence components such as attending to emotion, negative expressivity, positive expressivity and empathic concern, as predicting academic achievement amongst university students. This framework may be useful to educators in higher education institutions in their attempts to improve the academic performance of students in psychology and related areas, as well as preventing academic failure.

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