The relationship of dimensions of emotional intelligence and academic performance in secondary school students

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ABSTRACT
The study was conducted to investigate the relationship between the identified five dimensions of emotional intelligence, namely self-awareness, emotional management, self motivation, empathy, interpersonal skills and academic performance. This study aims to identify whether the five dimensions of emotional intelligence have been able to contribute to academic performance. Statistical inference of the Pearson-r and multiple regression is used to analyze the data. The results showed that the significant relationship between self awareness (r = 0.21), emotional management (r = 0.21) and empathy (r = 0.21) at the level of p <0.05 with academic performance. Findings from multiple regression analysis (stepwise) showed that only three dimensions of emotional intelligence which is self-awareness (β = 0.261), self motivation (β = 0.182) and empathy (β = 0.167) accounted for 8.7% of variation in criterion (academic performance). Research also presented a model designed to reflect the relationship between the dimensions of emotional intelligence and academic performance. These studies imply that the level of emotional intelligence contributes to and enhances the cognitive abilities in student. Thus, in increasing student academic performance. The stability of the emotional intelligence of a student will help to produce a competent generation and successful country in line with the philosophy of education.

Introduction
In these increasingly challenging times, especially school students and the general public to face the wave of globalization and secularism. Thus, the ability of self-control of emotions is a matter of great importance for not carried away by the flow of negative and evil elements. Therefore, a high emotional intelligence helps maintain a state of harmonies and quiet in oneself and finally be more self-confident in dealing with the challenges of living and learning in educational institutions. High emotional intelligence can contribute to a student in the learning process (Goleman, 1996; Elias, Ubriaco, Reese et al., 1992, Svetlana, 2007). The purpose of study was conducted to determine whether the identified five dimensions of emotional intelligence as the self-awareness, emotional management, self motivation, empathy and interpersonal skills contribute to academic performance.

Emotional Intelligence
In early 1940, David Wechsler has been discussing the concept of intelligence that encompasses both elements of the intelligence quotient of cognitive (intellectual) and non-cognitive intelligence (emotional). But only the cognitive aspects of the observations and the response received so rapidly, while non-cognitive aspects aside.

Actually, earlier in the year 1920 E.L. Thorndike has talked about the concept of social intelligence that has been considered as the basic for the development of the theory of emotional intelligence (Goleman, 1995). Social intelligence is essentially the ability to understand other people what motivates them, how they work, how to work with them and the ability to act wisely in the relationship between human beings. Thus, self-awareness, empathy, and dealing with interpersonal relationships are the core of emotional intelligence is actually the basic dimensions of social intelligence.

In 1980, Dr. Reuven Bar-On began research to determine the success and the ability of a person in his life than anyone else. From the results of his research, he found a lot of intelligence and non-cognitive factors have contributed to the success of a person in his life. Later in 1985, Dr. Reuven Bar-On also coined the term EQ (Emotional Quotient) to reflect the approach in the assessment of general intelligence. He describes the emotional intelligence reflects one’s ability to negotiate well with others and control over their own sense of self. He also displays emotional intelligence reflects one's ability to negotiate with the daily environment challenges and helps predict the life of him, including career and personal affairs. He also suggested there was a scale of five components of emotional intelligence is intrapersonal, interpersonal, stress control, the ability to adapt and general mood.

Higgs and Dulewicz (1999) gives the definition of emotional intelligence is widely understood sense of self and ability to handle those feelings without influenced by it, is able to motivate themselves to complete the work, creative, and strive to achieve the maximum level, notice the feelings of others and handle social relationships effectively. Therefore, they suggested that the seven elements of emotional intelligence is self-awareness, the preservation of emotion, motivation,
interpersonal sensitivity, persuasion, firmness and prudence with integrity. Professor Howard Gardner is a study in the field of human intelligence and has established a theory that explains the various intelligence quotient of the number owned by men. He discovered the existence of seven types of intelligence. Among the seven intelligences, two intelligence known as intrapersonal intelligence and interpersonal intelligence is a component that is included in emotional intelligence. Intrapersonal intelligence is the ability of someone to control himself through knowledge and understanding of feelings, desires, needs and personal goals. With the abilities of this, one can motivate himself, impulse control and bad faith, lack of acting hastily. While interpersonal intelligence is the ability and emotional sensitivity to the psychological state of others. This ability helps a person to choose an adequate response, to feel empathy and communicate well with others. Clearly seen that the person who has these both intelligence and will be shaping a high emotional intelligence.

After that, the term emotional intelligence and academic writing exists in a series of John D. Mayer and Peter Salovey in 1990, 1993 and 1995. Mayer and Salovey (1993) was the first to present an academic about their findings in the field of emotional intelligence. They define emotional intelligence as a kind of social intelligence that involves the ability to control the emotions of self and others, to distinguish between types of emotion, using information to guide thinking and actions of a person. According to them, emotional intelligence can be categorized into five aspects of the dominance of self-awareness, emotional management, self motivation, empathy and interpersonal skills.

(i) Self-awareness of the self-observation and identification of a feeling when it appears.
(ii) Emotional management is the feeling that it is sufficient to handle the behavior, recognizing the feelings behind.
(iii) Self-motivation is a move to the goal of positive emotions, better self-control and to delay gratification and impulse weakens.
(iv) Empathy is sensitive to the feelings of others, caring and accepting their perspective and appreciate the differences that exist in the feelings of others.
(v) Interpersonal skills to control the emotions of other people, have social competence and social skills.

Later, Mayer and Salovey (1997) refine the definition of emotional intelligence as "the ability to detect emotions, to enter and create emotions that help thinking, to understand emotions and emotional knowledge acquired, always thought to control emotions to promote emotional and intellectual development." They believe the combination of the idea that emotion makes thinking smart and intelligent thinking about emotions.

Again, Mayer et al. (2008) stated that some individuals have a greater capacity than others to carry out sophisticated information processing about emotions and emotion-relevant stimuli and to use this information as a guide to thinking and behavior. Derived from this statement, it seem that individuals with high emotional intelligence pay attention to, use, understand, and manage emotions, and these skills serve adaptive functions that potentially benefit themselves and others.

The term emotional intelligence became popular and mainstream in the discussion of intelligence exists only after the publication of Daniel Goleman in 1995. He discussed that IQ contributes only 20% in the success of life and the rest by other factors. These factors may include emotional intelligence, luck and social class. He believes that emotional intelligence has a stronger influence in IQ. Moreover, emotional intelligence can be enhanced if taught in a certain way. Goleman (1995) defines emotional intelligence as the ability to understand the sense of self and others, to motivate themselves and regulate emotions in both self and personal relationships with others.

Based on the above statement, the researcher developed a model attempt to describe the relationship between five dimensions of emotional intelligence and academic performance. This model is built by showing whether the dimension of self-motivation to work as a mediator to contribute to academic performance.


In order to support the model mentioned above, discussion the past researches and literature reviews about relationship between emotional intelligence, in particular dimensions of emotional intelligence to academic performance are essential.

**Method**

**Participants**

The subjects were secondary school form four students (N = 370) with 127 male students (34.32%) and 243 female students (65.68%). The research subjects are also categorized by the three main ethnic Malays (50%), Chinese (42.16%) and India (7.84%).

**Measures**

Methods used in this study was stratified random sampling based on population characteristics, and uses the form survey instrument questionnaire.

**Instruments**

The instruments used in this study is questionnaire. Among the modified test is as follows:

i. Test the ability of self-awareness (Dann, 2001). This test contains 20 questions that test one's ability to recognize personal feelings. Researchers to modify the question by the students' studies.

ii. Test the ability of emotion (Dann, 2001). This section also contains 20 questions that test one's ability to control his emotions.

iii. Empathy Scale (Caruso and Mayer, 1997). This scale has 30 items and the researchers chose 20 items and make adjustments to better fit the sample.

iv. Intrinsic Motivation Inventory (IMI). This inventory was done in a number of research related to intrinsic motivation and self-control (Ryan, 1982; Ryan, Mims, and Koestner, 1983; Plant and Ryan, 1985; Ryan, Koestner, and Deci, 1991; Deci, Eghrari, Patrick, and Leone, 1994). This inventory includes several aspects, including assessment of the task, the perception of an
activity carried out and so forth. A total of 20 items were selected and modified as the study questionnaire items.

v. Interpersonal Skills (Baer and Zimbardo, 1976). This test is a modification of Baer (1976) and Zimbardo (1976) includes several items that reflect interpersonal skills and a style. Researchers chose 20 items that match with this review.

**Procedure**

**Research Design**

Studies conducted a survey with a focus on inference the relationship of emotional intelligence on academic performance of students in some secondary schools in Johor Bahru.

This study describes the relationship between emotional intelligence and academic performance. The study also looked in detail the relationship of each dimension emotional intelligence, where self awareness, emotional management, self motivation, empathy and interpersonal skills of the students' and their academic performance. This study was also conducted to determine the best predictors of academic performance.

**Analysis**

Data were analyzed using Pearson-r to test the relationship between the dimensions of emotional intelligence and academic achievement. Multiple regression (stepwise) was used to determines the predictor of academic performance. All data were processed using SPSS.

**Results**

**Regression Analysis**

Null Hypothesis 1: There is no significant contribution of the dimension of self-awareness, emotional management, self motivation, empathy and interpersonal skills and academic performance

Regression analysis involving the five predictors (self-awareness, emotional management, self motivation, empathy and interpersonal skills), while the dependent variables of academic performance as (criterion) for all five independent variables. Table 1 shows the results of multiple regression (stepwise). From the analysis carried out there was a significant variance of the factor dimensions (self-awareness, self-motivation and empathy) to criterion academic performance.

Table 1 shows the results of the correlation between the dependent variable (self-awareness, emotional management, self motivation, empathy and interpersonal skills) and independent variables (academic performance). Results can be viewed through three variations of the analysis (ANOVA) shows significant contributions.

There is a significant contribution of self-awareness and academic performance, \( F(1,368) = 16,958, p < .000 \) where \( p = .000 \). For self-motivation and academic performance is significantly contribute \( F(2,367) = 12,193, p < .05 \) where \( p = .000 \). And there is a significant contribution of empathy with academic performance \( F(3,366) = 11,564, p < .05 \) where \( p = .000 \). While the emotion management and interpersonal skills do not have a significant contribution to academic performance.

Based on Table 2, the analysis of \( R^2 \) for model 1 (self-awareness) is 0.044. The smaller the \( R^2 \), the less capable independent variables (self-awareness) to explain the dependent variable (academic performance), \( F(1,368) = 16,958, p = 0.000 <0.05 \). When viewed on the Beta, dimensions of self-awareness (beta = 0.21, \( t = 4118, \) Sig = 0.000 and \( R^2 = 0.044 \)). This means that the proposed model fit the data in the percentage of only 4.4 percent. The conclusion is also supported by analysis of variance is significant that the value of 0000 is significantly lower than the specified significant level of 0.05. This finding means that the first predictor of self-awareness shown by the first model accounted for 4.4 per cent increase in change criterion (academic performance).

Value analysis of \( R^2 \) for model 2 (motivation) is 0.062. The smaller the \( R^2 \), the less capable independent variable (motivation) to explain the dependent variable (academic performance), \( F(2,367) = 12,193, p = 0.000 <0.05 \). When viewed on the Beta, self-motivation dimension (beta = -0.169, \( t = -2673, \) Sig = 0.008 and \( R^2 = 0.0062 \)). This means that the proposed model fit the data in the percentage is only 6.2 per cent only. The conclusion is also supported by analysis of variance is significant that the value of 0000 is significantly lower than the specified significant level of 0.05. This finding means that the second predictor of self-motivation demonstrated by the two models accounted for 6.2 percent of additional changes in criterion (academic performance).

Through the analysis of \( R^2 \) for model 3 (empathy) is 0.087. The smaller the \( R^2 \), the less capable independent variables (empathy) to explain the dependent variable (academic performance), \( F(3,366) = 11,564, p = 0.000 <0.05 \). When viewed on the Beta, the dimensions of empathy (Beta = 0.167, \( t = 3119, \) Sig = 0.002 and \( R^2 = 0.0087 \)). This means that the proposed model fit the data in the percentage is only 8.7 per cent only. The conclusion is also supported by analysis of variance is significant that the value of 0000 is significantly lower than the specified significant level of 0.05. This finding means that the third predictor of empathy shown by the three models accounted for 8.7 per cent increase in change criterion (academic performance).

Based on the value of \( R^2 \) for all three models can be concluded that this finding indicates that 4.4 percent dimensional self-awareness contributes to academic performance, the percentage increase rose to 6.2 percent when contributions to dimensions of self-motivation are taken into account and further to 8.7 percent if the dimensions of empathy are into account the change in academic performance.

The results of the analysis also allows researchers to get a regression equation that can be used to predict the Y value in the future. The regression analysis results obtained as follows:

\[
\begin{align*}
Y &= \beta_0 + \beta_1 x_1 + \beta_2 x_2^2 + \beta_3 x_3 + \beta_4 x_4 + \text{Constant Standard Error} \\
\beta_1 &= 0.21 \text{ (Self Awareness)} \\
\beta_2 &= -0.169 \text{ (Self Motivation)} \\
\beta_3 &= 0.167 \text{ (Empathy)} \\
\text{(Constant Standard Error)} &= 0.549 \\
\text{(Constant)} &= 1.438
\end{align*}
\]

From the analysis based on Table 2, it appears that there is a significant variance for the dimensions (self-awareness, self-motivation and empathy) to criterion academic performance, \( F = 16,958, \) Sig = 0.000 <0.05 (self-awareness), \( F = 12,193, \) Sig = 0.000 <0.05 (motivation) and \( F = 11,564, \) Sig = 0.000 <0.05 (empathy). When viewed on the Beta, dimensions of self-consciousness (beta = 0.21, \( t = 4118, \) Sig = 0.000 and \( R^2 = 0.044 \)), self-motivation dimension (beta = 0.167, \( t = 3119, \) Sig = 0.002 and \( R^2 = 0.0087 \)) and dimensions of empathy (Beta = 0.167, \( t = 3119, \) Sig = 0.002 and \( R^2 = 0.0087 \)).

**The conclusion of that regression results,**

i) When the dimensions of self-awareness increases per unit, then the scores of academic performance will increase by 4.4
ii) When the dimensions of self-motivation to increase the unit, then the scores of academic performance will increase by 6.2 percent.

iii) When the dimensions of empathy increase per unit, then the scores of academic performance will increase by 8.7 percent.

It can be concluded that these findings show that 4.4 percent dimensional self-awareness contributes to academic performance, the percentage increase rose to 6.2 percent when contributions to take into account the dimension of self-motivation and increasing to 8.7 percent if the dimensions of empathy is taken into account the change in student academic performance.

Null Hypothesis 2: There is no predictor of self awareness, emotional management, self-motivation, empathy and interpersonal skills are significant towards academic performance.

Regression analysis (stepwise) involves five predictors (self-awareness, emotional management, self-motivation, empathy and interpersonal skills). While academic performance is as (criterion) on these five variables. Diagram 3 shows the results of multiple regression (stepwise). From the analysis carried out found that there is a significant variance for the dimensions of self-awareness, self-motivation and empathy to students' academic achievement (criterion).

![Diagram 3: Model Predictor Dimensions of Self-Awareness, Self Motivation and Empathy on Student Academic Achievement](image)

Discussion

This study aims to show a significant relationship between five dimensions of emotional intelligence and academic achievement. At the same time also see the dimensions of dominance and to contribute to academic achievement. From the findings, only dimension of self-awareness, self-motivation and empathy showed a significant relationship as a predictor of academic performance. Although the contribution of small value where the $R^2$ of self awareness $= 4.4\%$, $R^2$ increased to 6.2% by taking into account the dimension of self-motivation and $R^2$ continues to increase up to 8.7% when empathy is taken into account, but to prove their role in determining the success of a person in the academic.

This was further proved by Tapia (1998) in which the study showed empathy dimension has significant contribution to students' decisions. This view is also supported by Feshbach & Feshbach (1987) which states that higher capacity in empathy towards achieving good grades. Students who have empathy is sensitive to the environment and can adapt to the environment, such as happy, friendly, angry, sad or sick heart. The students will be better liked by friends and create conducive environment to face learning, which indirectly increased academic performance. (Azizi, Shahrin & Nordiana, 2009)

Similarly, the dimensions of self-motivation to show a strong significant on academic performance. The findings are consistent with studies Wentzel (1989), where he also agreed that any goal-oriented to obtain good results. Wan Rafaei (1998) also succeeded in proving motivation in a person who will bring a positive impact especially good academic performance. Students who have a motivation to have the urge to success. They are more confident in taking action. (Azizi, Shahrin & Nordiana, 2009)

This finding also supports the study of Holahan and Sears (1995) which stated that any person who is able to recognize themselves and feel themselves to be more successful in their careers.

Conclusion

One important factor in determining the success of learning is to give full attention and concentration during the process of teaching learning. Attention and focus is to help students develop cognitive intelligence and make it easier to remember facts or information communicated (Cross, 1974). It is here that the high level of emotional intelligence can help calm the mind and thus to increase the absorption of information received. Thus, it will contribute to the achievement of results. Maria (2004) indicate that there is positive linear relationship between emotional intelligence and academic performance. It is recommended that students academic achievement should be enhanced with the use of emotional intelligence training. (Hammed, 2010).

Outstanding academic performance is the key targets and goals for each student regardless of ethnic group. In order to obtain good results, apart from learning the techniques of effective and well planned, students should be able to recognize themselves in particular in terms of self emotional so that it does not become a stumbling block to success. Hence the need to identify themselves, emotional intelligence should be noted not only for academic interest but also of future success in life. Efforts to increase students' emotional intelligence should be considered during the process of teaching and learning in the classroom with the aim of building a resilient and capable human face of globalization and changing demands.

References


Hammed, A. (2010). Emotional Intelligence and Self Efficacy as Determinants of Academic Achievement in English Language Among Students in Oyo State Senior Secondary School. Ife Psychologia.


Shoda, Y., Mishel, W., and Peake, P. K. (1990). Predicting adolescent cognitive and self-regulatory competencies from


Table 1: Correlation matrix between the dependent variable and independent

<table>
<thead>
<tr>
<th>Variable</th>
<th>SD</th>
<th>KE</th>
<th>MD</th>
<th>EP</th>
<th>KP</th>
<th>PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD</td>
<td>3.47 (0.449)</td>
<td>0.907</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KE</td>
<td>3.54 (0.436)</td>
<td>0.871</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MD</td>
<td>3.38 (0.445)</td>
<td>0.841</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EP</td>
<td>3.40 (0.310)</td>
<td>0.812</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KP</td>
<td>3.36 (0.401)</td>
<td>0.783</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA</td>
<td>3.66 (0.902)</td>
<td>0.754</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: SD = self awareness, KE = Emotional management, MD = self Motivation, EP = Empathy, KP = Interpersonal skill, PA = Academic Performance *p < .05, **p < .01

Table 2: Regression Analysis Results for Dimensions of Self-Awareness contributions, self-motivation and empathy with the Academic Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R Square</td>
<td>F Change</td>
<td>df 1</td>
<td>df 2</td>
<td>Sig.F Change</td>
</tr>
<tr>
<td>1</td>
<td>.210</td>
<td>.044</td>
<td>.041</td>
<td>.88307</td>
<td>.044</td>
</tr>
<tr>
<td>2</td>
<td>.250</td>
<td>.062</td>
<td>.057</td>
<td>.87579</td>
<td>.018</td>
</tr>
<tr>
<td>3</td>
<td>.294</td>
<td>.087</td>
<td>.079</td>
<td>.86556</td>
<td>.024</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), self awareness
b. Predictors: (Constant), self awareness, self motivation
c. Predictors: (Constant), self awareness, self motivation, empathy
d. Dependent Variable: Academic Performance

table 3: Regression Analysis Results for Self-Awareness contributions, self-motivation and empathy with Student Academic Performance

<table>
<thead>
<tr>
<th>Variable</th>
<th>Multiple R</th>
<th>Standard error b</th>
<th>Beta</th>
<th>t</th>
<th>Significance of t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self awareness</td>
<td>0.21</td>
<td>0.261</td>
<td>0.054</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Self Motivation</td>
<td>0.25</td>
<td>-0.182</td>
<td>-2.915</td>
<td>0.004</td>
<td></td>
</tr>
<tr>
<td>Empathy</td>
<td>0.294</td>
<td>0.167</td>
<td>3.119</td>
<td>0.002</td>
<td></td>
</tr>
</tbody>
</table>

Table 4: Regression Analysis Results for Self-Awareness and Empathy contributions by self-motivation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Multiple R</th>
<th>Standard error b</th>
<th>Beta</th>
<th>t</th>
<th>Significance of t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self awareness</td>
<td>0.599</td>
<td>0.599</td>
<td>14.344</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Empathy</td>
<td>-</td>
<td>0.070</td>
<td>1.335</td>
<td>0.183</td>
<td></td>
</tr>
</tbody>
</table>

Table 5: Regression Analysis Results for Self Awareness With Empathy

<table>
<thead>
<tr>
<th>Variable</th>
<th>Multiple R</th>
<th>Standard error b</th>
<th>Beta</th>
<th>t</th>
<th>Significance of t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self awareness</td>
<td>0.348</td>
<td>0.348</td>
<td>7.122</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>