Examining the Influence of Emotional Intelligence on Students' Study Approaches and Academic Performance

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Abstract. This study examined the influence of emotional Intelligence on student's study approach and academic performance. A sample of 364 multimedia university students from Melaka was chosen from Foundation in Engineering, IT and Management. Result revealed no significant difference between student's study process and EQ between the genders. The Engineering and IT students have higher EQ and study process as compared to Management student. They experienced higher surface study approach compared to deep study approach. Findings also revealed that there is a significant weak negative relationship between deep study approach and CGPA and no significant relationship between EQ and CGPA. The implications of these findings are potentially important to the process of teaching and learning. Understanding student's study approaches enables instructors to fine tune their strategies of teaching and learning activities in order to help students improve their academic performance.

Keywords: Emotional Intelligence, Study Process, Academic Performance

1. Introduction

Educational area describes two fundamental approaches to learning: deep and surface. Deep learners are active during the learning process. They try to understand the learning materials and able to link the knowledge with life experiences. They find that studying gives them a feeling of deep personal satisfaction. Therefore, they will often spend extra time trying to obtain more information from different sources and not being pleased with the knowledge learned in class. The surface approach is characterized by student's lack of interest in the subject matter. In most cases, surface learners will accept the given knowledge without thinking much about it. They accept teachers as the main single and trusted knowledge source. Their aim is to pass the course while doing as little work as possible. They learn things by route, going over and over the materials until they know them by heart even if they do not fully understand them.

Since students differ in cognitive ability, with some students being better prepared for the university environment than others, the non-cognitive factors such as emotional intelligence (EQ) may supplement or enhance students' cognitive ability. According to Goleman [1] emotional intelligence consists of five components: Knowing our emotions (self-awareness), managing them, motivating ourselves, recognizing emotions in others (empathy), and handling relationships. EQ principles link strongly to a person's attitudes, interpersonal skills, management styles and potential. People with strong EQ balance feelings with reason, logic, and reality. Those with low EQ normally are rigid, inflexible, need rules and structure to feel secure. Various studies have found that emotional intelligence is somehow vital for success and might affect students' achievement, thus it is important for schools to integrate EQ contents in the curriculum.

- The main objectives of this study are as follow:
- to explore the influence of gender on student's study approach and EQ.
- to determine the difference in s[+]tudent's study approach and EQ among foundation students.
- to study the correlation between the students' study approach, CGPA and EQ.
- to examine the influence of emotional Intelligence on the students' study approach and academic performance.

2. Literature Review

Previous research has related a number of factors to examine the student's academic performance. Tramontana, Hooper and Selzer [2] in their study revealed that a variety of sources served as the predictors of students' achievement. These included cognitive abilities, academic readiness, language abilities, motor

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skills, behavioral-emotional functioning, personality, study attitude etc. Cooper [3] identified the differences in learning approaches of two groups of students and discovered that Chinese male students consistently scored higher in deep learning scores whereas the Australian students scored better in the surface approach learning. Cooper further argued that good academic results achieved by the students adopting surface approaches do not support the hypothesis of the negative correlation between the surface approach and the academic performance.

It is also observed that students often move between the surface and deep approaches. The movement depends on the task and the course requirements, particularly in the design of the curriculum, type of assessments, instructors teaching approaches and the students' perceptions of relevance and interest in the course [4]. Gijbels and Dochy [5] discovered that those using deep approach in learning preferred higher-order thinking assessment tasks and non-conventional assessments.

In terms of relationship between levels of study on academic performance, Smith [6] in his paper indicated that there is no significant difference between the learning approaches of a culturally mixed group students in the UAE. It showed that students used mixed approaches in their learning. These may be due to the multicultural learning environment that they have gone through. A research paper conducted by Elias [7] on learning approach and gender found that there might be differences between the male and female students in their study approach. On the other hand, research done by Bilgin and Crowe [8] showed that there is no significant difference in the approaches to learning between local and international students; male and female students. However, there is a significant difference between undergraduate and postgraduate students, with postgraduate students more likely to adopt deep strategies to learning. Dincer and Riza [9] in examining learning approach of science students based on class level and gender found that science students generally have deep learning approaches. However, there is no significant difference when it comes to gender.

Siddiqui [10] used the Revised Two-Factor Study Process Questionnaire (R-SPQ-2F) to examine the differences on gender, age and higher qualifications obtained. Results revealed that students predominantly have higher scores when they utilize the deep approach in their studies. However, no significant differences between these variables were obtained. Richardson [11] in his research to find gender differences in response to the approaches of studying inventory found that there was no consistent evidence of significant difference between the gender in terms of their scores on individual items, subscale or learning orientations.

Research that examined EQ and its relationship to academic achievement also found that students who are weak in adaptability, assertiveness, decisiveness, empathy, or commitment could also be inclined to be weak academically. The study found that motivation is an important factor in reaching the goals of academic achievement [12]. In a similar study done by Azizi et al. [13] in the relationship between EQ of Form 4 students' and their academic achievement found that individual's action gave positive impact in the academic performance. Parker, et al. [14] paper also examining the EQ and academic success: the transition from high school to university also proved that academic success was strongly associated with several dimensions of EQ. In a more recent study, Baljinder & Kuldip [15] in their research on 500 students at the diploma and bachelor levels showed that there was a significant positive relationship between EQ and academic achievement and also between learning styles and academic achievement.

3. Methodology

A sample of 364 students was chosen from Foundation in Engineering, IT and Management students of Multimedia University, Melaka by using the random sampling method. Out of 364 students, 31.3% (115) are engineering students, 13.3% (49) are IT students and 55.3% (203) are Management students. About 49.3% (181) are male and 50.7% (186) are female. In terms of ethnicity, 83.1% are Chinese, while the others are Malay and Indian students.

In this study, we adapted two sets of questionnaire (Study Process Questionnaire and the Emotional Intelligence Questionnaires) with some adaptations to suit the context of this study. Pilot test were performed to ensure the reliability and validity of the questionnaire.

The questionnaire used in this study consists of three sections. First section is the background information of the students. The second section is divided into Part A and Part B. Part A consists of 20 items on questions related to their Study Process. It is an adaptation of the Revised Two-factor Study Process Questionnaire (R-SPQ-2F). Part B consists of 30 items of Emotional Intelligence questions [16]. The 30 questions were divided into 5 categories, namely Self Awareness, Self-Regulation, Motivation, Empathy and Social Skills. Each category consists of 6 items on a 5 point Likert Scale (Strongly disagree, Disagree, Neutral, Agree and Strongly Agree).

The Revised Two-factor Study Process Questionnaire (R-SPQ-2F) is a scale developed by Biggs, et al [17] to determine the students' learning approach. It consists of 20 items on a 5 point Likert Scale (Never, Occasionally, sometimes, Often and Most of the time). For Deep Approach, the items are 1, 2, 5, 6, 10, 13, 14, 17, and 18. For Surface Approach, the items are 3, 4, 7, 8, 11, 12, 15, 16, 19, and 20. The item scores for each approach are added to obtain the two approaches' scale score. The data was analyzed by using SPSS. For reliability the Cronbach Alpha value for deep approach is 0.759 and for surface approach is 0.837. For EQ it is 0.887. Overall reliability is 0.780.

4. Results and Discussion

Table 1: The Arithmetical Mean, Standard Deviation and Significant Value of Study Process and EQ According to Gender

	Gender	N	Mean	SE	*P*
SS	Male	180	3.2228	0.34	0.213
	Female	187	3.1647	0.32	
DS	Male	180	2.8156	0.42	0.378
	Female	187	2.7679	0.34	
EQ	Male	180	3.5089	0.34	0.001
	Female	187	3.3583	0.29	

Table 1 shows the arithmetical mean, standard deviation and significant value of study process and EQ according to gender. On average, males experienced greater surface study (SS) (mean=3.2228, SE=0.34) and deep study approaches (DS) (mean =2.8156, SE=0.42) to females. However, this difference is not significant with $t(365) = 1.248$, $p > 0.05$ for SS and $t(365) = 0.883$, $p > 0.05$.Thus the study showed no significant difference between the means of these two samples. This result is consistent with the study conducted by Richardson [18] which found no consistent evidence of significant difference between the men and the women in their approaches to studying. Naderi at el. [19] in his study of creativity, age and gender as predictors of academic achievement also indicated that there is no significant difference between CGPA and gender was observed. Meanwhile for EQ, variance found to have significant difference between the means for males and females with the p value of 0.001. Mean for males is slightly higher (3.5089) than females (3.3583). This indicates that males perform higher EQ than females. The result is consistent with the study done by Ahmad et al [20] shoed that gender difference on EQ reveals that males have higher emotional intelligence as compared to females.

Table 2: The Arithmetical Mean, Standard Deviation and Significant Value of Study Process and EQ According to Foundation

	Foundation	N	Mean	SE	*P*
SS	Eng & IT	164	3.2726	0.04	0.002
	Mgmt	203	3.1291	0.03	
DS	Eng & IT	164	2.8390	0.04	0.112
	Mgmt	203	2.7527	0.03	
EQ	Eng & IT	164	3.5301	0.04	0.000
	Mgmt	203	3.3530	0.03	

The details of arithmetic means between the different foundations were presented in Table 2. The mean for SS, DS and EQ for Engineering and IT students are slightly higher than of Management students. On average, Engineering, IT and Management students experienced higher surface study process compared to deep study process. Generally, active learning still not significantly performed by these foundation students. The mean of the two groups are significantly different for surface study with $t(365) = 3.101$, $p < 0.05$ and EQ with $t(365) = 0.182$, $p < 0.05$.

To examine the correlation between study process, students' performance (CGPA) and EQ, bivariate correlation was conducted to check the Pearson Correlation Coefficient. The results were presented in Table 3. Surface study approach is positively related to CGPA with a Pearson Correlation coefficient of $r = 0.111$, the significant value is greater than 0.001, thus there is no significant relationship between surface study and CGPA. This result is consistent with the research done by Davindson [21] in studying the relationship of study approach and examination performance. The study indicated that there is no significant relationship between surface study approach and any exam result. On the other hand, deep study approach and CGPA are

negatively related with a value r = -0.234. Since the significant value is less than 0.001, there is a significant weak negative relationship between deep study approach and CGPA. Even though some educators have suggested that the surface approach is associated with less successful academic performance and deep approach is with higher academic performance, the results obtained did not strongly supported the arguments.

Table 3: Correlation between Study Process, Students' Performance (CGPA) and EQ

Study process		CGPA	EQ
Surface Study	Pearson correlation	0.111	0.402**
	Significant (1- tailed)	0.016	0.000
Deep Study	Pearson correlation	-0.234**	-0.24
	Significant (1- tailed)	0.000	0.323
EQ	Pearson correlation	0.27	-
	Significant (1- tailed)	0.306	-
	N	367	367

**. Correlation is significant at 0.01 level (1-tailed)

Apart from these, the results revealed that these foundation students still lack the skills to perform deep study approach. The curriculum system and the course content they had gone through so far mostly required them to memorize the information needed for the assessment only; they failed to distinguish the principles from the examples and that lead to the fact that they were unable to apply the knowledge to other contexts. However, there is a positive relationship between surface study and EQ with a significant value < 0.001. The value r = 0.402 gave the confidence that there is a weak positive significant relationship between surface study and EQ.

Table 4: Students' Academic Performance (CGPA) vs Study Process and EQ

CGPA	Study Process		EQ (Mean =3.43)	
	SS	DS	≥ 3.43	< 3.43
≥ 3.67	37	10	27	20
3.33 – 3.66	64	20	47	37
2.67 – 3.32	109	43	68	84
2.00 – 2.66	40	39	40	39
≤ 1.99	3	2	4	1
Total	253	114	186	181

Table 4 shows the results of students' academic performance (CGPA) versus their study process and EQ. About 36.7% obtained CGPA greater than 3.33. Surprisingly these students who achieved good academic results manifested surface study approach than deep study approach. Out of 131 students who obtained CGPA>3.32, 77% used surface study approach. 62.9% get average result of CGPA between 2.00 to 3.32. These groups of students contributed the highest percentage of those using surface study approaches in their learning. The mean value for EQ is 3.43. The mean falls between the scales of "Neutral" to "Agree" for most of the items. The EQ values were divided into high EQ (≥ 3.43) and low EQ(< 3.43). The result shown that mean was distributed quite equally; 50.7% performed high EQ, and 49.3% for low EQ. From 131 students who obtained CGPA 3.33 and higher, only 39.7% with high EQ. About 58% of them are with high EQ but performed only averagely well in their studies (CGPA 2.0 to 3.32). The study did not show a strong relationship between the EQ and the students' academic performance. Based on the similar study done by Drago [22], the statistical findings showed that there is a weak positive relationship between emotional intelligence and academic achievement.

5. Limitation

This study concentrates on only foundation students, it might not be able to generalize to whole population of university students. The inconsistencies of some of the results might be due to the fact that these students are in the midst of transition from high school to university style of learning environment. The lack of abilities to perform the deep study approaches depends a lot on their previous experiences and ways of teaching and learning in their former schools, where EQ components are not fully incorporated in the curriculum. Future study will examine a larger sample size and involve more faculty students. The length of the study will also be extended to 1 year instead of only 1 semester.

6. Conclusion

The implications of these findings are potentially important to the process of teaching and learning. Understanding the influence of emotional Intelligence on students' study approach and academic performance enables instructors to fine tune their strategies of teaching and learning activities in order to help students learn through proper study approach and hence improve their academic performance.

7. References

[1] Goleman, D. Emotional intelligence. New York, Free press, 1995.

[2] Tramontana, M. G., Hooper, S. R., & Selzer, S. C. Research on the preschool prediction of later academic achievement: A review. *Development Revie.*1998, **8**: 89-146

[3] Cooper, B.J. The enigma of the Chinese learner. *Accounting Education*. 2004, **13**(3): 289-310

[4] Kember, D. Misconceptions about the learning approaches, motivation and study practice of Asian students. *Higher Education.* 2000, **40**: 99-121.

[5] Gijbel, D., & Dochy, F. Students' assessment preferences and approaches to learning: Can formative assessment make a difference? *Educational Studies.* 2006, **32**(4): 399-409.

[6] Smith, L. An investigation into students approaches to learning at a multicultural university using the revised study process questionnaire. *Proceedings of Xth HERDSA Conference*. 2005, 553-541.

[7] Elias, R. Z. Student's approaches to study in introductory accounting course. *Journal of Education for Business*. 2005, March/April, 194-199.

[8] Bilgin, A. & Crowe, S. Approaches to learning in statistics. *Asian Social Science*. 2008, **4**(3): 36-42.

[9] Dincer, T. G. & Riza, A. A. Examining Learning Approaches of Science Student Teachers According to the Class Level and Gender. *US- China Education Review*, 2008, **5**(12): 54-59.

[10] Siddiqui, Z. S. Study approaches of students in Pakistan: The revised two factor study process questionnaire experience. Occasional Report I, December, 2006..

[11] Richardson, J. T. E. Gender differences in responses to the approaches to studying inventory. *Studies in Higher Education.*1993, **18**(1): 3-13.

[12] Rice, D. M. An examination of emotional intelligence: its relationship to academic achievement in army jrotc and the implications for education. A Dissertation for the Degree Doctor of Philosophy, 2006.

[13] Azizi, Y. & Noridiana M. N. The relationship between emotional quotient with form 4 student's academic Achievement. Faculty of Education, University Technology Malaysia, 2006.

[14] Parker J. D.A., Summerfeldt, L. J., Hogan, M. J., & Sarah A. Emotional intelligence and academic success: examining the transition from high school to university. *Personality and Individual Differences.*2004, **36:** 163–172.

[15] Baljinder S. & Kuldip S. The influence of emotional intelligence and learning style on student's academic achievement. *Conference on Scientific & Social Research*. 2009

[16] Bar-On, R. The Emotional Quotient Inventory (EQ – i): Technical Manual. Toronto: Multi – Health Systems, 1997.

[17] Biggs, J., Kember, D. & Leung, D. The revised two factor study process questionnaire: R-SPQ-2F. *British Journal of Educational Psychology*. 2001, **71**: 133-149.

[18] Richardson, J. T. E. Gender differences in responses to the approaches to studying inventory. *Studies in Higher Education*. 1993, **18**(1): 3-13..

[19] Naderi, H., Rohani, A., Aizan, Jamaluddin, S., & Kumar, V. Creativity, age and gender as predictors of academic Achievement among undergraduate students. *Journal of American Science*. 2009, **5**(5): 101-112.

[20] Ahmad, S., Bangash, H. & Khan, S. A. Emotional intelligence and gender differences. Sarhad J. Agric.2009. **25**(1): 127-130.

[21] Davinson R. A. Relationship of study approach and exam performance*. Journal of Accounting Education*. 2002, **20**:
29-44.

[22] Drago, J. M. The relationship between emotional intelligence and academic achievement in nontraditional college students. *Consortium for Research on Emotional Intelligence in Organization* U. S. A. 2004.