

# Improving Malaysian Undergraduates' Emotional Intelligence Skills through Emotional Intelligence Training Program

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## Abstract

The initial stage of university life can be difficult, particularly for first year university students. Lack of emotional control, emotional awareness, and emotional management can lead to many psychological and emotional disorders among this population. Even though earlier studies strongly recommend introducing emotional intelligence training programs (EITP) in educational settings, it has been found that only a small number of universities have offered emotional intelligence (EI) courses for undergraduates. Furthermore, only a limited number of studies have explored methods to enhance undergraduates' EI and establish an EITP in universities that possess a robust theoretical foundation. To reduce the gaps, the study used a quasi-experiment design with 60 experimental groups and 60 control groups drawn from both social or social science and pure science programs at Universiti Putra Malaysia (UPM). Multivariate analysis of variance (MANOVA) presented significant differences in EI scores between treatment and control groups from social or social science fields and pure science fields. Additionally, the paired sample t-test demonstrated that the EITP successfully enhanced the EI skills of treatment groups, while no significant effects were found in control groups. The findings serves as a foundation for implementing EITP in Malaysian public universities. For the recommendation, the study suggests further investigating the EI module to ensure the EITP can be generalized among this population.

**Keywords:** Emotional Intelligence, Emotional Intelligence Training Program, University Students, Universiti Putra Malaysia

## Introduction

Emotional intelligence (EI) is one of the most hotly disputed intelligence topics in contemporary research. Unlike other types of intelligence (such as academic intelligence), EI can be enhanced by formal and informal life experience or intervention. It is now well recognized as a strong predictor of students' academic achievement, adjustment, and

interpersonal connections in higher education (Tee et al., 2023). Mayer and Salovey (1999) defined EI as the ability to control one's own emotions and feelings as well as those of others, recognize and differentiate between various emotions, and use emotions as information to affect one's own thoughts and behaviors. Their efforts to disseminate EI through a succession of article releases have eventually moved interest in EI from the popular media to scientific research circles. A growing body of research has identified EI as another protective characteristic that may have a positive impact on young adult development (Luo et al., 2023; María et al., 2022).

### **Problem Statement**

University students often face numerous psychological stressors stemming from various underlying issues, such as financial difficulties, poor academic performance, feelings of inadequacy, negative peer perceptions, and unsatisfactory relationships with their supervisors. Transition to university could bring a wide range of social, psychological, emotional, and cognitive changes. This is a critical developmental period for undergraduate students as they might shape them into more mature and independent adults in future. For example, the first-year undergraduates need to acclimate themselves to new learning environment, new people and experiences in university life. Therefore, further explore the protective factors or skills university students employ is very important to help them manage well their stress while pursuing their education (Fteiha & Awwad, 2020).

In Universiti Putra Malaysia, a study revealed that almost half of the participants reported substantial levels of anxiety (72.7%), psychological distress (68.9%), and depression (60.6%) (Arifin et al., 2023). According to the study, 42.8% of the participants experienced a significant loss of emotional and behavioral control. The situation can deteriorate if undergraduates do not acquire sufficient EI skills, and they might face difficulties building strong social support network and healthy coping skills to protect themselves from everyday challenges.

### *Review of EITP in Higher Education*

Notable literature reviews revealed that EI intervention could have a significant impact on students' EI (Biju et al., 2023; Carstensen et al., 2019; Waheed & Ghazal, 2020). Expanding beyond traditional classroom settings, Junça Silva and Almeida (2023), investigated the influence of EI online training courses on academic engagement and learning outcomes among 67 university students in northeast Portugal. Through the quasi-experimental study with both randomly assigned experimental and control groups, they demonstrated that online EI training not only increased EI levels but also enhanced academic engagement among participants. The study implied that EI intervention could have comprehensive effect on personal and academic development of students.

Another study performed by Waheed and Ghazal (2020), also provided with similar results, where their study revealed that youths' EI, including its sub-dimensions such as emotional perception, emotional self-understanding, understanding others' emotions, and emotional utilization, can be improved with a one-hour EI instructional module intervention. Although these findings documented the importance of EI intervention, however the sample sizes of some studies varied greatly, with some studies involving very small sample sizes. With these limitations, it may restrict the generalizability of the findings and make it difficult to

draw firm conclusions from the study. Furthermore, the duration of EI intervention in some studies was short, with some lasting only a few hours. Thus, the researchers must exercise caution when applying or interpreting these findings.

#### *Differences in EI Across Fields of Study*

Many studies evidenced that different principles of study could influence the EI scores of students. Özlü et al (2016), sought to investigate the EI scores of students from various fields of study at Atatürk University. Around 305 participants were randomly chosen from the fields of health, social science, and natural science. The study illustrated that natural science students performed slightly low in the EI levels, whereas health and social science students had moderate levels. These variations might result from the curriculum and teaching circumstances that are connected to each profession.

Sanchez-Ruiz et al (2013), conducted a study to investigate differences in trait EI profiles among university majors (computer sciences, law and accounting, business and management, psychology, electrical engineering, and tourism and marketing) among students. The findings showed that psychology students performed better in the trait EI when compared with business and management students, computer science, and electrical engineering. Trait EI profiles may play a role in influencing students to select a specific academic field in university settings. Additionally, individuals studying social sciences (such as psychology) may be gaining emotional tacit knowledge through their university coursework, which could have an effect on their trait EI scores. EI and its relationship to academic achievement among undergraduates in Saudi Arabia have been studied (Saud, 2019). It had been discovered that most of the Saudi undergraduate students achieved high performance in the EI test, which was contradictory with the previous studies. Due to the cultural variations, the researchers suggested expanding the EI-related studies across several cultures in order to have a better understanding of undergraduates' emotional development.

#### **Conceptual Framework**

The fields of study are identified as control variables in measuring the effect of EITP on undergraduates' EI in UPM. Based on the previous study, it has been proved to be one of the influential factors on EI as students' EI scores always vary depending on their academic principles (Özlü et al., 2016). The current study established an EITP based on the Mayer-Salovey ability-based model, aims at facilitating valuable emotional learning for undergraduates in university circumstances. Generally, the intervention consisted of a variety of EI modules and learning activities such as demonstration, sharing, discussion, and role-playing. The EITP introduced basic human emotions, perceiving and expressing emotions, understanding emotions, using emotions to facilitate thoughts, and managing emotions.

According to Salovey and Mayer (1990), the ability to manage one's own and others' emotions, discern among them, and use emotions as information to guide thoughts and behaviors is crucial. They identified and developed EI into four distinct but interconnected branches: perceiving, using, comprehending, and managing emotions. The hierarchy of these branches can be viewed as a progression from fundamental to higher-level skills. EI happens when these four emotional branches converge. The current study hypothesized that EITP may provide students with a wide range of emotional knowledge because this intervention emphasizes the four branches of emotions. The intervention could serve as a platform for

students to exercise their EI skills, and these EI skills could serve as an adaptive function for students to better cope with a distressing situation.

### **Research Methodology**

This study is a quasi-experimental design with experimental and control groups. The quasi-experimental research approach sought to investigate the cause-effect correlations of an intervention, as well as its effectiveness on dependent variables (Hallberg & Eno, 2015). This research design allows the researcher to control extraneous variables while drawing a more precise conclusion between independent (EITP) and dependent variables (EI). Many researchers apply quasi-experimental research design in educational research because it is difficult to perform randomization or true experimental research in educational settings (Gopalan et al., 2020).

#### *The A-SEIS Measures*

The A-SEIS is a hybrid (trait and ability) EI tool designed to examine four key components of EI: perception of emotions, utilization of emotions, understand of emotions, and management of emotions. The modified English and Malay versions of the A-SEIS consist of five factors with 37 items, including 14 for the perception of emotions, 4 for the utilization of emotions, 6 for the understand of emotions, 8 for self-management of emotions, and 5 for regulating others' emotions. Ahmad et al (2022) indicate that the A-SEIS is a reliable and valid tool for assessing EI in Malaysian young adults.

#### *Location of Study*

The current study will choose UPM as the site of the study. Due to its excellent performance in research and innovation, UPM could be a great place to realize the ideas and objectives of the study. University Malaya (UM), University Science Malaysia (USM), University Kebangsaan Malaysia (UKM), University Teknologi Malaysia (UTM) and University Putra Malaysia (UPM) are the five public universities that have been titled as research universities (RUs) in Malaysia. The concept of research universities emphasized disseminating knowledge and producing workforce as well as bringing about innovative technology, new ideas, knowledge, and high standard research output to the nation (Ramli et al., 2013). To achieve the objectives, RUs must be able to evolve far beyond the traditional education strategies to release their fullest potential to compete with the global education market.

#### *Research Procedures*

The EITP lasted about six weeks, with sessions of 2 hours and 30 minutes each week. The first assessment (pre-test) was administered to all participants during the pre-session, and the second assessment (post-test) was given at the end of session 5. In summary, the EITP focused on recruitment, evaluation, and briefing (pre-session); an introduction to human emotions (session 1); perception and expression of emotions (session 2); understanding of emotions (session 3); using emotions to facilitate thought (session 4); and emotion management (session 5). At the end of the study, all data collected from respondents were entered into IBM SPSS software for analysis and prediction. The Figure 1 below depicts the flow chart of the research:

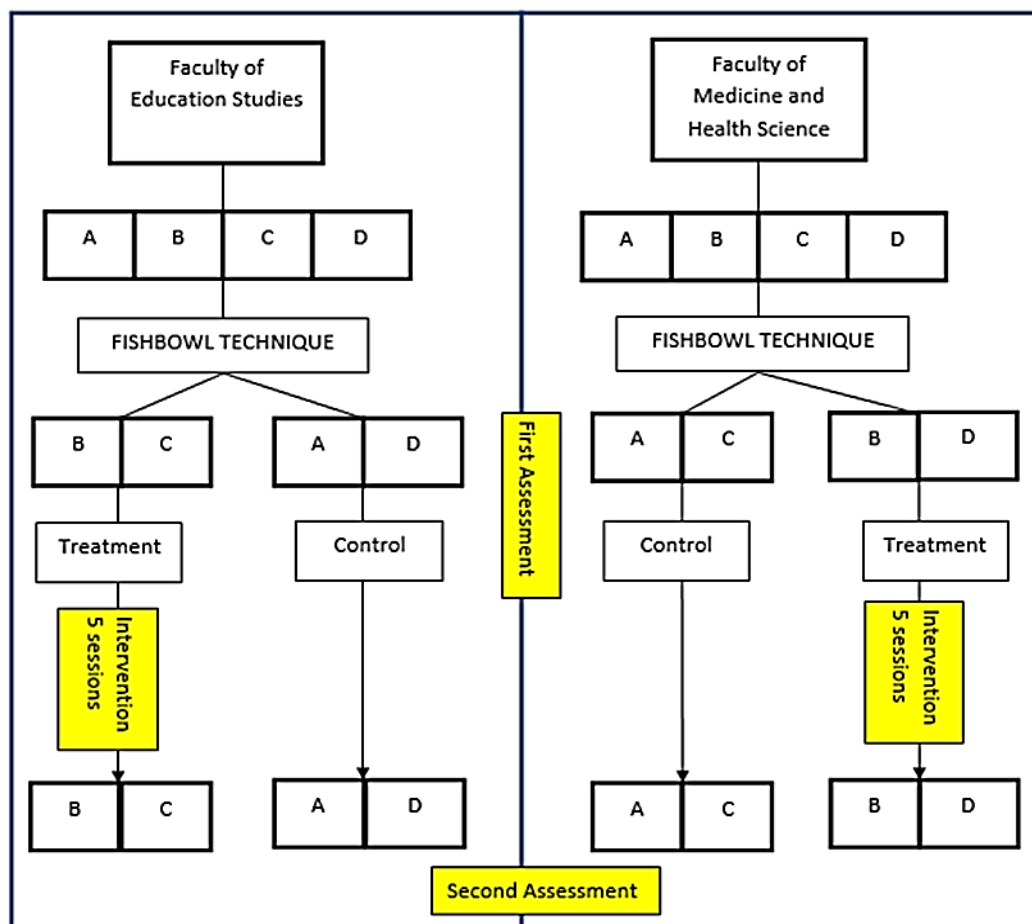


Figure 1 Flow chart of the EITP

### Risk Control for EITP

To minimize the negative impacts on the research, facilitators were aware of the limitations in their ability to protect participants' confidentiality and explained these limitations to potential participants during the informed consent process. They clarified the limits of confidentiality for research participants. It may be ethically appropriate to screen participants for immediate safety concerns and to direct them to additional support services, such as counselling or personal consultations, for any emotional distress issues encountered during the intervention.

Briefing, discussion, and training prior to the EI intervention were organized by the project leader to ensure that all facilitators are prepared for the intervention. The project leader selects facilitators who are knowledgeable and experienced in the field of EI and intervention. After obtaining ethics approval, each facilitator is required to attend training or participate in EI-related programs. The project leader ensured that all facilitators complete online EI courses and obtain the EI practitioner certificate before the EI intervention.

### Sample Size

It can be time-consuming and challenging for researchers to recruit a larger sample size while maintaining a gender ratio balance in experimental research. As a result, Drew et al. (2008) advocated a sample size of 15 participants per group in experimental research that

compares different groups. To achieve the research objectives, this experiment targeted 30 undergraduates in each class, accounting for practical and prospective dropout issues. In the current study, 60 undergraduates were assigned to the treatment group, while the other 60 undergraduates did not receive any intervention (control group). A total of 120 undergraduates were recruited for this experimental project. The demographic information of respondents is shown in Table 1.

**Table 1***Distributed of Sample Respondents in UPM*

Categories	n	%
<b>Gender</b>		
Male	24	20.0
Female	96	80.0
Total	120	100.0
<b>Races</b>		
Malays	97	80.8
Chinese	17	14.2
Others	6	5.0
Total	120	100.0
<b>Programs</b>		
Bachelor of Education Guidance and Counselling	10	8.3
Bachelor of Education in Bahasa Melayu	20	16.7
Bachelor of Education in Agricultural Science	30	25.0
Bachelor of nutrition and community health	11	9.2
Bachelor of Biomedical Sciences	19	15.8
Bachelor of Science Environmental & Occupational Health	30	25.0
Total	120	100.0

The sample comprised 120 participants, exhibiting a notable gender distribution. Among the respondents, there were 24 males (20.0%) and 96 females (80.0%), indicating a predominance of female participants in the study. In terms of racial demographics, the majority of participants identified as Malays (97, 80.8%), followed by Chinese (17, 14.2%), and Others (6, 5.0%). This distribution represents the ethnic composition of the study group, with Malays constituting the biggest racial group. The Bachelor of Education in Agricultural Science and the Bachelor of Science in Environmental and Occupational Health were the most represented programs, accounting for 25.0% of the sample. The Bachelor of Guidance and Counselling and Bachelor of Nutrition and Community Health degrees had lesser representation, with 8.3% and 9.2%, respectively.

**Table 2***Normality of the EI Tests*

	Group	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
EI pre	S/STG	.146	30	.102	.947	30	.144
	S/SCG	.104	30	.200*	.976	30	.721
	STG	.143	30	.120	.953	30	.209
	SCG	.164	30	.038	.931	30	.052

El post	S/STG	.152	30	.076	.950	30	.172
	S/SCG	.170	30	.027	.954	30	.214
	STG	.134	30	.182	.948	30	.151
	SCG	.109	30	.200*	.958	30	.282

*Note.* S/STG=Social/Social Science Treatment Group; S/SCG=Social/Social Science Control Group; STG=Science Treatment Group; SCG= Science Control Group

To ensure the data are normally distributed, the EI pre scores and post scores of the study were examined. The Kolmogorov-Smirnov (KS) and Shapiro-Wilk (SW) tests, as described in article of Orcan (2020), were used to determine whether the samples followed a normal distribution. Since the sample size was small, the researchers used the Shapiro-Wilk test to check the normality of the EI pre-test and post-test scores. As the  $p$ -values for both tests in each program were greater than .05, the researchers assumed that the data were normally distributed.

In addition to checking the normality of the data, it is important to note that deviations from multivariate normality can significantly affect the results of Box's M test. A Box's M test result ( $p > .05$ ) indicates that the assumption of homogeneity of variance-covariance matrices was not violated, as illustrated in Table 3.

**Table 3**

*Box's Test of Equality of Covariance Matrices*

Box's M	8.350
F	.899
df1	9
df2	154203.164
Sig.	.525

If Levene's test is statistically insignificant ( $p > .05$ ), the variances are equal, and the assumption of homogeneity of variance is upheld. In this study, all  $p$ -values were greater than .05, indicating that the variances were equal. Levene's test for equality of error variances confirmed the assumption of variance homogeneity as shown in Table 4.

**Table 4**

*Levene's Test of Equality of Error Variances*

	F	df1	df2	Sig.
El pre	.973	3	116	.408
El post	1.678	3	116	.176

*Note.* EI=Emotional Intelligence

To determine whether there were any differences in the treatment and control groups' EI pre and post, a multivariate analysis of variance was performed (Table 5). Wilks'  $\Lambda = .669$ ,  $F(6, 230) = 8.548$ ,  $p = .000$ ,  $\eta^2 = .182$  showed a significant difference between the treatment and control groups on the combined dependent variables.



**Table 5***Multivariate Tests*

	Value	F	Hypothesis df	Error df	Sig.	Partial Squared	Eta
Pillai's trace	.357	8.409	6.000	232.000	.000	.179	
Wilks' lambda	.669	8.548 <sup>a</sup>	6.000	230.000	.000	.182	
Hotelling's trace	.457	8.685	6.000	228.000	.000	.186	
Roy's largest root	.345	13.345 <sup>b</sup>	3.000	116.000	.000	.257	

Based on the results, it presented that groups (treatment and control from different fields of study) had significant interaction effects on EI pre,  $F(3, 116)=4.519, p=.005, \eta^2=.105$ , and EI post,  $F(3, 116)=10.956, p=.000, \eta^2=.221$ , as shown by separate univariate ANOVAs on the outcome variables in table 4.6. Groups from different fields of study had a significant pre- and post-EI impact on EI.

**Table 6***Univariate Tests*

Dependent Variable	Sum of Squares	df	Mean Square	F	Sig.	Partial Squared	Eta
EI pre	1047.065	3	349.022	4.519	.005	.105	
	8958.710	116	77.230				
EI post	2620.415	3	873.472	10.956	.000	.221	
	9247.965	116	79.724				

*Note.* EI=Emotional Intelligence

The paired sample t-test was utilized to examine the effect of EITP on treatment and control groups' EI performance. Based on Table 7, the analysis revealed that there was a significant improvement in the EI performance among the social or social science treatment group,  $t(29)=-5.804, p=.00$ . and the science treatment group,  $t(29)=-6.405, p=.00$ . While there was no significant improvement in the social or social science control group,  $t(29)=-1.575, p=.126$  and the science control group,  $t(29)=-.323, p=.749$ .



**Table 7**

*The Differences between groups' EI Scores before and after Intervention using a paired samples t-test*

Group	Before Intervention		EI After Intervention		EI Mean Differences	t	df	p
	M	SD	M	SD				
S/STG	153.10	8.80	160.10	9.00	-7.00	-5.804	29	.000
S/SCG	150.17	8.05	152.29	6.99	-2.12	-1.575	29	.126
STG	145.47	8.04	155.80	9.14	-10.33	-6.405	29	.000
SCG	146.93	10.11	147.36	10.27	-.43	-.323	29	.749

*Note.* S/STG=Social/Social Science Treatment Group; S/SCG=Social/Social Science Control Group; STG=Science Treatment Group; SCG= Science Control Group

### Discussion

The EI pre-test revealed statistically significant mean differences between the social/social science treatment group and the scientific control group, as well as between the social/social science treatment group and the science treatment group. Similar to other studies that hypothesized different EIs may be found in undergraduates from different academic fields. According to Abdollahpour et al (2016), non-medical students score higher on the EI than medical students. This pattern can be attributed to the distinct skill sets promoted in each profession. The social sciences, humanities, and other non-medical programs frequently require more interpersonal contact, empathy, and emotional understanding, all of which are essential components of EI.

On the other side, science programs may be emphasized more on the technical skills, logical reasoning, analytical thinking, as well as problem solving strategies, which may not place heavily on interpersonal relationships. The current results might bring some insight into the necessity of the inclusion of EI learning into the university course design and extracurricular activities if the government and educators believe that all students, regardless of academic discipline, need to have EI abilities. For instance, students studying the medical and pure science programs might be beneficial from EITP in understanding emotions and empathy for others. These EI skills are increasingly necessary for teamwork and leadership, even in technical disciplines.

Lastly, the study presented that EITP has a significant effect on the treatment groups' EI scores following the intervention. At the same time, no significant improvement was found between the control groups. This could indicate that the EITP has successfully enhanced the EI skills of treatment groups from different academic disciplines. This study is significant because it implies that EI may be developed in students from any academic background, whether in psychology, language, biomedical, medicine, engineering, or other humanities. The findings also support the notion that EI could be trained and is teachable through intervention.

## Conclusion

Based on the study, the researchers concluded EITP is important and should be implemented in a university context. The study further recommends looking at the applicability of EI module in the EITP. More studies are needed to examine the module's efficacy to ensure that the implementation of the EITP can be applied to the population. The researchers also encourage looking at variations in EITP's delivery, content, and context in order to determine the best approaches to maximize its impact on undergraduates with different academic disciplines. For the theoretical contribution, the current study provided evidence that implementing EITP using Mayer and Salovey's ability-based model is effective in facilitating undergraduates' EI skills. In the future, the methodology and findings of the study could serve as guidelines for researchers to develop similar EI modules or activities in the Malaysian context.

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