



RESEARCH ARTICLE

Satisfaction of Mobility Students on Interdisciplinary Approach in Awareness Program for Forest Conservation and Recycle Activities.

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In today's world, universities are encouraging students to join international mobility programs. Normally, mobility activities and programs are designed with an interdisciplinary approach to enrich the student's experience and skills. Faculty of Forestry and Environment (FFE), Universiti Putra Malaysia (UPM), has been actively using interdisciplinary design for awareness programs on forest conservation and recycling activities with mobility students from Australian and Chinese universities from 2015 until 2024. The awareness programs and recycling activities were organised using an interdisciplinary approach to provide multiple skills, experiences, and exposure to the students and other participants who came from various backgrounds. This study measures the satisfaction among participants as a guide for future mobility program design and to measure effectiveness. Mixed methods with face-to-face interviews and survey questionnaires were used to gather the data needed in this study. Data analysis for the interview extracted the main theme from the interview manuscript. While for the survey questionnaire, statistical techniques were adopted to analyse the data. The findings show Australian students are highly satisfied with the interdisciplinary awareness programs and recycling activities. The Chinese students are highly satisfied with programs and activities that have evaluation marks for them. Both groups are keen to take part in future programs organised by FFE. In conclusion, the interdisciplinary approach is one of the best methods to enhance awareness programs on forest programs and recycling activities. However, the teaching level must be at the introduction level and not too technical. Future research can look further into this topic from different aspects.

INTRODUCTION

Global universities have increasingly embraced international student mobility (ISM) programmes

over the past few decades. Furthermore, both national governments and international institutions, such as the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and the European Union Council Resolution, actively promote and endorse the participation of young individuals in ISM programmes Di Pietro [1] either inbound or outbound. Further, developed nations,

including Australia, France, Germany, the United Kingdom (UK), and the United States of America (USA), have been actively promoting student mobility programmes worldwide. In Huang's [2] study, it was shown that the most popular destinations for international mobility students are the United States, United Kingdom, Germany, and Canada. In addition, she stated that 58 percent of students participating in international mobility programmes originated from Asia. Furthermore, the Asian continent has also had a substantial influx of ISM. Malaysia is one of the Asian countries actively participating in this programme. Several universities in Malaysia have both received and sent a significant number of students to join the ISM programmes. Based on the data from UNESCO [3] and Palit, Murali and Mekhla [4] on inbound mobility students, Malaysia ranked as the top country in Southeast Asia, receiving a total of 81,953 students (see table 1). Among the participating universities, Universiti Putra Malaysia (UPM), situated in Selangor, is one of the universities actively participating in international mobility programmes. UPM, as the third oldest university in Malaysia, has gained international recognition (see Suhaimi, Nadia Zawani, Hasfalina, & Afirina) [5]. UPM comprises 15 faculties and one school that provide both undergraduate and postgraduate programmes. Each of these departments is aggressively promoting their International Student Mobility (ISM) programmes for both incoming and outgoing students. However, this study will specifically examine inbound mobility programmes within the Faculty of Forestry and Environment (FFE), UPM. As one of the oldest and pioneering colleges at UPM, this faculty annually hosts eight to twelve groups of inbound mobility students.

Table 1: Student mobility ratio for the Asia-Pacific

Country	Inbound students	Outbound students	Student mobility ratio
Brunei	377	2,680	0.14
Indonesia	7,677	49,900	0.15
Laos	468	6,558	0.07
Malaysia	81,953	61,904	1.32
Myanmar	459	10,277	0.04
Singapore	51,756	23,752	2.18
Viet Nam	7,250	108,527	0.07
Southeast Asia (SEA)	149,940	324,279	0.46
India	47,424	375,055	0.13
Sri Lanka	1,529	24,118	0.06
South Asia (SA)	48,953	627,841	0.08
China	201,177	993,367	0.20
Japan	182,748	31,903	5.73
South Korea	101,774	84,749	1.20
East Asia (EA)	485,699	1,110,019	0.44
Australia	444,514	13,319	33.37
New Zealand	52,702	5,036	10.47
Oceania (OC)	497,216	18,355	27.09
Asia-Pacific (SEA+SA+EA+OC)	1,181,808	2,080,494	0.57

Source: UNESCO, [3] and Amitendu, Murali and Mekhla, [6].

Background of Study

FFE was established in 2020 with the merging of two small faculties which are Faculty of Forestry and Faculty of Environmental Studies. Faculty of Forestry was the three pioneers of faculties at UPM

established in 1971. While Faculty of Environmental Studies was formed in 2004. Due to the importance of forest conservation and environmental issues this merging is timely. Based on Putra International Centre, UPM (i-PUTRA) data the total number of inbound mobility students to UPM in 2021 was 1,897 and outbound recorded as 780. The number of students could be higher if the Covid 19 did not hit the world from 2020 until 2022. Nonetheless, the number of students taking part in ISM program after the pandemic period has significantly increased all over the world including at UPM. There are two types of inbound mobility program (long and short term) at UPM as shown from Table 1.1. Two of the ISM programs at FEE in 2023 involved Queensland University of Technology (QUT), Australia and Nanning University, China. Both universities sent their students from bachelor's degree programs for short term program which lasted two weeks to three months. QUT has been sending their mobility students to FEE since 2015 while Nanning University just joined this program in 2023. For this study, only the program in 2023 will be looked at.

Since the students are not from non-environmental and forestry background a tailor-made module and program were developed by FEE for them to suit their background. Hence, it is best to design a non-technical module for this group of students. This is important to make sure the students have at least basic understanding about taking care of the environment and forest conservation during their mobility program at UPM. The challenge is to meet all the requirements requested by both universities for their students.

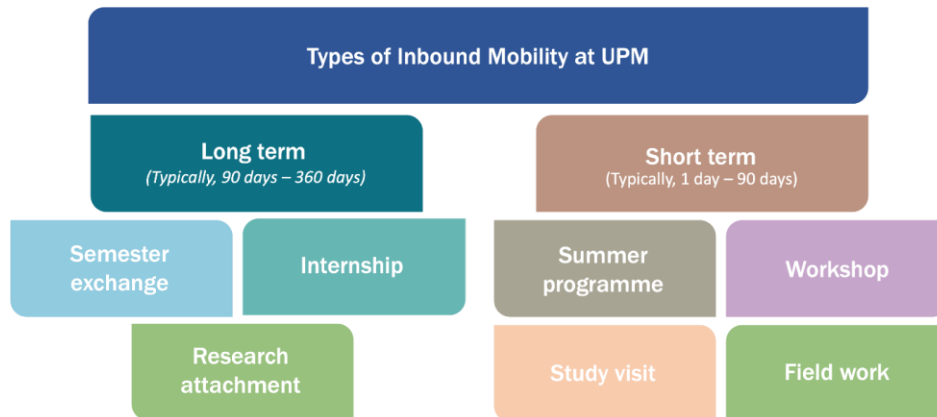


Figure 1: Types of Inbound Mobility at UPM

Source: i-PUTRA, [7]

Problem Statement

Based on the requirements by QUT and Nanning University ISM they got involved were different from one another. For QUT it is more to field work and study visit for Nanning University (refer to table 1.1). Further these two groups of students have different characteristics and level of understanding for English language. Di Pietro, [1] stated that students characteristics might give an impact towards their international mobility experience. While Prasetyaningrum, Ruminar, Ivana, and Irwan [8] have identified five factors faced by international mobility students namely, academic barriers, social barriers, cultural barriers and language barriers and adaptation strategies. Hence, the ISM program for QUT is more technical compared to Nanning University. This is to make sure the students from QUT and Nanning University gain the best learning experience during the program's activities. Based on this notion this study has come up with the research objectives of the study as stated below.

Research Objectives

The general objective of this study is to give the best experience in academic and cultural aspects to all participants taking part in ISM program activities at FEE. While the four specific objectives are:

RO1: Inbound Mobility Student (IMS) Programmes at UPM. RO2: To provide basic knowledge about taking care of the environment and forest conservation in Malaysia. RO3: To provide awareness about taking care of the environment and forest conservation in Malaysia. RO4: To give a good learning experience about taking care of the environment and forest conservation in Malaysia.

RELATED LITERATURE REVIEW

The Organisation for Economic Cooperation and Development (OECD) [9] defined ISM as individuals who expressly cross borders intending to study. Many studies stated that Europe has been at the forefront of this activity for several decades (read Lopez-Duarte, Maley & Vidal-Suarez [10]; OECD, [9]). However, many countries are encouraging their students to get involved in ISM since the world entered the new century. This is due to the positive impact of ISM brings to the students and universities such as, enhance employment prospects and increase earnings potential (Di Pietro, [1]; Kratz & Netz [11]; Pinto, Moscardi, Gomes and Nakatani [12]). As a result, many universities all over the world are promoting ISM either for inbound or outbound programs. This initiative is often backup substantially by their government. In Malaysia one of the universities actively involved in ISM is UPM. The program is called as Inbound Mobility Student (IMS). Each year their IMS participants increased except for during the Covid 19 pandemic period from 2020-2022 when the number dropped. Nonetheless, the program did not totally stop as there were a few IMS organised online during the pandemic period and until today (read UPM Bulletin [13]). According to the data from i-PUTRA, [7] the IMS programme at UPM started in the 90's but getting its momentum in 2002 when the International Relations Division was established.

In 2017, UPM has upgraded i-PUTRA to become a centre to strengthen the university internationalization matters. UPM mobility program vision is to nurture future global leaders through world-class learning experiences as well as offer quality short-term programmes. This is in line with UPM vision to become a university of international repute.

Inbound Mobility Student (IMS) Programmes at UPM

With UPM strategic location in the between of Kuala Lumpur the capital city of Malaysia and Putrajaya the administration centre for Malaysian government many IMS participants choose UPM. In 2019 mobility student to UPM was reported to reach 1,698. There are four main categories of IMS program as shown in table 2.1 with brief description about each of them taken from Inbound IMS Guidebook (i-Putra [7]). For this study, category 2 and 4 will be the focus since the IMS students for this study fall in that category.

For IMS programmes at UPM showed that Asian market still leads the programmes. Currently, China is becoming one of the top countries to send their IMS to UPM. However, other markets such as, Australia, Finland, France, Germany and Poland also sent their IMS students to UPM. They came from various field of studies and some from interdisciplinary fields. As a result, interdisciplinary module was adopted by FEE for IMS students to their faculty. This is to enrich their learning experiences and knowledge on taking care of the environment and forest conservation. In today's world interdisciplinary learning empowers students to combine frameworks and concepts from multiple disciplines and help them to solve a problem from different perspectives (Lane 2023 [14]). Hence, it is encouraged by many universities to enhance their students' skills. Further, government and private agencies are also promoting these interdisciplinary practices making it as a much-required aspect for a labour market (Baraoudi [15]). Realising on this trend, FEE has combined their IMS module from at least science and social science discipline

No.	Category	Description	Practice in UPM	Duration
1.	Short-term study-abroad experience as part of degree program at home institution	Students who as part of their home institution degree program undertake a short-term (one semester or one year) mobility experience in a foreign country at a foreign institution or at a branch campus of their home institution.	The inbound student spends a semester, registers for and attends classes together with full-time students.	1 to 2 semesters to a maximum of 12 months
2.	Research and fieldwork	Research or fieldwork in fulfilment of degree program at home institution.	Student/ Researchers/ Lecturers may come to the university's many laboratories, under the supervision of the university officers.	Typically 2 weeks and more
3.	Internships and practical experiences	Required or optional internship, placement or community service work in fulfilment of degree program at home institution.	Students may come to the university's many laboratories, administrative units or industry partners under the supervision of the university officers.	Typically 2 weeks and more
4.	Study tour, workshops	Required or optional study tour, summer program, cultural or language course, conferences, workshops. Part of or independent of degree programme at home institution	Summer School programmes or customised courses	Typically 2 weeks or more



Figure 2: Category of IMS at UPM

Source: i-Putra [7]

Interdisciplinary Module for IMS at FEE

At FEE interdisciplinary module has been implemented for their IMS programmes since many years ago. These modules are often tailor made for each group of participants with a combination between science and social science approach. However, in 2015 FEE started to introduce art into the IMS module for their participants. For example, an IMS program on awareness and conservation of limestone forest in Malaysia 2018 added a few creative activities assisted by students from the Faculty of Art and Design at Universiti Teknologi MARA (UiTM). The IMS participants are required to create limestone forest park model using Lego (read Isa, [17]). While in 2023 the IMS module included knowledge transferred about forest awareness and conservation to the primary school students in Port Dickson, Negeri Sembilan through teaching activities (Asri, [18]). Since the nature of IMS program is to give rich experience to all participants, the interdisciplinary approach is suitable to reach everyone from all backgrounds.

Satisfaction of IMS Programmes

Although ISM or IMS gained its popularity all over the world for more than three decades but research about the participants or students' satisfaction is extremely low. Their satisfaction should be looked at because they are the main customers in ISM or IMS programmes. In addition, student mobility programmes have become one of the most visible aspects of the internationalization of higher education institutions (Elias, Corbella and Pinero [19]). Their level of satisfaction can help to identify

the best approach for future ISM or IMS programmes for universities involved either as a host or “customers”. Also, this will add more data to the topic particularly relating to ISM or IMS in Malaysia.

RESEARCH METHODOLOGY

This section discusses about the method undertaken by this study for data collection purposes. A mixed methodology was used to get rich data from the respondents who are participants of IMS at FEE, UPM. Further discussion is presented below.

Study Area

This study is going to focus on ISM at FEE, UPM Malaysia involving QUT, Australia in 2023 and Nanning University, China in 2024. QUT students comprised of 10 students spent two weeks, while Nanning University students with 42 students spent three months at UPM. However, only 22 students from Nanning University choose to do their ISM with FEE, while another 20 students choose another module with other faculties. For QUT students ISM programme focused more on hands on activities at UPM reserved forest in Puchong, lab work and community activity. Whereas Nanning University students are required to attend two weeks classes of two subjects. Both groups are evaluated differently since they came from different major of studies. QUT students were evaluated by their lecturers and Nanning University students were evaluated by UPM lecturers. Hence, it is fair for the IMS students to be given the opportunity to evaluate the programmes too.

Mixed Method Technique

Mixed-methods research has been popular in the social sciences since the twentieth century. Due to the nature of this study, it is necessary to choose mixed method technique. As stated by Wasti, Simkhada, Teijlingen, Sathian and Banerjee [20], mixed methods research has been substantially used in the social sciences studies since the twentieth century and followed by the science discipline.

Qualitative and quantitative methods are used to get the data needed for this study. Since QUT students have better comprehension and understanding of English language, personal face to face interviewed have been implemented to get the data from them. The interview questions are open ended to give freedom for the participants to express their opinion. In addition, this study wishes to get robust information from the respondents by adopting probing questions (Weller, Vickers, Bernard, Blackburn, Borgatti, Gravlee and Johnson [21]). Approximately 16 interview questions were asked. All 10 Australian students and two lecturers were interviewed. According to Divan, Ludwig, Matthews, Motley and Tomlienovic-Berube [22] qualitative methods are widely used in learning and teaching research and scholarship. Hence, this method is suitable to be used in this topic.

For Nanning University students survey questionnaires were distributed to their emails using Google Forms. There are one section using open ended question while two sections using close ended technique with five Likert scale and multiple-choice questions. Section a is to obtain personal data followed by the next section asking the respondents about their satisfaction with the lecturer for Tourism Marketing subject they took at FEE. Finally, the last section addresses their opinion and satisfaction over the content of the subject. Elias et al. [19] has used this type of technique in their study too. The self-administered survey is design using close ended technique with simple English and brief sentences to make sure the Chinese students have a good comprehension with the survey questions. 18 respondents answered the online questionnaires.

Data Analysis

Statistical analysis is used to proses the data obtained from the respondents. Data analysis for interview session involved transcription done manually to extract the main theme from the interview manuscript (Maguire and Delahunt [23]). While for survey questionnaire statistical techniques such as, descriptive statistics is adopted by presenting percentage result using graph and diagram.

RESULT AND DISCUSSION

In this chapter the result and discussion of the data gathered will be presented extensively. The result and discussion will cover both the interview followed by questionnaires survey. Overall, the results show a high level of satisfaction among the students from both QUT and Nanning University for the IMS programmes at FEE by using interdisciplinary approach. When asked if they are interested to join the IMS or other programmes organised by FEE in the future all of them are keen to take part although they come from different discipline of studies. That shows the basic modules for forest conservation and taking care of the environment are well received by the participants from Australia and China. For more detail result are presented below.

Interview Result

The findings show that all Australian students comprised of four male and six female are highly satisfied with the interdisciplinary awareness programs and recycle activities. In addition, majority of Australian students request to have more activities with UPM students, staff, and outside communities. They request to have more hands-on experience and engagement with the locals because they want to learn more about Malaysian culture. One female student specifically requests to stay with Muslim family in Malaysia to learn and experience more about Islam religion. Two activities that gave the most unforgettable experience to all respondents are visiting three mosques. One in UPM and two in Putrajaya. One of the male respondents says “I’ve never visited any mosques before, so this experience is something new and an eye opener about Islam to me. It is a beautiful memory about Malaysia too....” Another female student state that “The architecture is very impressive and different from one to another. Great experience for me...” The respondents mention about gaining good experience from the programme. Hence, host universities must design IMS programmes which can provide the best experience to their participants. Another unforgettable activity is when the Australian students engaged in knowledge transfer program with primary students at SJK(T) Kem Askar DiRaja, Port Dickson, Negeri Sembilan from 09.00am until 13.00pm. They worked together with FEE students and the primary school teachers to teach primary students about Australia and Malaysia forest in general. One of QUT students comments “The primary students are so polite and sweet. They are so eager to learn from us and gave us prezzies. I wish we had more time with them...” Another QUT student respond “I wish I can stay and work in Malaysia. There are so many interesting things to do and explore....” One of QUT lecturers comments “Our students love all the activities you organised for them. I wish we could stay longer in Malaysia...” From their responds show they want to stay longer in Malaysia to learn more about the country from many aspects such as, culture and research work.



Figure 3: QUT students engaged with UPM community for tree planting activity.

Source: Personal photo (2023)

Survey Result

For Chinese students a total of 5 male and 13 female students answered the survey. Two respondents choose not to answer the questionnaires because they went back to China due to personal reason right after they completed the FEE module and sent all their work requested by the lecturers. The Chinese students are very satisfied with the Tourism Marketing subject offered under ISM programme by FEE. All of them never took tourism or forestry subject before. Their field of studies are mainly under accounting, business, and economics. A total of 66% of respondents stated they choose to join Tourism Marketing subject because they want to learn new things. Although English language is their major obstacle, but they manage to understand the module instructions

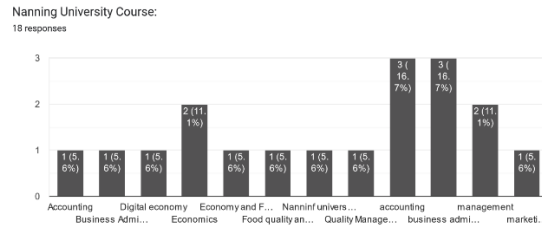


Figure 4.2a: Nanning University students’ field of studies.

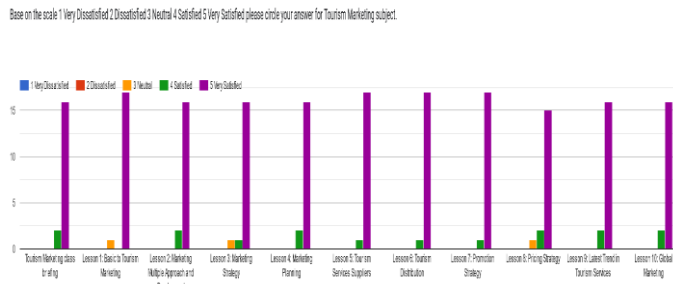


Figure 4.2b: Student satisfaction for Tourism Marketing subject for IMS program.

2. Why did you join Tourism Marketing subject?
18 responses

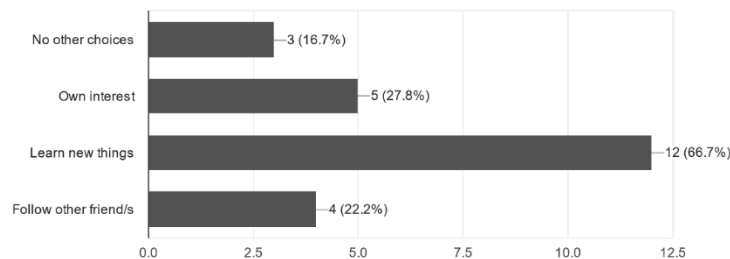


Figure 4.2c: Interest to join Tourism Marketing subject.

All respondents want to further their study in UPM if they were given a chance to do so. They realised to master English language is significantly important nowadays and they are confident they can improve their English language if they study at UPM in the future. Also, at UPM there are many subjects the students wish to explore more particularly at FEE.



Figure 4.2d: Nanning University students presenting their group assignment using multidisciplinary approach in class

Source: Personal photo (2023)

CONCLUSION

In conclusion, the interdisciplinary approach proves to be one of the best methods to enhance students' experience in awareness programs on forest conservation and taking care of the environment through recycling activities. Importantly, the teaching level must be at the introduction level and not too technical. A study abroad program during a student's undergraduate degree has multiple benefits for both academic training and student personal development, arising from a coherence between their motivation and the final assessment of their experience. The resulting conclusion can help obtain full recognition of courses taken at the host university. Future research can look further into this topic from different aspects to guide future mobility program design and measure its effectiveness. Another aspect that should be given attention to this topic is a thorough study of the background of participants. Although the possibility of participating in a mobility experience seems to be available to everyone, its feasibility, from a socio-economic point of view, remains elitist or students from a high-income group. This needs further investigation.

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