

A Study on the Impact of International Academic Visit Exchange Programme among Chemical Engineering Students

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Universiti Teknologi Malaysia (UTM), through a Global Outreach Programme (GOP) has been encouraged UTM students to go oversea on exchange programme for a period of their study. The objective of this program is mainly to globalise students' educational experience by adding an international dimension to their degree. This study was done to bring clarity to the role of exchange and advantages program which in line with UTM academia learning aspiration. This study specifically accessed the advantages gained among Chemical Engineering student from an exchange program between UTM and Hanoi University of Mining and Geology, Vietnam (HUGM). Data were collected via qualitative method through collecting reflective journals written by all students participated in this exchange programme. Using thematic analysis, the result demonstrates that a period of study abroad with different culture has brought benefits to the majority of UTM and HUMG students. Among the major positive outcomes appeared to be an improved personal development and intercultural competencies and enhancement of professional skills for careers. This program also encouraged high level of continuous contact and international networking from both universities. Most students participated in this program had showed their appreciation on this unique experience of travelling abroad.

1. Introduction

The rapid changes of 21st Century require graduate engineers become technically knowledgeable and well-rounded individuals who are able to become effective global citizens. One of the major concerns in the quality of the engineering education is that the developing countries are striving hard to produce professional engineers who graduated with updated professional knowledge and competencies. With ongoing globalisation, enterprises are now looking for competent employee on the global market, which requires engineers to be more competitive internationally. Graduates require intercultural competencies and international experience to make them more employable (Michael et. al., 2013). Many universities introduce international academic mobility program as part of their curriculum or optional for students. The student mobility is mainly promoted to encourage and enable students to gain international study experience (Ingraham, 2004).

Hypothetically, the study exchange programs are able to strengthen student's learning process through experience transformation and adaptation. According to Kolb's Experiential Learning Theory (ELT) (Passereli and Kolb, 2012), "...knowledge results from the combination of grasping and transforming experience" in which "grasping experience refers to the process of taking in information, and transforming experience is how individuals interpret and act on that information." The general holistic approach of effective learning as introduced by David Kolb, include the process of experience, reflection, analysis and action planning as shown in Figure 1. In this context, the experience that students gained through academic exchange program resulted from a process of adaptation to the new environment, become the basis of observation and reflection. Students are able to integrate what they believe in their own culture with what they have observed from the new experience, which then shaping their perceiving and behaving.

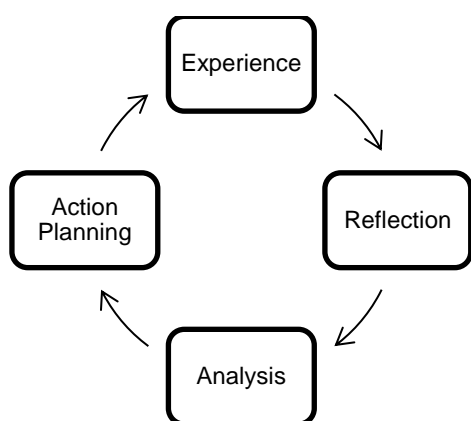


Figure 1: Learning cycle developed by David Kolb

Research shows that student exchange programs can be associated with improvement of individuals' personal development (Murphy et al., 2014.). The benefits include foreign language skills, knowledge of specific regions and countries, attitudes, cognitive skills, independence, perceptions and behaviors towards international awareness, and greater cross-cultural skills (Ileleji, 2009). University internationalisation strategies that include exchange programs, along with courses with international content and contact with international students, can have a greater impact on student learning in many areas (Nunan, 2006). This supports greater global-mindedness and provides an opportunity to broaden horizons, enhance global understanding and increase cultural literacy (Parsons, 2009). It can be subjective argument that international academic mobility program such as student exchange is really an effective approach for universities to produce global competent graduates.

Universiti Teknologi Malaysia (UTM) Global Outreach Programme is an international programme designed to develop UTM's students to be global ready graduate (UTM International, 2016). It is one of UTM initiative to provide the opportunity for UTM students to experience and expose to the extraordinary environment of different educational institutes academics, resources, and residential life. UTM has constantly committed to graduating competent, creative and versatile professionals. From the finding of UTM Office of Undergraduate Studies survey (UTM OUS, 2016), among the skills highly valued by employers are:

- communication skills;
- honesty/integrity/ ethics;
- teamwork skills;
- interpersonal skills;
- motivation/initiative/enthusiasm;
- capacity for critical and independent thinking;
- flexibility and adaptability;
- personal presentation and self-confidence;
- professionalism;
- problem solving and creativity; and
- ICT skills.

The academic learning environment is shaped to fulfil the stakeholder's expectation. With that motivation, Department of Chemical Engineering, Faculty of Chemical and Energy Engineering, UTM has initiated an Academic Visit Exchange Programme (AVEP) program under GOP pipeline to Hanoi University of Mining and Geology (HUMG), Vietnam for 2 weeks. Within two weeks of visit, UTM Chemical Engineering students had opportunity to experience a glimpse at HUMG life through an academic lecture series, campus tours and social activities. In exchange of this academic visit, Chemical Engineering students from HUMG were also

participated in the inbound academic visit in UTM with similar tentative program. Figure 1 shows among the activities in the exchange programme in UTM and HUMG.

In this present study, the impact of Academic Visit Exchange Programme is clarified in order to emphasize the benefits this kind of program as it involves extra commitment of time and efforts from students besides universities' budget allocation.



Figure 2: Pictures of Exchange Program Activities between UTM and HUMG

2. Methodology

This study mainly focuses on the beneficial aspects results from the Academic Visit Exchange Programme. In total, 31 students, 12 from UTM and 19 from HUMG participated in the study. The qualitative method was chosen as the main tool to collect the data. All of the data used here is taken from reflective journal written by UTM and HUMG students. Reflective journal is considered among the effective metacognitive strategies that can be used in academic learning where students can offer the stimulus for the student to start thinking about his cognitive processes. Students were asked to write a reflective journal to look back at their learning experience throughout the exchange program. The findings strongly depend on feelings, ideas, and expressions of the participants. The focus of the paper is to explain what the students gained in exchange program through the analysis of their reflective journals. After all the reflective were collected at the end of the program, a qualitative data analysis technique recommended by Miles and Huberman (1994) was employed. The technique consists of three phases; data reduction, data display and conclusion verification as simplified in Figure 3.

3. Results and Discussion

This paper explores the beneficial results of their international study experience based on the reflection journal. It is believed that the ability of students to recall and record what they have observed and how they felt during this programme showed that there was a learning cycle created from the programme. Based on the Experiential Learning Theory (ELT), learners gained knowledge as they traced all the bases of "experiencing, reflecting, thinking, and acting-in a recursive process that is responsive to the learning situation and what is being learned" (Kolb and Kolb, 2005). As Vietnam and Malaysia has a different culture and environment, both students from each university has opportunities to sense a deep social and personal involvement in experience. They were able to connect their experience and ideas through reflection, which considered an analysing process. It is observed that students were able to manipulate their integrated experience for future planning, as evidenced by their motivation in career goal.

In this study, three impact domains of attributes were identified from the analysis. First, the aspect of personal and social development, which generally includes developing social, communication, and team working skills; the ability to learn from experience, control behaviours, and make good choices; and the self-esteem,

resilience, and motivation to persist towards goals and overcome setbacks (The Young Adult Learners Partnership, 2003). Secondly, the cultural learning was considering any reaction and respond towards learning process of adapting to a new culture. Third, a career advancement attribute, which was considering any reflection towards an adaptation to a different academic system and planning career path due to exchange (Krupnik and Krzaklewska, 2007).

Table 1 shows the four beneficial aspects most often mentioned in the students' reflective journals that were written at the end of exchange program. The number given in the table shows the number of students who mentioned the beneficial aspect in their reflection journals.

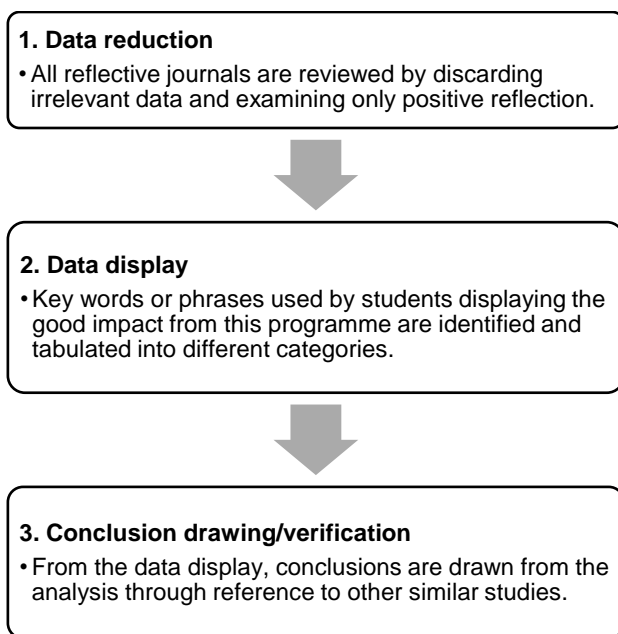


Figure 3: Method used in this study

Table 1: Beneficial aspects gained for UTM and HUGM student in exchange program

Beneficial aspects	UTM	HUGM
Personal and social development	12	19
Cultural learning	10	15
Career advancement	1	3

From the beneficial aspects shown in Table 1, many of personal and social development aspects were specifically mentioned in the reflective journal from both universities students. Table 2 shows some sample quotes for each of the beneficial aspects from both universities students. After coding the wide range of themes, it was clear that personal and social development emerged largely in the journals. The personal and social development was enhanced in terms of increased independence, maturity and confidence. This is similar to the findings of studies conducted by Nunan (2006) on graduate students who had undergone exchange program. The study shows that their overseas study experience allowed them to better value perspectives other than their own cultural values. The study also stated that the exchange program enhanced student understanding of themselves, increased their maturity, independence and self-confidence. It promotes personal awareness and development of a positive self-image (Ingraham, 2004). These are all components that relate to personal and social development and which are also closely related to intercultural competence. This proved that exchange study programs can play a significant part in personal growth and the development of self-confidence.

Table 2. Example of quotation for beneficial gained found in reflective journals

Beneficial aspects	Reflective journal	Example of quotations from the reflective journals
Personal and social development	Student 1 (UTM)	"...“Friendly” would be the best word I can think of in describing the people in Vietnam especially the students. The warm welcoming and the way they treated us throughout the trip was full of care and love. Apart from all the circumstances they had in understanding our multicultural lifestyle, they did try their best in providing us with the best facilities and hospitality so that we would enjoy our days there at Vietnam."
	Student 2 (HUGM)	"...The very big impact that I have seen through myself from this program is it help me a lot in increasing my confidence level and proficiency when communicate to other foreign' student using another language (English)."
Cultural learning	Student 3 (UTM)	"...This program also thought me to become more independent and learn to life and survive beyond our familiar environment and comfort zone, I learn so much how differ people, culture, environment going to have their own life and try to get along with them."
	Student 4 (UTM)	"...I got to explore and appreciate new cultures. Vietnamese's cultures were unique and diverse. I got an opportunity to play their traditional musical instruments. Besides that, through culinary exchange activity, I got to taste local Vietnamese food and deserts too. I must say that, I really like the flavour of their food."
	Student 5 (HUGM)	"...I get to know more about their culture and lifestyle. From this, we have change to get know about each other religion and culture, we also can share and learn between each other about our own religion. This increased my awareness and appreciation of different culture and religion and try to suit myself with all new thing I learn and become more global outlook on life."
	Student 6 (HUGM)	"...This exchange programme is a good promotor of learning, and vital in breaking down the barriers to cultural understanding. The benefits of this program are very clear and fortunately, all my expectations were met."
Career advancement	Student 7 (UTM)	"...This academic program was a really good program as it exposed us to new environment of another place especially in improving our self-confident, self-esteem, communication and survival skills. These generic skills would be useful in my future career as global engineer."
	Student 8 (HUGM)	"...This exchange program equipped me more towards being better person in life and certainly added a lot of weight in my resume which will come in handy once I joined the workforce."

From the reflection journals that have been analysed, it can be observed that student indicated cultural learning as one of the beneficial impacts of their international study experience. The cultural learning attribute was mentioned by 25 respondents from both universities. The beneficial gained from this study are also consistent with other studies on students who had undergone similar program. Ileleji (2009) stated that participants of exchange programs believe experiencing new cultures is life changing where the study shows that their international study experience influenced their perspective on the world. Similarly in Krupnik and Krzaklewska (2007), they emphasised that the experience of new cultures had an impact in students' academic, social, and career dimensions. Overseas study promotes greater understanding of one's own cultural values and biases, and also cultivates of a more "sophisticated way of looking at the world" (Dwyer, 2004). Students who participate in an international study program, even for a short time, were more confident in their intercultural awareness and knowledge of other countries. Thus, the experience of time spent abroad is extremely desirable to ensure that the future graduates have a far greater knowledge of other cultures and are more globally competent than at present.

Only three respondents mentioned career enhancement as one of the beneficial components in exchange program. The influence on career development came in the terms of acquisition skills that influenced career paths. At the end of the exchange program, most students realised that they have managed to attain important skills that are essential as engineers of the future. Short-term international study programs, even as short as two weeks, are worthwhile education endeavours that have self-perceived impacts on students' intellectual

and professional skills. The awareness that future graduates are competing for employment on the world stage is also part of the need for greater global awareness and competence in broader educational, cultural and social spheres (Nunan, 2006).

4. Conclusion

This study has sought to relate the exchange experience of the students to the overall aim the universities to turn out widely educated and well-rounded individuals who are able to become effective global citizens. The finding from this study provide evidence to support the notion that the students become more globally and intercultural competent through a period of exchange program. It can be concluded that the international study experiences, even those of short-term duration, promote intellectual, social and personal development.

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