Case study on perspicacity of collaborative learning experiences

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Abstract. In the attempt to relate to the architectural practice, architectural education today has augmented the development of collaborative learning environment in the campus scenario. Presently, collaborative work among students from the same program and university is considered common. Hence, attempts of collaboration is extended into having learning and teaching collaboration by means of inter-universities. The School of Architecture, at the International Islamic University Malaysia (IIUM) has explored into having collaboration across the continent with Fatih Sultan Mehmet Waqf University (FSMWU), among faculty members and students of the two (2) universities This paper explicates the empirical study on students' perspicacity of their collaborative learning experiences; in term of effectiveness, generative behaviour, and teamwork. Survey with three (3) open-ended questions are distributed to students to express their opinions on learning collaboration that they have had during the execution of the Joint Summer School Program (JSSP). Feedback on their perspicacity is obtained and organised into numerical and understandable data display, using qualitative data processing software. Albeit the relevancy of collaborative learning, students gave both positive and negative feedbacks on their experiences. Suggestions are given to enhance the quality of collaborative learning experience for future development

1. Introduction

Recently, collaboration is considered a vital method of skill development in order to create leadership and teamwork skills among graduates. Architectural education has also been impulsive to respond to new sets of collaborative requirements, and has augmented the envelopment of collaborative development in learning environment in campus scenario. Most schools of architecture throughout the globe have initiated multi-fold collaborative educational programs, where numerous forms of collaboration between numerous parties are established

Similar collaborative program has been organised by the School of Architecture at the International Islamic University Malaysia (IIUM) and Faith Sultan Mehmet Waqf University (FSMWU), to provide a unique collaboration for teaching and learning in a program called the Joint Summer School Program (JSSP). JSSP is intended to instil collaborative skills among Malaysian and Turkish architecture students, as well as among the academic staff from both countries. This program intends to offer new opportunities for students to explore international collaborative learning environment, and paves new horizons in students' recognition to different opinions, views, philosophies, and cultures. Both universities agreed on having architectural design studio as the platform to acquaint students with

diversity of learning methods and processes, and simultaneously strengthen the teaching collaboration between the two (2) universities.

2. Objective and methods

This case study research has the objective to explicate students' perspicacity of their collaborative learning experience; in-term of effectiveness, generative behaviour, and teamwork. Survey with three (3) open-ended questions were distributed to students to express their opinions on learning collaboration that they have had during the execution of The Joint Summer School Program (JSSP) between architecture students of IIUM and FSMWU. Participants from IIUM are twenty (20) 3rd year architecture students, whilst eighteen (18) students from the turkey counter-part are from the second, third, and forth year architecture students.

The first question requests students to express their opinion on the effectiveness of group work in design studio. The second question probes if the team members have valuable or detrimental behaviours during the collaborative learning process, and the third question seeks to examine lessons learnt to be implemented for future collaborative projects.Feedback on their perspicacity are obtained and organised into numerical and understandable data display, using qualitative data processing software. The findings are descriptive and would be presented in graphic form for ease of understanding.

3. Collaboration in architectural education

Collaboration is supposed to be the strength of the architectural profession[1], and architectural education is often blamed for failing to produce good architects with teamwork and communication skills[2]. Key skills for architectural professional practice; such as listening to others, questioning, and negotiation; are generally not developed in the undergraduate years[3].

In the attempts to encourage collaboration in architectural education, Lehmann[4] highlights three (3) developed models with varying levels of cross-collaboration. Collaborative Studio model 1 is "Trans disciplinary Encounter Model", where students work side-by-side on the same project, each student would be producing their own proposal, whereby the contributing disciplines remain clearly identifiable. Model 2 is "Real team Collaboration," where students working in multidisciplinary teams, encompassing architecture and visual arts students, to collaborate on joint individual projects. The third is "Interdisciplinary Consultation Model", in which students invite other students from other disciplines to come to the studio from time to time as external consulting experts. This model is probably closest to the standards of "real" architectural practice, operating with "informed disciplinarily', calling upon and utilizing the expertise of other disciplines. Hence, collaborative learning is useful to develop the long-life learning capability among architecture students.

On the other hand, modern development of world-wide-web (www) and the internet of things (IOT) have cultivated new measures of collaboration in architectural education[5]. To remain relevant, architectural education must adapt technology enhancement collaborative learning, and ensure education framework are to be aligned with the current world.

4. Research Analysis

This research quantifies qualitative data obtained from open-ended questionnaires. Survey were distributed to architecture students who participates in the JSSP. With different background and cultures of students, it is expected that upon analysing students' opinions, several concerning matters are to be highlighted for future program to be implemented.

20 Malaysian students and 18 Turkish students participated in the organised JSSP 2016 program. From the 38 participants, 34 students responded to the distributed survey (89.4%). Based on 34 collected questionnaires, there are 117 quotations in all four main codes which are grouped as effectiveness (25 quotations), team members behaviour (24 quotations), a) behaviour valuable in the group (15 quotations), b) behaviour detrimental in the group (9 quotations), lesson learnt during the group work (35 quotations) and concerning matters during the group project (30 quotations). Table 1 shows the description and statistics summary of every analysed codes and quotation.
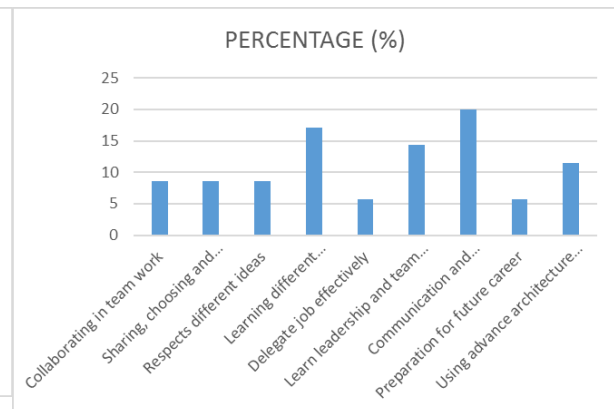
Table 1. Analysed codes and quotations

Codes No	Codes Name	Freq.	(%)	Codes No	Codes Name	Freq.	(%)
1	**Group effectiveness**	**25**	-	3	**Lesson learnt that can be used for the next group work**	**35**	-
1.1	• Very effective	16	64.0				
1.2	• Effective	8	32.0	3.1	• Collaborating in team work	3	8.57
1.3	• Not effective	1	4.0	3.2	• Sharing, choosing and delivering ideas	3	8.57
				3.3	• Respects different ideas	3	8.57
				3.4	• Learning different architectural systems, design concepts, design process and design methods	6	17.14
				3.5	• Delegate job effectively	2	5.71
				3.6	• Learn leadership and team management	5	14.29
				3.7	• Communication and presentation styles	7	20.00
				3.8	• Preparation for future career	2	5.71
				3.9	• Using advance architecture software like Revit	4	11.43
	Total	25	100		Total	35	100.0
2	**Team members behaviour**	**24**	-	4	**Concerning matters**	30	-
2.1	*Behaviour -valuable*	15	62.5	4.1	• Communication- English ineloquent and dialect	22	73.33
2.1.1	• Team work spirit	8	33.3				
2.1.2	• Helpful	1	4.17	4.2	• Do not learn and use advance architecture software for assignment project/ university syllabus.	3	10.00
2.1.3	• Active in participation and hardworking	3	12.5	4.3	• Different level of understanding, different process to proceed more in designing	2	6.67
2.1.4	• Knowledgeable and skillful	2	8.33	4.4			
2.1.5	• Very fluent in speaking and translating	1	4.17	4.5	• Cultural difference or adaptability	1	3.33
2.2	*Behaviour- detrimental*			4.6	• Hard to gather group member	1	3.33
2.2.1	• Disturbing group mates during working	**9** 1	37.5 4.17		• Crowded environment	1	3.33
2.2.2	• Reluctant to do assignment/tasks	1	4.17				
2.2.3	• Reluctant to spend more time to do works	1	4.17				
2.2.4	• Not appreciating group mate's ideas	2	8.33				
2.2.5	• Underestimate group mates' capability	2	8.33				
2.2.6	• Low working motivation	1	4.17				
2.2.7	• Not communicate with other group mates	1	4.17				
	Total	24	100.0		Total	30	100.0
					GRAND TOTAL	**117**	

5. Survey Result

Overall, for the group effectiveness score, about two-third (64%) of the students rated the group work as very effective to them, about one-third (32%) rated the group work as effective and a small number (4%) rated the group work as ineffective to them. The group work effectiveness was evaluated based on their responses on how the group work influence their personal view toward their own group because literally they do not response specifically according to the survey question. Figure-1 shows the result of analysis on effectiveness.
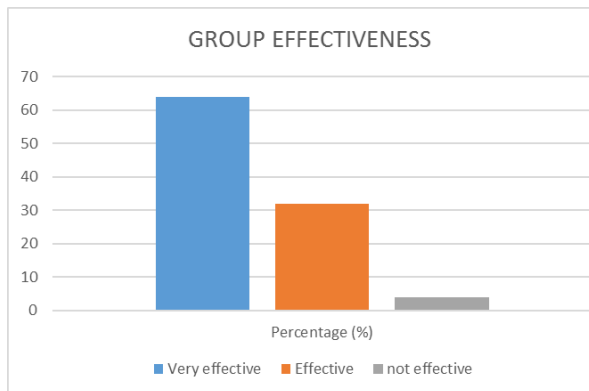
Figure 1. Result of analysis on effectiveness   **Figure 2.** Lesson Learnt

For the team members' behaviours, the findings revealed that the valuable behaviour that were recorded, were higher (62.5%) than the detrimental behaviour (37.5%) during their group. Among the valuable behaviours highlighted are, Team work spirit (33.3%); Helpful (4.17%); Active in participation and hardworking (12.5%); Knowledgeable and skilful (8.33%); and Very fluent in speaking and translating (4.17%).

The students, both IIUM and FSMWU, highlighted that their group mates have showed positive team work spirit (33.3%), active as well as hardworking (12.5%) and knowledgeable (8.33%). Other students response appreciation towards their friends' helpful acts (4.17%) and very fluent in speaking (4.17%), thus reduce the communication gap (refers to the concerning matters at the end of the report) during the group works.

Whereas, the detrimental behaviour recorded are as follows, disturbing group mates during working (4.17%); reluctant to do assignment/tasks (4.17%); reluctant to spend more time to do works (4.17%); not appreciating group mate's ideas (8.33%); underestimate group mates' capability (8.33%); low working motivation (4.17%); and not communicate with other group mates (4.17%).

For the detrimental behaviour findings, some of the FSMWU students reported that the Malaysian students (IIUM) were not appreciating their ideas in making group decision. Some of the IIUM students reported that students from FSMWU underestimates their group mates (IIUM) capability related to the application of advance architectural computer software.

The students highlighted numbers of responses for the question of lesson learnt that can be used for the next implementation. Among the highest rated lessons learnt, the students highlighted they have learnt useful communication as well presentation styles (20.0%), different architectural systems (17.14%), leadership together with team management (14.29%) and using advanced architecture computer software (11.43%). Other useful lesson learnt for their next project were listed as Collaborating in team work (8.57%); Sharing, choosing and delivering ideas (8.57%); Respects different ideas (8.57%); Delegate job effectively (5.17%); and Preparation for future career (5.71%). Figure-2

shows the percentage of opinions on the lesson learnt from students' experience that could be applied to future implementation.

For the last section, among the concerning matters raised by students are as follows: the majority of the students (73.33%) highlighted the issue of English ineloquence as the main reasons to deter communication and group discussion. Some of the students (10.00%), particularly the IIUM students emphasised on the lack of course provision in advanced architecture software provided by the department.

Some of the IIUM students commented that most of the FSMWU students were very advanced in architecture software such as Revit. However, some of the FSMWU students were also focusing more on manual techniques in their studio, thus they face difficulty in adapting to the new application to design. This finding suggests the necessity of having specific architectural software workshop or class in relation to the industrial practice. One minor issues raised by the students are having opposing perspectives in design process (6.67%), coming from two different schools of architecture. Some of the students also review cultural difference (3.33%) as the reason of miscommunication during the group work, which could be associated with another issue to unite the group member (3.33%). Also, some of the students complained on the issue of crowded environment (3.33%) which had caused discomfort to the group work.

6. Conclusion

Hitherto, this research has investigated the students' matters of concerns during the Joint summer school program between IIUM (International Islamic University Malaysia) and FSMWU (Fatih Sultan Mehmet Waqf University) and students' perspicacity on the learning collaboration they have experienced in the joint summer school program (JSSP). The findings were derived from the qualitative data analysis software and translated into statistics figures for clearer findings.

This research has revealed that the joint summer school program has effectively generates group work spirit among students, as only 1 out of 38 students found the program was ineffective. The program has also shown that there are positive and negative generative behaviours that students had during the process of learning collaboratively. However, in-term of percentage, valuable behaviour has surpassed decremental behaviour during the learning process; thus, it could be concluded that the minimal decremental behaviour could not jeopardise the whole group work performance.

Students have also expressed their opinions on numerous lessons that they had learnt, which could serve as important aspects to be considered for future implementation of the same program. The most important lesson highlighted is, they learnt to understand inter-cultural differences; in-term of communication, design presentation styles, leadership, and team management.

In fact, communication is perceived as the most dominant concerning matter that students expressed. Although English is the main medium of communication, but both groups of students do not come from English speaking nations. Thus, they speak English with their folkloric dialects that makes understanding each other difficult. Therefore, for future program, similar level of English eloquence among students should be one major aspect to be considered for future implementation of joint summer school program. In general, the information generated from this research should provide insight for the department in hosting an efficient joint program with other university.

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