Developing Sustainable Approach in Architectural Education: Lesson from Critique Session Experience of Architecture Studio Program

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Abstract—Architecture as a linked field to other knowledge has a close relation with other sciences and the effect of different world concerning is obvious on it. Architecture was able to find best solution and appropriate response to all different concerns whether during, Classic, Gothic, renaissance till now. There are few years that fear of ending natural sources and concerns of the destructive and negative effect of technology on next generations’ portion from nature has attracted the attention of all sciences and different professional majors to find ways to generate new sources of energy that they called Sustainable. Architecture was not also excepted and by surveying different suggested methods in industry of Building as a most space of humans’ presence in it, tried to Accelerate the achievements. But today, the definition of sustainable and the domain of it have changed and it has known in vast meanings and categories now. Education is one of these categories that it has to be containing the word, sustainable. Especially in art and architecture that their influence on generations would be multiple and multilateral, because students are the future designers and peoples’ life will be influenced by them. Answering to questions “How better accept” and “how react” on what we receive in critique sessions, beside different cultures, backgrounds and even different learning styles is the goal of this paper.

Key-words: Architecture education, Architecture studio, Critique session, Design component, Sustainable approach in design

1 Introduction
In today’s world which all concerning are about sustainable and all efforts are to troop all humans’ need with less destructive and negative effect on next generations’ portion, sustainable education as a first stage of attitude and effect on future can play an important role. Indeed if educating system be able to has a positive impact on its’ inputs, then it can import its influence to the whole society by its numerous outputs. Especially in art and architecture this influence would be multiple and multilateral, because students are the future designers and peoples’ life will be influenced by them.

Education is completely linked by spiritual and mental aspects and has direct effect on thoughts and ideas; even it can make patterns and line behaviors for humans’ life. So we ought to pay more attention to education phenomenon.

Derek Rowntree [1] stated that if we wish to discover the truth about an educational system, we must first look to its assessment procedures. Architecture is involved with every aspect of the design process from concept to completion, and because of the nature of its education, the architect is ideally suited to exercise and maintain overall management of the project. In architectural educating system, design studios as prevalent or even only way of teaching and learning are based on lectures and critique sessions. Critique sessions in contrast of usual lecture classes are new experience for students and face them to new situations that expect them to expose themselves to others critique and learn how to find creative solutions, and their success will assess in this way too. The expectation of facing to routine professional critique and this question that what happens within an individual’s mind and what happens between two people that lead to different results makes the critique sessions more important.

On the other hand the locus of studies in this millennium is shifting towards skills acquisition, rather than knowledge accumulation, for autonomous self-directed and lifelong learning. In same condition once a technology is developed in a certain country, it’s know-how can be instantly spread out all over the world, neglecting the cultural aspects of countries to or from which it propagates. On the contrary the spiritual and cultural aspects of human life, namely, how to enrich men’s day by day life, cannot easily be communicated. The interchange of man’s cultural aspects is not as easy as that of materialistic ones.

So in this paper we investigate the implemented critique methods in architectural studios all around the
world and investigating the utility of assessment by surveying the satisfaction and dissatisfaction points of UKM (University Kebangsaan Malaysia) students as a case study and in closing we will give some suggestions to upgrade the available system to try to reach the sustainable architectural education.

2 Background
All of us can remember the first days we were standing in front of our classmates and teacher to present the project we had done as our assignment. The project which we had spent all last night awake to prepare something good from our opinion. But all feedbacks were consisting of disagreement of the teacher. This situation was predictable; all the past experiences were different from on goings. Lecture classes replaced by design studios and desks with drafting table and the answer of the questions were not tough before, so there was no expected outcome to the assignments.

In current academic courses, design studio education is reflected in homework revision practice. Students and teachers collaboratively develop a design theme, share objectives, ideas, issues and solutions [2]. The studio instructor suggests some revisions in the design that he/she feels will be better in solving a particular aspect of the problem. Following the desk crit, the student is expected to more fully explore and test these options and suggestions by revisiting his or her solution. The studio instructor will then review the outcome of the student’s revised solution suggesting further changes.

Concurrent with the formal studio desk critique, students will informally critique each other’s work throughout the semester, and learn various design skills and drawing and model construction techniques from each other. The solution will present in various evolving forms from sketches to fully developed drawings and models, dimensions and scales of the design problem. The pin-up involves a form of peer review in which the student formally presents his or her work to the studio class and the instructor. The student will restate the problem, outline the issues being addressed to solve the problem, present their solution or alternative solutions, and describe the process by which they arrived at a tentative solution. Once the student has completed his or her presentation, the work is open for discussion and critique by the instructor and the class.

Classification of design studio practice
There are different types of design studio applications which can be implemented by the supervisor of design studio. These applications are categorized into five groups according to the critic style and/or given possibilities to the student to be creative and productive.

Fig.1 shows crit type 1, there are eight or twelve students in each group. Students are obliged to take crit from studio supervisor for their design work which studied outside of the studio environment.

Fig.2 shows crit type 2, there are eight or twelve students in each group. Students are obliged to take crit from studio supervisor for their design work studied inside and outside of the studio environment [3]. They are supposed to study their own desks. The studio supervisor gives desk critics, answers questions individually. No discussion takes place in these studios.

Fig.3 shows crit type 3 that the studio work has to be done by a group of students under the supervision of a group of professors. Each professor gives advice to a different student at his/her desk. Thus each student can
have different point of view by taking crits from different professors. Generally, there can’t be any class discussion. Each student has to construct his/her own solution to the specific design problem according to the given advice and recommendations.

Strength point of this type is that each student can get crit from different supervisors. Preliminary Jury and Final Jury system is implemented. Lack of enough collaboration and participation in the studio practice is its weak point.

Fig. 4 there is a “frequent jury” system in the studio teaching. A group of professors who are responsible for different student groups come together regularly in the juries. Common jury discussions will be held.

Strength point of this type is that even though it is limited, there are opportunities and possibilities of discussion and participation in the studio environment throughout the juries[2]. as a weak point we can mention being supervisor-centered. During desk critics, students are supposed to study individually[2].

Fig. 5 shows crit type 5, a constant jury system is applied in the studio teaching Concentrated Studio. 2-3 professors manage the studio operations. The students are at the same academic level and responsible for the same project assignment.

3 Research Methods and Findings
The initial observations show that all above five types of critique sessions are used in the studios by the necessity that the instructors’ may feel. Also by investigating the implemented assessment tools in architectural studios we found nine categories which some design studio teachers already utilize many of them, but without the placement and label upon the behavior. These nine categories are:

1- Individual Critique
2- Formative Critique
3- Summative Critique 4- Peer Critique
5- Group Critique
6- Public Critique
7- Written Critique
8- Seminars
9- Pannel Discussion

But the target of the paper is to study the effect of these implemented methods on students, so based on literature review and our frame work stated in introduction, we formulated a survey consisting 20 questions as an initial part of our research. Except first seven and last four open ended questions asking their thoughts on the issue, all the questions in the survey have a likert-type attitude measurement items having five levels.

The questions in the survey can be categorized as follows:

Q1: how often your instructor(s) explain about the purpose of design juries / panels etc?

Q2: show your satisfaction level in desk crit, informal class pinups, final juries

Q3: show your agreement level on the named goals of instructors. (18 items asked in questionnaire)
Q4: how often the desk crit cause you to show these reaction (Encouraged, confused, nervous, inspired, etc (14 items asked in questionnaire))

Q5: how often the panel presentation cause you to show these reaction (Encouraged, confused, nervous, inspired, etc (14 items asked in questionnaire))

The data to be presented in this study were gathered during the second year class from convenience sample 23 undergraduate students (9 male, 14 female) of the department of architecture at University Kebangsaan Malaysia (UKM). The initial evaluations show that 100 percent of students believe that more over student who present his/her project other students in the class observing the jury can benefit from the jury or panel. But they also mentioned that in current way the presenter is one who just benefits. This phenomenon may route in lack of good and sufficient explanation about the target and structure of criticizing in design studio classes, as we can see in Fig. 6 this explanation and encouragement to attend in this type of discussions took place sometimes or rarely.

![Figure 6](image)

Figure 6. How often during your current and past studios instructors explained about the target and structure of crit sessions and encouraged you.

done researches show that students feel so frustrated and frightened to present their designs in crit sessions in front of looking eyes. And they are worry to belittled and slighted by the peers and jurors. Bringing these senses to crit sessions makes students to just look for the acceptance from the instructors and if it doesn’t happened they feel disappointed and loose other statements and suggestions coming after and just want to know what the exact solution is. Fig. 7.

![Figure 7](image)

Figure 7. How often do the desk crit because students feel different feelings

Martha Schwartz, professor at Harvard states that the final jury is almost always going to be anti-climatic. You’ve already done 90% of the learning during the design process. You’ve already been through your struggle, and it’s over by the time you present. The real learning process has already happened. Students often think that they’re going to get this big kick at the end of all this, but I think they’re looking at juries in the wrong way.

The jury’s job is not to tell students whether or not their work is good or bad. Instead, their job is to raise issues and make the student think. Rather than evaluation, Schwartz’s ideas of a jury include the purpose of discussion and teaching students to be critical and constantly question existing conventions, experiment, and explore their design ideas. Self-criticism is a behavior a student enacts while creating a design to explore possibilities, and debate ideas inside their own mind[3].

Fig. 8 shows student’s satisfaction amount in desk crit and informal pinups and final juries. It can be seen that the total average amount of desk crit is the maximum and final jury is the least.

![Figure 8](image)

Figure 8 The percentage of student’s satisfaction
please consider Fig.9 the comparison of students feeling in desk crit and panel review in both type students expressed same level of nervous and the level of being encouraged indifferent in panel presentation was in higher level.

Figure 9 The comparison of students feeling in desk crit and panel presentation in percentage

Problems
According to students and teachers experience in design studios and their feelings and feedbacks here, we mention some important weak point below:

- every crit type, the design process is an educator—centered
- In every crit type there is limited participation and collaboration between students. There is not enough group study to motivate students to be creative and socially satisfied
- Sometimes teachers think they shouldn’t interfere with creative process, so they not saying much at all.
- Giving some undefended opinion to students without giving suggestions about what they can do.

Suggestions
By asserting the strength and weak points of available crit methods we can help to make some effective changes to upgrade the existing system. There are some of the suggestions:

(1) *Generally in every crit type, the design process is an educator-centered one. Conversely, the design process should be changed into a student-centered process. Because educator-centered activities inhibit students’ creativity and prevent them from doing practice freely.*

(2) *In every crit type there is limited participation and collaboration between students. There is not enough group study to motivate students to be creative and socially satisfied. dividing help students to learn how to present in front of other students and give more confidence for presentation and also make chance to give some new ideas from students in group to shift their design process to next level.*

(3) *Start with positive critique instead of negative to avoid of some bad effect on students. And don’t use of shock tactics.*

CONCLUSION
As Sabol [4] explain architectural design education can be said to fit into the authentic assessment tool rather than the standardized. authentic assessment does not focus on the factual knowledge as end itself. Rather, it focuses on the ability to use relevant knowledge, skills, and process for solving open ended problems.

Another key factor that distinguishes authentic assessment from traditional one is that it provides opportunity for students to integrate many kinds of learning [5]. Some design studio teachers already utilize many of the steps in this process, but without the placement of a label upon the behavior.

If a structure and consistency were applied to the criticism they receive, students would be better prepared to give and receive criticism. In closing this a part of bigger investigation we started at UKM in Malaysia and we try to help the educating architectural system to fill the holes and upgrade the existing system to reach the sustainable education in architecture. The research will be completed by importing different type of items in our investigation such as race, gender and also different aspects which has important role in crit sessions.

References
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