UNIVERSITI TEKNOLOGI MARA

FSPU
FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING

FULL PAPER
PROCEEDING

3RD UNDERGRADUATE SEMINAR

BUILT ENVIRONMENT & TECHNOLOGY

SEPTEMBER
2018

ISBN 978-967-5741-67-8

FACULTY OF ARCHITECTURE, PLANNING & SURVEYING
UNIVERSITI TEKNOLOGI MARA PERAK BRANCH
SERI ISKANDAR CAMPUS

UiTM PERAK @ Seri Iskandar

A STUDY FOR STUDIO DESIGN LAYOUT AND AUXILIARY FACILITY FOR DEPARTMENT OF ARCHITECTURE IN UiTM SERI ISKANDAR CAMPUS

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Abstract:
Studio is an essential working place for architecture students to express their work in relation to how they experience and communicate themselves within their atmosphere. As an architecture student, working in the studio will help us to boost our performance efficiently. Universiti Teknologi MARA (UiTM) has been regarded as one of the oldest and pioneering architecture and built environment school in Malaysia and essentially has worldwide recognition. However, due to the high intake volume of students, it might lead to improper studio layout and subsequently some of the impromptu studio arrangement will definitely affect students' performance. This initiative was specifically aimed to identify the preferred criteria of studio design based on the collective survey and data from the students' perspective. The essence of time must be contemplated in order to achieve effectiveness of studio usage. Several methods that were used to gather data mainly through interview with students, observation and questionnaire. Auxiliary facilities provided in the studio are considered supporting facilities. Results reveal that the most effective studio layout is linear organization and this is proven to be the most desired by end-users.

Keywords: Studio; Desirable Layout; Supporting Facilities; Studio Design and Organisation

1.0 INTRODUCTION

Based on history, architecture studios were founded by 12 partners and based in Paris. With the combination of various professionals such as architects, interior designers, town planners, quantity surveyors and green designer, it helped in bringing together a substantial team. The team then expanded and evolved within years (Bretagnolle, 1989). As architects, having a studio is important for them to help in finishing the projects and tasks. All the studio equipment is important in helping the architects to improve their performance efficiency. As technology develops year by year and so does architecture. There is s a big gap between the past and present days. In the old days, the uses of studio were quite different from todays because of lack of technology and equipment. Now with new and advanced technology, all works are much easier to produce such as hybrid drawings that combine hand drawing and digital thus this is also used in architecture schools today. UiTM is one of the oldest and pioneering university in Malaysia with regards to the Architecture school that has been declared worldwide, according to the vice chancellor himself Dr Sahol Hamid Abu Bakar, Malaysian architecture encompasses many different elements and factors that influence the structural design. Today, the architecture design is more frequently focussed on the environment and good consideration of the building itself. The Faculty of Architecture, Planning and Surveying acts as the Centre of Studies for Architecture and will surely provide opportunities to fulfil the requirements for professional graduates in the field.

2.0 LITERATURE REVIEW

According to Meriam-Webster dictionary (2003), a studio can be defined as a workplace, study, recording, exhibit and maintenance. Architecture studio, however is a class in an undergraduate or

graduate professional architecture program (such as a Bachelor of Architecture and Master of Architecture) in which students receive hands-on instruction in architectural design.

2.1 History of Studio

Studio-based instruction and learning has become a hot topic in K-12 education (kindergarten to 12 grades) today. Knowing the origins of studio-based learning as well as architectural education can provide us a deeper understanding of the purposes and goals of this method. In many ways, an educator can learn much about the students in studio-based from their own history. Throughout the years, the studio exists as amenity for the students and educators in producing a good design. Its purpose remains the same with the studio as a centre of knowledge between users to share their thoughts.

2.1.1 Origins of Studio-Based Learning in Education

Studio-based emphasize students' interest and motivation as well as integrated curriculum, active learning, learning by doing and expression through the arts. In the late 1800s, John Dewey established the Laboratory School in Chicago using with the sum of the insights of Froebel like Bauhaus of architectural education and then was followed by superintendent William Wirt at Horace Mann High School, which imply students to spend at least one hour a day in the studio having lectures, questioning another's presentations, viewing and learning new skills.

2.1.2 Origins of Studio-Based Learning in Architecture

The European tradition was greatly influenced by North American architectural education. Ecole des Beaux Arts act as the ultimate in architectural training which is prestigious among students. The Beaux Arts system uses design problem as their term for students to carefully develop under close tutelage. It starts with esquisse, or sketch problem and end with charrette or finishes drawings to be submitted to master for critique (Cuff, 1992).

2.2 Technology of Architecture

In the early 20th century, architectural drawings were considered works of art where architects used water colours as their final touch of drawings. So, their works were embraced as valuable collectibles. Then, the process eventually pushed for more standardized to engineering drafting technique. There is also a textbook that recovered several chapters about the proper way to sharpen the pencil. The use of tracing cloth and ink to produce a final drawing were widely recommended a long time ago. Several technologies were attempted in architectural practice that originated within military, automotive and aerospace industry. These then collaborated with various universities and research institutions around the globe resulting in the first CAD system. Then, the first sketchpad was established that allowed the designer to draw on their monitor using a light-generating pen and copy master drawings into many duplicates.

2.3 Requirement for Design Architectural Space

Basically, there are two requirement that needs to be considered in order for designing the architectural space which as follow:

2.3.1 Technical Performance Requirement

Visual comfort. The enough illuminance in the studio can be nourished naturally or artificially. The suitable lighting level provided can potentially give out the positivity in health and performance of users.

2.3.2 Thermal comfort.

Thermal comfort is one of the most influential requirements for consideration. Hwang et al (2010) state that air temperature, air movement and mean radiant temperature have a significant effect on student thermal sensation while learning. The ventilation system helps clear the air to user's productivity.

2.3.3 Acoustical comfort.

The exchange of ideas through oral communication between student and lecturer and student to student. Poor acoustical space results in failure to understand people with background noise and ventilating (Bradley, 2005). This will increase stress and decrease the productivity of a user.

2.3.4 Functional Performance Requirement

Cubicle quality and layout. Demirbas and Demirkan (2003) define that the quality of the cubicles in the design studio has a greater impact on the comfortability for its user. The comfort is also affected by the furniture size, furniture comfort, walkways and cubicle arrangement.

2.3.5 Interior finishes.

Interior finishes are decorative elements that provide a comfortable environment and spread positive value toward users. In the studio, the decorative elements can be the furniture, lighting, bookshelves, portrait or even a small gallery to exhibit their works.

2.3.6 Brainstorming (group gathering) space.

Aside from the drafting works, in the studio, there's also a critique session handled by lecturers or among students. The provision of instructional equipment like white boards and projector can improve social skills, plus enrich their general knowledge (Mizban and Roberts, 2008). Students will get an enormous amount of benefits using communication tools for easier understanding.

3.0 METHODOLOGY

This overall research is divided into 3 phases. Phase 1 is where issues and problems regarding the studio design will be determined. Various sources of literature reviews and existing precedent will give a better understanding regarding this topic. In phase 2, data are collected as much as possible to obtain the most precise and truthful data. Data collection is conducted using primary and secondary method. Primary data will be conducted on site. Last, phase 3 will be carried out where all data are analysed, synthesized and reviewed for any recommendation.

4.0 ANALYSIS AND FINDINGS

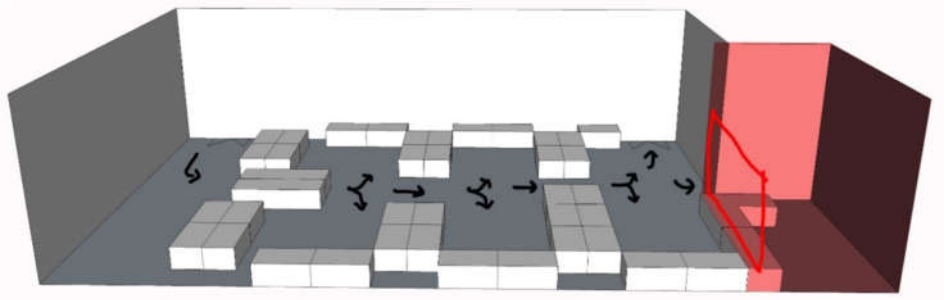

Figure 1: Simulation of Beginner Level Studio 2A

This studio is considered as good on its overall performances. Most students spend their time in the studio when doing their task and projects. When free, they just hang around and connect with each other. Based on the survey and observations, this studio design layout has not achieved its satisfaction for most of the students. Most of them disagree with the layout format because this layout affects their place regarding to uneven amount of working space between each user. Also, the unused space in this layout will become a waste affecting its performance.

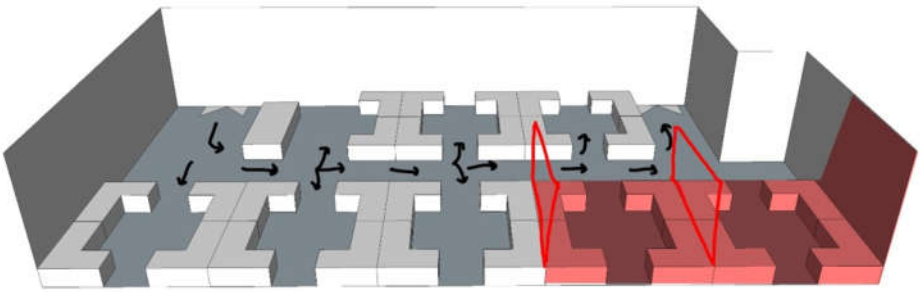

Figure 2: Simulation of Intermediate Level Studio 4A

The overall performance of this study has achieved desirability for students. This studio design layout has furnished convenience and comfort for the students. As for the auxiliary facility, most students find that it is in good condition, thus improving their performances in working continuously. Through observation, students spend most of the time in their own place and made it livelier.

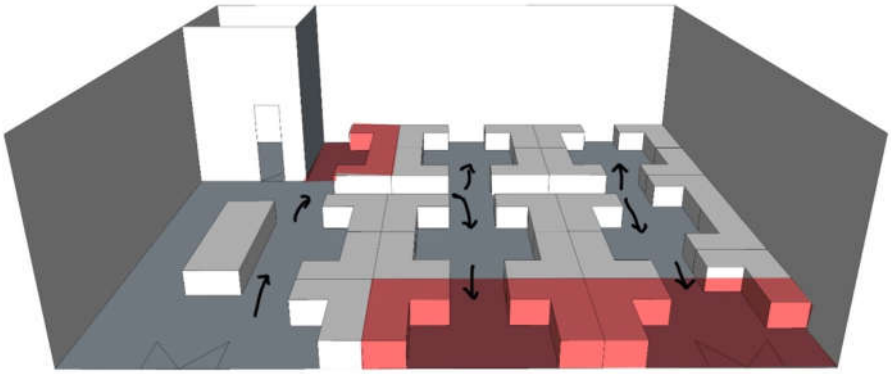

Figure 3: Simulation of Advanced Level Studio 7C

From observation, this design studio layout resulting poor circulation due to too much space used in it. However, most students spend more time in the studio because of the good privacy for their own place. This will encourage them to work more efficiently without having disturbance. After collecting quick surveys, students clarified that this design studio layout does not suit their needs and desire. This studio layout provides a poor circulation resulting difficulties for them to have a discussion and socialise among themselves.

Table 1: Usage of Lighting

Education Level	7.00am – 1.00pm	1.00pm – 7.00pm	7.00pm – 12.00am
Beginner Level	50	45	70
Intermediate Level	75	65	175
Advanced Level	30	60	110

Referring to the table stated above, it shows that the least usage of a studio is in the morning because usually students are attending their classes. The results are quite the same in the afternoon as the sun is the hottest then. In the evening, students come to studio while some others preferred exercising and playing sports. The studio started getting crowded at night as the students start designing and brainstorming. As for regular days, the beginner and intermediate students tend to spend more time in the studio compared to the advanced students. Most of the beginner and intermediate students are provided hostel thus it makes it easier for them to go to the studio. The advanced students, however, are non-resident students. They spend their times in the studio more during weekdays because the transportation limits their time to

circle around from studio to home. Also, the surveys show that most students agree with the existing design layout studio. Some studio may require maintenance because of some auxiliary facility that are not functioning, but for overall, the studio in the faculty gets good feedback from students.

5.0 CONCLUSION

By making detailed observations, interviews, questionnaires and survey forms, it can be concluded that most studios provided a good design layout and auxiliary facility. Studio layout desired by most end-users are linear organisation. It is proved to be more accessible and convenient than most of the studios in the faculty that used another spatial organisation. The auxiliary facility in the studio helps in creating a good environment to improve the students' performance. The key for designing studio is to produce a good layout for students. This layout will embrace the students interacting with each other with cubicle workspace as the boundary and privacy between male and female students. Besides, the environment includes ventilation, lighting, anthropometry and ergonomic are needed to be considered as an important element of good studio design

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