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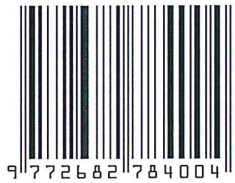

TABLE of CONTENTS

Voice of Academia
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Md Noor et al. / Voice of Academia 16(1) 2020, 57 - 65

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A STUDY OF STUDIO ENVIRONMENT ON STUDENTS' PROJECT OUTCOME

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ABSTRACT

Teaching and learning the Industrial Design course in a university is usually conducted in a design studio, a place that develops and implements the assigned project work. However, design studios in the local universities still lack facilities and features. By saying so, we refer to outdated, imprecise and uncomfortable crafting tools, and environment. Thus, this research will investigate the studio-based design education environment from the viewpoint of Industrial Design inputs, such as cultural influences, facilities and functional parameters. Previous study has indicated that bad studio environment impacts the quality of a student's project outcome. Limitation of space in the studio is an accurate example. Hence, by referring to the issues of the studio space including dull and less than encouraging environment, students are less compelled to devote their time in order to complete their tasks in the said enclosure. This project is set out to explore the factors of positive relations for learning in the arts and design studio environment where the students are able to carry out their ongoing project works. The importance of one to one teaching is still maintained by most faculty, especially in the arts and design studio environment where the students need open space and area for the completion of their project. The research objective is to find out the relationship between Industrial Design student's department with the environment affecting the quality of their project outcomes.

1. INTRODUCTION

A good environment influences our emotions especially when working on an important task. According to Vohs, K.D, and Heatherton, T.F (2000); the environment affecting our ability to work, is specifically in term of quality. This research will study on the environment that influences the student from the emotional and behavioural perspective in completing their final assignment or task at each semester. It focuses on how an environment can influence the students' project outcome (environment of study) and how to recognize the right learning environment for the production of quality pro-

ject outcome throughout their the entire course. (Hektner, J.M, Schmidt J. A., and Csikszentmihalvi, M. (2007). The problem identification focuses on the environment affecting the quality outcomes of students' project and arranging space from their place to complete their project at workshops.

This project sets out to explore what are the positive relations for learning in the art and design studio environment. The importance of one to one teaching is still maintained by most faculty despite of the economic pressure to adapt large group; expressed by Alison Shreeve and Ray Batchelor (2012). The research objective of this study is to find out the relationship of the Industrial Design department with the environment affecting their quality project outcome.

2. PROBLEM STATEMENT

The problem identification focuses on the environment that affects the quality outcomes of a student's project and space allocation to complete their project in the workshop. This project is set to explore what are the positive effects of learning in the art and design studio environment for students with ongoing project/ work. The importance of one to one teaching is still maintained by most faculty in spite of economic pressure to adapt to large group; expressed by Alison Shreeve and Ray Batchelor (2012) at the same time students need to use the studio and also most of them need a workshop to complete their final project. According to Green (2005) and was cited by Haszlin, as he pointed out,"The design studio is the heart of most industrial design curricula and is a place to visualize and represent aspects of a problem graphically and to think as a designer".In the studio context, it can be said that, studio is a place to produce and draw creativity within the students including drawing, problem solving and communication with others.

According to Bruner (1960) students can perform better when they are in an environment with great condition especially the studio space. He even expressed and discussed this issue in various media like newspapers and magazines about comfortable surroundings influencing the emotions and cognitive aspect of a person in terms of learning and as well as mood to learn.

3. RESEARCH OBJECTIVE

The research objective of this study is to find out the relationship of the Industrial Design students with the studio environment affecting the quality of their project outcomes and to identify the problem or constrains faced by the students. The study will be conducted in several commercial place in order to obtain the data for this problem.

4. AIMS

1. To undertake a critical review of the literature covered by current research regarding practices to studio-based design education processes and outcomes.

2. From the analysis of the data in (1), to gain a better understanding of what investigations are required with respect to curriculum design, teaching, learning and assessment practices and other related issues. And develop an understanding of the main parameters and variables describing the current studio-based design education in Malaysia.

3. To obtain empirical data relevant to the parameters of studio-based design education system. Further, to analyse these data and to summarize the findings in the light of the views and aspirations of the teacher stakeholders.

4. To summarize findings and conclusions for studio based learning in Malaysia and outline opportunities for further research.

5. RESEARCH QUESTION

The In view of the above aims, this research will investigate, from the perspective of the studio based design education, a pragmatic research methodology:

1. What are the important structural parameters and constituent variables that need to be considered when developing a Malaysia studio based design education system?

2. What are the current understandings and related views and aspirations of the design teachers as stakeholders about the studio based design education pedagogy and system practices?

3. What are the critical issues and problems that need to be addressed to improve the studio based design education environment?

4. What are the implications of the education environment reforms and changes impacting on the studio based design education environment?

6. METHODOLOGY

In this research, both quantitative and qualitative research methods will be used to address the research questions and objectives. Multiple methods will allow the different research objectives and questions to be fully explored. This study will focus final degree students. This research is to study about the environment at the Industrial Design Department and, to what extend the environment effects the student's project outcome during their final assessment in the final semester. It also will study on behavioral aspect of the students in completing their final task during their final semester.

This research actually aims to study on the case study of students involved with the environment and what kind of influences are faced by the students and whether the outcome of project by the final degree students can be well completed or otherwise. In this study groups of design students have been selected and surveyed, and in the above context using the qualitative and quantitative, mixed-methods research (Cresswell and Clark 2007; Creswell 2009) and studio learning conditions that have been standardized as practiced and given to the two different cultural contexts.

These methods include the use of Likert scale and open-ended questionnaires as well as one-on-one interviews with students and it will be discussed in Chapter 3, a common project brief (which has similar design requirements) will be used to generate and analyse data. This research will face three different stages until the research ends. In the first stage of the research, there is an analytical description which depends on reviewing and studying which is available for the environment in their area. Next, for the second stage, primary data from a case study is used with several semi structured interview and observation done via open-ended and close-ended questionnaire will be executed.

So, there will be a selected case where in depth conditions on their current living environment effects the project outcome of the student. Selection and cataloging of case studies on the subject, or area will be built by using a desk and field research methodology, and by interviewing targeted community and experience by the researcher. Furthermore, secondary data is used, published materials in the form of printed and online publications such as books, thesis, journal, online article, newspaper, to add on more knowledge and support this case base on that issue. Lastly, will be the process and validation. The real situation validation of this final research is on the performance and contribution, whether it answers or not the research questions.

The study is will be found in the Primary data and Secondary data.

(a) Primary Data Collection

1. Observation.
2. Questionnaire (open-ended and close-ended)
3. Interview.
4. Analysis of on some environment in studio of Art and Design University.

(b) Secondary Data Collection

1. Published materials in the form of printed and online publications such as books, thesis, journal, online article, newspaper.

c) Observations on Five universities:

1. Universiti Teknologi Mara (UiTM), Shah Alam.
2. Universiti Putra Malaysia (UPM), Serdang.
3. Universiti Sultan Zainal Abidin (UniSZA), Terengganu.
4. Universiti Malaysia Kelantan (UMK), Kelantan.
5. German Malaysian Institute (GMI), Kajang.

7. DISCUSSION

A good environment influences and affects the diversity of human activity in our everyday life as point out from PE Davis-Kean (2005) which states that the behavioral outcomes will indirectly influence through a cognitively stimulating environment. For example, a clean environment can increase a person's mood of work, such as working in the office or in the studio. In addition, the facility also plays an important role in facilitating a person work well and comfort when making and completing work as J Baker, D Grewal (1994) said, for example doing work in the studio requires ample facilities such as comfortable desks, chairs, air conditioning and equipment that are always in use while doing work in studios such as rulers, eraser, technical drawing, and so on. Additionally, the layout of the studio at work also plays a role in looking neater and in order than ever to motivate work, for example a desk layout according to the appropriate layout and conformed to the interior layout for studio.

The project is set out to explore what makes positive relations for learning in art and design studio environment where the primary mode teaching is through a dialogic approach which engages students with on-going project work. According to Alison Shreeve and Ray Batchelor(2012),

the pressure is to adopt a large group to teach if they do not sit in place or space are not comfortable. This means a bad environment can affect a person's emotional and dedication to learn as well as when the student who wants to complete their project on their model to qualify them to another stage to get a good career in industrial design after their completion of a study.

Hence, to complete their final project the students need to use the studio and workshop. The study will be conducted in several department to obtain the data for this research. The objective of this research is to identify the problems or constrains faced by the students. According to Bruner (1960) students can perform better when in an environment with a great condition especially a place that involves studio area. Schon suggested that other schools of non-design profession should learn from the deviant (i.e., irregular or unexpected) nature of the architecture studio (Schon 1985). Schon rejected the established procedure of professional education and suggested that subjects can be taught in a rigorous way but not based only on the application of the theoretical knowledge (Proudfoot 1989). More recently, Green used qualitative and quantitative methods (Creswell 2009) to evaluate the performance of senior student in a proper studio setting at the University of New South Wales, and found that students who used design methods and stayed in a good studio environment (Jones 1963; Cross 1981) to finish their project/work, performed consistently, in relation to the quality of their project outcome than students who were less informed of this method.

In addition, reports regarding design studio stated that there are four known level in learning sessions which was identified to be a part of Studio Teaching Project (STP) that has been researched by Zehner, Forsyth, Musgrave at al (2009). The main focus of this report is to identify, describe and investigate the circumstances and characteristics of the studio environment in various areas of arts, and design courses. In the table 1 below is the lists of principle studio teaching characteristics identified in volume 3 of this STP report, which are also widely understood in general design circle (Frankham, Wilson et al. 2009).

In studio context, emphasis is placed on creativity, drawing, problem solving and communication by Shaharudin, (2013).

	STUDIO TEACHING CHARACTERISTIC
1	Practical project – learning through making and doing.
2	Group discussion and critical feedback – the critique.
3	Workplace/industry integration between curricula.
4	Praxis – effective integration between practice and theory.
5	Effective use of materials, development of craft and technical skills.
6	Professional practitioners as lecturers and tutors.
7	Dedicated and appropriate space.
8	Workshop, equipment and technical resources.
9	Small class size and one to one teaching.

Figure 7: Principle characteristics of studio teaching extracted from STP report Volume 3 (Frankham, Wilson, et al. 2009).

This STP report was point out by Shaharudin, (2013) stated that the use of term ''studio'' is considered central to various design such as in the fields of architecture, industrial, graphic,

multi-media, fashion and interior design. In these cases, it was also reported that the design studio has a long-standing and fundamental role in defining educational concepts such as flexible learning, reflective practice, learning in action, and embedded learning.

Besides that, students are taught the basics of model-making right in their freshman year where they create sketch models. The skills acquired are carried forward to the design studios and all the processes are carried out in the studios, so the studios play an important role for student to complete their assignment. In the design studio, the model building process begins with design sketches; once a design has been finalized and drawings prepared (either hand drawn or computer aided) the scale of the model is decided, materials selected to create the model and the building process begins as cited by Azizan and Wan Omar, (2015). According to Azizan and Wan Omar, (2015), the building process has three main steps, (1) drafting the model outline onto the material selected to build the model, (2) cutting out the pieces, and (3) gluing the pieces together to create the desired shape. In this case, the student works on a selected research topic under the guidance of their lecturers was undertaken during the final semester. 5 weeks of preparation were given as part of the final semester year project. So, it was clearly that studios play as an importance role for the student to brainstorm their ideas and create their design. Hence, the environment and design of the studio should be a place that will attract students to sit there for a long time and comfortable.

The studio is usually a large room equipped with drawing tables and chairs to enable students' stay and work independently on their project. Good natural environment and lighting in the studios are essential for effective drawing work and idea generation for their design. The studio walls enable students to ''pin up'' their sketches or drawing for review. Based on his findings, Green, (2005) coined that the design of the room contrasts the traditional teaching classroom and whilst lectures occur within the studio their nature is more in the form of presentations and discussions and the studio teaching process is supervised by a studio director and a number of tutors assist in coaching students as the project progresses.

Figure 2.1 (a) Design studio environment and student presentations.

Figure 2.1 (b) Design studio environment.

A good environment will produce quality work. To achieve quality in work, a person should have a calm and comfortable environment and have complete facilities as pointed out by Schön, (1985), believes that such implicit knowledge in design can only be learned in a Unique studio environment. Studio learning 'culture' can be developed for the students. The good environment has the potential to now transcend its physical make-up of chairs, tables and small room for sharing two or three between them simply offering a place to study and self-belonging. This shall then provide student groups with a sense of identity, value and offer the opportunity to build self confidence in individuals and groups. The studio can become a melting pot of ideas and opinions, encouraging autonomous learning to develop. Furthermore, the final student's will struggle as working long hours into the night producing the perfect design to blow away their tutor and peers at the next day's critic. According to Spruce. J, (2007), he state that the design studio environment gives a lot of inspiration and benefits to students in completing their work.

8. CONCLUSION

Giving knowledge to the audience and understanding of the environment focused towards the students of art and design and what are the elements or factor that affect them during the completion of their final project is the aim of this study. This study is very important because we intent to be alerted on the problems or constrains that are faced by the student of the Art and Design Faculty so that the challenges can be properly addressed in order to improve their learning condition and environment.

Besides that, sharing what was identified for improvement, this paper shall be able to share new approaches with other Universities on this course design. This research can be the reference not only to industrial design students but also to others in the design field and design industry. Hence, by proving the sharing process or adaptation from another discipline, knowledge for those involved in the design industry is enhanced. Lastly, this paper aims to attribute to the Ministry of Education on what is a suitable environment for the student-based studio learning and working environment.

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