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## ABSTRACT

*This paper has investigated a design method for furniture designers in Malaysia to allow users to express their needs and aspirations through place making or creation of meaningful office workspaces. During the field work, we discovered that there were problems in getting the users to explain their ideas through verbal explanations. They did not have the proper techniques and tools to express their ideas. From there we started to use mock-ups as tools to communicate and engage with the respondents in our investigation. In the research, we have identified a promising participatory design approach, role-play with mock-ups. The study revealed that, by using role-play with mock-ups directly with the users, allowed the designers to quickly become aware of arising issues without the need to do a potentially time-consuming, normative and tedious observational study. This research approach is primarily leads to new understanding about practice and described as “practice-led” approach to research. This project had investigated, demonstrated and opened the possibility that these approaches could be turned into a practical participatory process toward design and place making in furniture industry practice in Malaysia.*

**Keywords:** *Practice-led, participatory design, place making, role-play with mock-ups*

## 1. INTRODUCTION

Design practice has begun to explore new dimensions. Designer role has become as important researcher to triangulate within the user needs and interpreting the creative process in design practice. The designer/researcher must equip themselves with the knowledge and the skills of a practicing designer form as part of the research process, and this has produced a new way of doing research.

Bowen (2007) stated that, there are three possible relationships between research and practice:

- Research about practice – inquiry focussed on practice
- Research for the purposes of practice – inquiry to inform or provide material for practice.
- Research through practice – inquiry achieved via practice.

“Designers have to practice design in order to conduct research”. This research then could be said to be practice-led research, which has also been termed ‘research through design’. “Practice-led” research is concerned with the nature of practice and leads to new knowledge that has operational significance of that practice. It is a creativity segment that is relating a concept to a particular body of knowledge towards innovation (Mäkelä, 2007). Using design project shows, how researchers have been a practicing designer to produce design ideas.

Our method in this research sought to build the techniques which previously used by Mitchell (1995) and Lemons et al. (2010) which is research through practice. Firstly, we identified the importance of understanding the

needs and aspirations of users with regards to office furniture. Then, using participatory design role-play with mock-ups, it had enabled all respondents and participants to reveal their current problems, needs and aspirations. They started to create useful design ideas and opportunities for designers in developing new workplace designs.

The mock-ups helped the respondents to overcome their ignorance in design. It had also helped the participants and respondents to overcome their low awareness of 'design language' and started to share their concerns. Through exploring how mock-ups could be used as productive tools to explore users' needs and aspirations.

## 2. RESEARCH OBJECTIVES

This research aim to;

- i. explore research through practice.
- ii. explore the practical applications of participatory design role-play with mock-ups.
- iii. develop a methodology and gain new ideas in developing office workplaces, especially through the design of furniture in Malaysia
- iv. propose a methodology for designers to create meaningful workplaces through a participatory design approach.

## 3. METHOD OF METHODOLOGY

Our main method was divided into two main research approach as explain in 3.1 and 3.2. Our approach is fully integrated design project within academic research. In each of these approaches, the inclusion of a design project constitutes an empirical enquiry from which designing (as activity) and designs (as outcomes) are sources of research data.

The results of practice-led research may be fully described in text form such as guideline/guidance without the inclusion of a creative work or artefact. The focus of practice-led research is to explore new knowledge about practice, or to advance knowledge within practice.

### 3.1. Role Play with Mock-Ups

Due to the differences in level of knowledge and design experiences between users and designers, sometimes if they were unable to effectively communicate between them; it was highly recommended to use mock-ups (three dimensional full scale mock-ups) as an alternative tool (Ehn & Kyng (1991)).

Other similar research suggested the use of scale mock-ups as in the approach used by Mitchell (1995). They used mock-ups to explore users' needs and an effective design language that made sense to the respondents. The participatory design method allowed the users to be involved in the process of design development at early stage.

An indirect result from the role-play approach was the design work that had contributed to the design development in this research. Study from Ehn and Kyng, (1991), Mitchell (1995) and Lemons et. al. (2010) can be concluded that 3D models (Figure 1) during role play design task, help us to generate and evaluate ideas and they give better visualisation of users' ideas. Thus, the conceptual design work had also challenged the users to generate their own ideas and needs in order for them to reveal their own design concept.

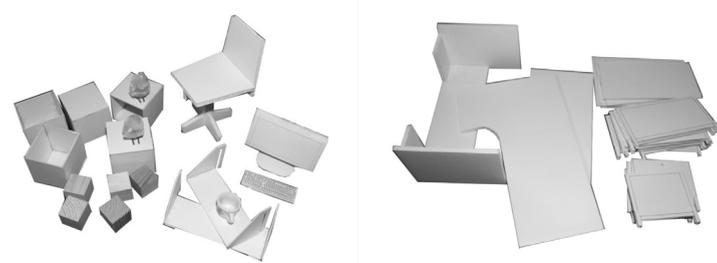


Figure 1: Mock-ups

### 3.2. Direct Observation

Direct observation was one of the social inquiry techniques used in this research especially during the role-play with mock-ups sessions with office workers. In conducting the role play with mock-ups, direct observation was initiated to identify any information that was not mentioned in role-play activities. Observation was an essential element to understand an ongoing behaviour, process and outcome of unfolding situation. Taylor-Powell and Steel (1996) stated that "Seeing" and "listening" are the keys to observation. They clarified that observation provides the opportunities to document activities, behaviour and physical aspects without having to depend upon peoples' willingness and ability to respond to questions.

According Yazid (2010), direct observation is very useful when details of an activity need to be accessed and when interview techniques are unlikely to draw out the required information due to the respondents either not knowing or being unwilling to say during the interview sessions.

## 4. FINDINGS

Personalizing workplace with personal items and belongings (Figure 2) served to express people's personality, emotions and status within the company, thus helped the employees cope with stress.



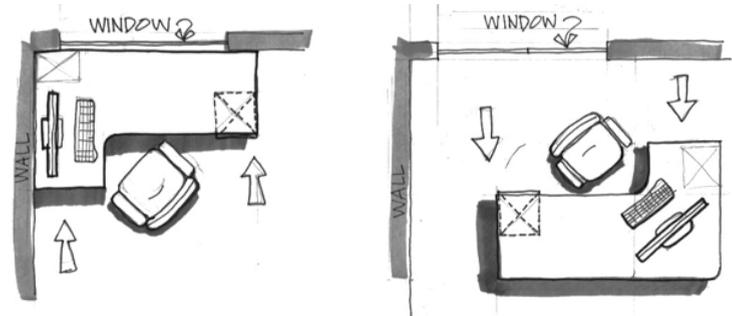
*"...workers in open spaces tend to personalize their workplace with their own belongings compared to workers that work in closed office. This is the ways to mark their territory. Person in closed office has their own office spaces so they have low needs of personalization..."* (NE03, non-expert)

Figure 2: User's Workplace

### 4.2 Place-making

Some of the respondents re-arrange their office layout according to their practical needs. They used their own assumptions to rearrange their office layout and they believed it would improve their working environment. NE10 and NE11 changed their workplace in total for better office layout.

*"... I have changed the office layout. I don't like it. I move my table 180degree and facing toward the window. I think after changing the layout we get bigger space..."* (NE10, non-expert) (Figure 3)



#### Previous layout

NE10 sitting toward his colleagues that makes him feels un-comfort. Un-used

#### Current layout

NE10 turned his workplace toward the window to get bigger space.

Figure 3: Sketches by NE10 - Place-making

### 4.3. Meaningful workplace

Through role-play with mock-ups, it could be seen that all respondents personalized their workplace whether with their own belongings or office ornaments as indicators to mark their place/territory and to show their ownership to their workplace (Figure 4).

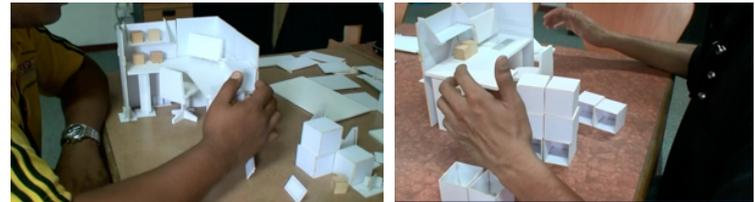


Figure 4: Marking their Territory

### 4.4. Privacy

Visual privacy was one of the main issues, with some of the respondents complaining that they had difficult to concentrate with their job when they could see others walking around them. Some of the respondents hoped to get higher partitions/divider around them in order to gain more visual privacy.

**NE07 workplace**  
 Medium high screen partition  
 at the front side to give visual  
 privacy

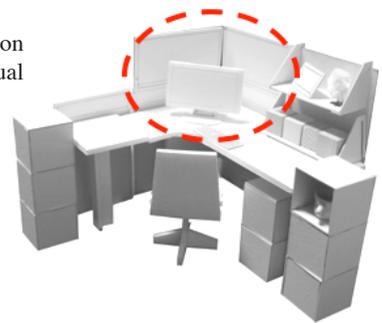


Figure 5: Privacy

### 5. DEVELOPMENT OF DESIGN IDEAS

The final stage in the design process is to build workplace design. Design workshops were performed. In each workshops consist of office worker and furniture designer. During the role-play with mock-ups, the participants in all workshops seemed to use the mock-ups as a tool for analysis and negotiation between groups. Once the mock-ups were in use, it was observed that the participants who had been reticent became more active in contributing ideas to the discussion.

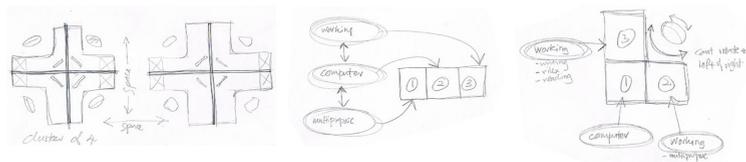


Figure 6: Sketches by Design Workshop participants

A few ideas that were not thought out during the initial discussion were revealed once they started the role-play with mock-ups. Using three dimensional mock-ups, it had helped them to predict the real office situation. It was also seen, compared to the initial observation, a greater number of ideas emerged after the mock-ups were introduced and participants appeared to arrive at an agreement more easily.

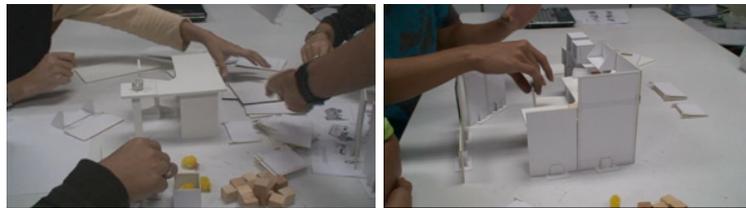


Figure 7: Design Workshop

### 6. DISCUSSION

The research had enabled us to propose a systematic guidance for designers and design researchers using an appropriate technique in design research. Our expectation was that this investigation would help designers, researchers and educators to identify appropriate approach on how to engage users in their practical work through the context similar to the one we had investigated. The combination of contextual inquiry, research methodology and implementation of participatory design role-play with mock-ups formed a triangulation towards the objectives of the investigation.

Rahman (2010) found that, ample space should be given to designer/researcher to be creative in manipulating a situation in which the outcome of the research may end up closer to the objective of the study.

This research had also demonstrated and proposed a process of how designers could involve users in understanding design problem and creating new ideas. This research process was developed and refined through the research project and finally formed a methodology for design practices that could be implemented and relevant to any designers/researchers/educators with similar research interests. In this research we used office furniture as our case study but, this methodology could also be adapted for different contexts and different design cases. The research conducted was to help designers in how to engage users in their projects/design process in developing new design for future uses.

Our research methodology took a step back, In relation to Mitchell and Lemons. We did the refinement within the circle process (Figure 8). The process involved an expert, non-expert and design workshops activities to produce larger data and more design opportunities.

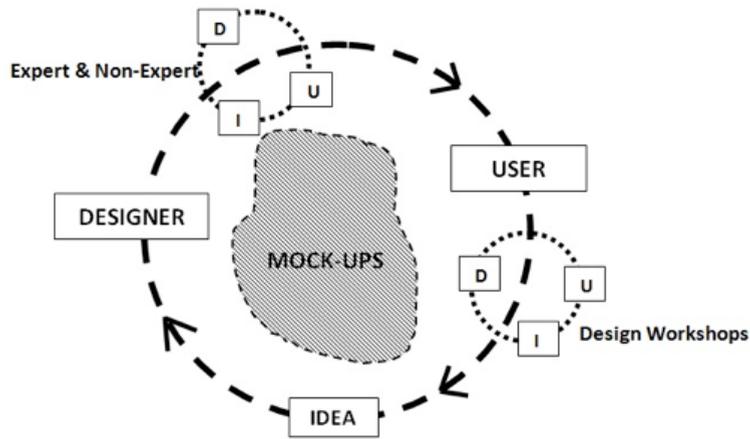


Figure 8: Our Research Method as Participatory Design Approach, Role-Play With Mock-Ups

In this section, it shows that the research was aimed to produce guidance for designers are keen of role-play with mock-ups approach and also to be adapted by other researchers that wanted to implement this approach in their research project. This research methodology provided the outlines on how designer could understand the needs and aspirations of the users and engage them in design process to reveal design opportunities. Finally, we will summarise our role-play with mock-ups methodology and suggest how this approach is able to be implemented in other/wider design field.

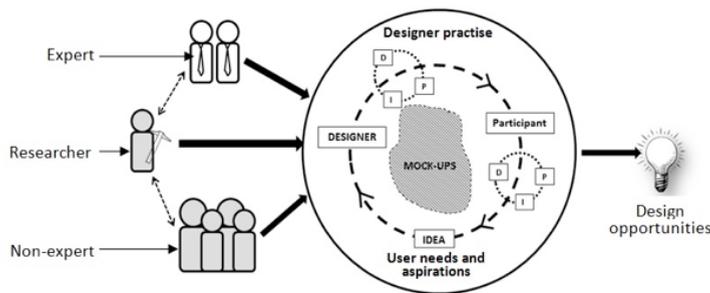


Figure 9: Role-Play with Mock-Ups Approach to Inform Ideas

The design approach in figure 9 illustrated a triangulated understanding

of researcher (creating a method for our research), non-expert (needs and aspirations); expert (design and requirement in real practise and how they could be engaged in creating new design ideas.

The outer circle is the participatory design approach activity in the design process and the inner circle is the role-play with mock-up activity that employed in this research context to inform ideas. These findings created a tool to connect the participants, engage and employ them in the design process.

Figure 10 develops the concept in figure 9 and illustrated how the method could be implemented to meet designer/researcher needs. It consisted of four design stages.

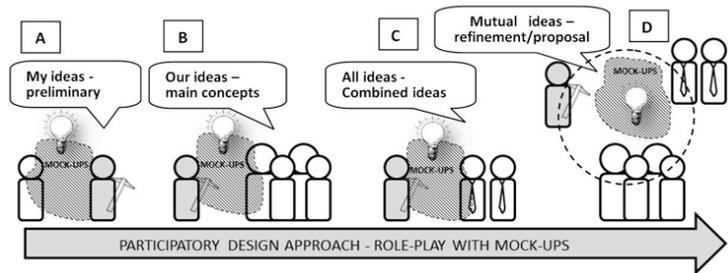


Figure 10: Our Method to Foster Ideas

- A. **My Ideas** - Early understanding and user-engagement between users and researcher to analyse users' current experience in their everyday practice. The role-play with mock-ups process was to create themes/keywords in the contextual inquiry of the research. The role-play with mock-ups created the outset ideas in the design process. Users could directly involve in demonstrating ideas of their workplace.
- B. **Our Ideas** - Evaluation and development activity by focus groups to foster mutual agreement in creating design ideas. Role-play with mock-ups had created active discussion and revealed new ideas beyond participants thought in the earlier stage. Participants could discuss, modify ideas and predict the situation in almost real situation during the design process.
- C. **All ideas** - Reflection from experts regarding ideas from users. Experts evaluated users' design ideas and analyse whether the process revealed useful design opportunity. Along the design process, the design ideas were developed with a number of

limitations which must be noted. Using role-play with mock-ups, expert's merged/combined users design proposals with their professional practice to produce possible design solution.

- D. **Mutual ideas** - Non-expert and expert (assisted by researcher) performed in the role-play with mock-ups in design workshops to seek for mutual agreement. This was the process of design refinement and to create useful new design ideas. Effective design involvement by participants during open discussion led not only to better ideas/design proposals, but it was a win-win situation to satisfy all groups.

## 7. CONCLUSION

In this research we have conducted the role-play with mock-ups to create and investigate the past, present and future needs. The mock-ups were useful tools and designer, researcher and educator could easily gain users' insight without having to go through a complex observational study.

To date, user-engagement in developing furniture design was neglected in Malaysia. This study showed that this research approach was workable in Malaysian design practise. The process was not just focused on designing a product, but it was also a process of understanding the users' needs and aspirations that contributed to the progress of the research. Moreover, it enhanced the connection between designers and users. The research experiences and process gained in this research had enabled us to understand the technique of user-engagement in design processes.

The combination of creative knowledge design understanding in user-engagement activities and implementation of methodology had enabled us to produce a relevant technique in design research. This research could be developed continuously by other designers or researchers, and disseminated through publication and teaching by Malaysian future designers.

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