Pedagogy for the Integration of Work-based Learning in Undergraduate Design Programme: A Participatory Design Model

* Wong Shaw Chiang

Faculty of Design, Raffles University Iskandar
Johor Bahru, Malaysia. Email: wongshawchiang@raffles-university.edu.my

Tan Wee Chuen

Raffles University Iskandar
Johor Bahru, Malaysia. Email: tanweechuen@raffles-university.edu.my

Abstract

Integration of industrial specific skills and knowledge from workplace environment into the curriculum has received increasing attention in curriculum development at universities. The engagement between the stakeholders and students in learning is important to enhance the student's employability skills, which is identified as a gap among graduates. This paper reports the development of a participatory design model that emphasizes on the engagement of industry stakeholders and a module taught in undergraduate design programme. The model is discussed in the context of pedagogical process that aims to develop employability skills and to achieve the course learning outcomes. Students' works are presented to the project stakeholders and a reflection of the teaching and learning outcomes is discussed. Upon reflection, the findings indicate that the pedagogical process enables students to engage with industry stakeholders and produce visual design outcomes that fulfill industry requirements and expectations. This model provides an alternative way to encourage work-based learning at university level.

Key words: Pedagogy, Work-based Learning, and Participatory Design Model
* Corresponding author

Introduction

A number of reports indicate that many graduates do not have the skills and qualifications which match the requirements of the industry (Razak *et al.*, 2014; Hanapi & Nordin, 2014). The Malaysia Education Blueprint 2015-2025 has highlighted the mismatch of the graduates and employment requirements. Research findings show that the mismatch between employment requirements and graduates' capability is one of the factors that cause the unemployment issues among Malaysian graduates. Examples of mismatch include the lack of problem-solving, communication, leadership, creative thinking, critical thinking and management skills (Che Omar & Rajoo, 2016; Hanapi & Nordin, 2014). This has triggered the reengineering of the curriculum design in higher education institutions to ensure the graduates obtain the skill sets which meet the industry needs.

A well designed curriculum needs to be coupled with pedagogy in order to maximize the achievement of the learning outcomes. Guidelines to good practices of work-based learning in curriculum design was introduced by Malaysia Qualifications Agency (MQA) in 2015. Work-based learning (WBL) is defined as experience-based learning that engages students in experiencing the work role through undertaking the work-based project, the production of goods and services while achieving the learning outcomes (MQA, 2015; Sweet, 2013; Lemanski, Mewis & Overton, 2011). WBL facilitates authentic learning by involving the industry to participate in curriculum development and delivery. Various models are suggested to encourage WBL. It encompasses from a work-based

study degree to the use of various pedagogies such as service learning, experiential learning and participative learning (MQA, 2015; Fuller, 2003; Lemanski, Mewis & Overton, 2011; Sweet, 2013).

This paper aims to present a case study of the integration of work-based learning in a module of Bachelor Degree in Graphic Design. The module was delivered using participatory design model with the partnership between the organization and the university through a project undertaken in the organization. Student's work from the project is presented as well as a reflection of the teaching and learning outcomes.

Module Synopsis and Project Description

Bachelor of Graphic Design (GD) programme at Raffles University Iskandar (RUI) is currently being reviewed to meet MQA's initiative to integrate WBL into curriculum for enhancement of students' employability skills in higher education institutions (MQA, 2015). RUI aims to provide quality education using flexible teaching and learning methodologies which involve the collaboration and engagement with the industry and community. The University is committed to a transformative paradigm where "future innovations will require intensive collaboration between stakeholders" (Gardien, Djajadiningrat, Hummels, and Brombacher, 2014, p. 119). The curriculum design and delivery of the GD programme is aimed to better prepare students with the necessary expertise and skills required in the industry.

The participatory design model was employed in the module entitled "Graphic Design and Society". In this module, students were given the opportunity to critically assess the GD's process and practice that may impact an organization. The course learning outcomes (CLOs) of the module are: (1) Use graphic design skills to make a positive contribution to society. (2) Investigate complex issues that may exist when producing graphic designs. (3) Suggest choices based on ethical consideration when answering a design brief. (4) Communicate with both the general public and potential clients regarding ethical, legal and social issues and concerns involved in graphic design.

A 12-week work-based project was assigned to the students with an aim to achieve the CLOs as well as to develop skills such as problem solving, communication and project management skills. Students were facilitated by an experienced practitioner throughout the learning and working process. To be more specific, participatory design approach, which emphasizes on the engagement of the stakeholders in the design process, was applied to replace the typical "lecturer as client" approach to foster the authentic and work-based learning experience.

Participatory design approach highlights the importance of a "new" student-stakeholder interaction based on a cooperative process. This means that the industry stakeholders and end users are valuable sources of information and ideas. They play active roles in the production of the design to ensure the solutions proposed and produced by the students meet their needs and are usable. In such context, students no longer need to identify, understand and analyze the design problems and research the possible solutions independently, thus avoiding making unnecessary assumptions of the expectations and requirements of the stakeholders. More importantly, the students can investigate and explore designer's role in taking into account of the stakeholder's input in the design process. A pedagogical plan that builds upon the ground of participatory design approach is developed to facilitate the process (see Figure 1).

In this project, the industry stakeholders were identified by the project facilitator. They were the founders and teachers of an occupational therapy centre (the Centre) based in Johor Bahru, Malaysia. Initial meeting was conducted by the project facilitator and industry stakeholder to establish the mutual agreement about the work-based project and CLOs of the module. After that, the students were required to work and communicate with the stakeholders to develop the working relationship.
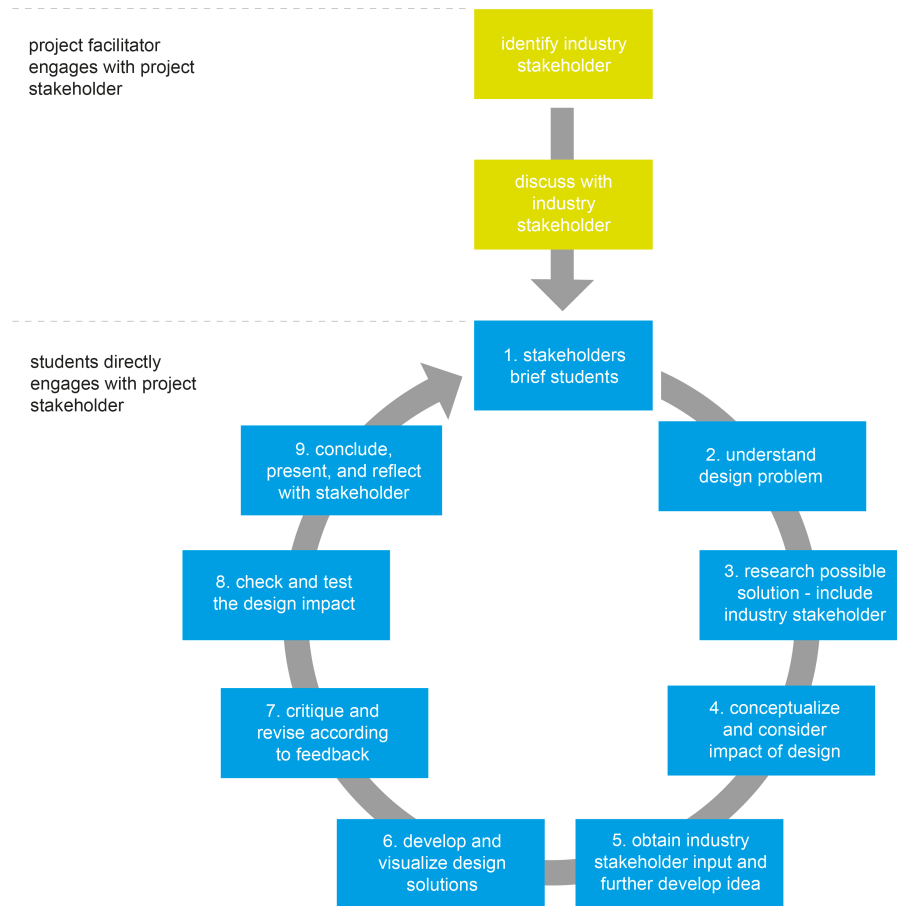
Figure 1: Participatory design process as applied to Graphic Design and Society project at RUI.

Collaboratively, the students were requested to identify a specific problem or design opportunity with the industry stakeholders to deliver the project outcomes. In order for the design solution to be usable and applicable, students were required to conduct extensive research into the scope and depth of the design problem with the stakeholders (see Figure 2). Through the partnership and collaboration with the stakeholders, the design solutions were conceptualized. The students spent their weekly learning time in the organization. The stakeholders provided real-time feedback regarding the strengths and weaknesses of the students' works (see Figure 3). The students were made aware of the importance of the engagement of industry stakeholders throughout the iterative design development process. Figure 4 illustrates the design solution and outcome through the collaboration of the project with the stakeholders. At the end of the project, students were given the opportunity to present their works and usability test results to the stakeholders (see Figure 5).

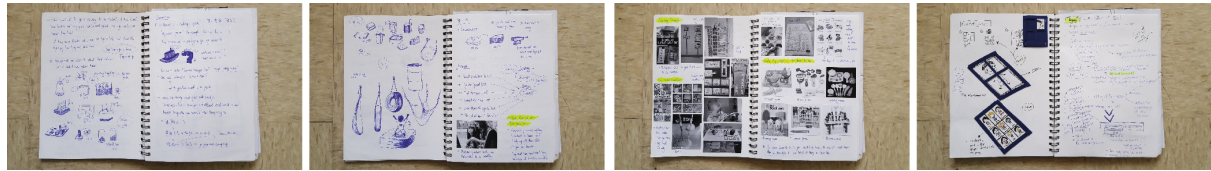**Figure 2:** The Students engaged the industry stakeholders to identify the design needs and opportunity.

Figure 3: The students' reflective journal that recorded the research findings, design solutions development and reflection.
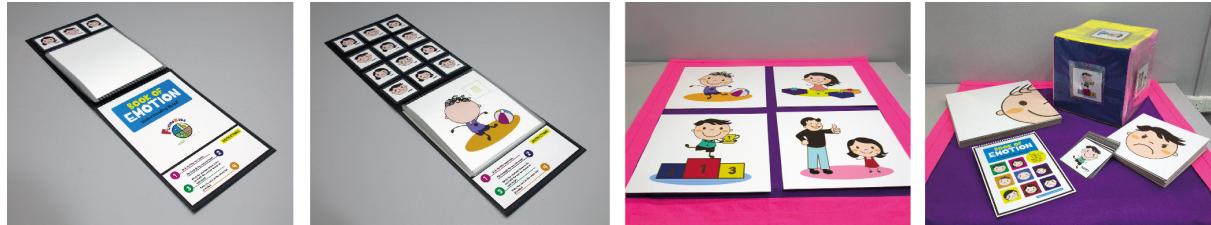

Figure 4: Emotion Set for Special Education. The emotion set consists of a dice, an exercise book, and playing cards.

Figure 5: Students' presentations

Throughout the process, the project facilitator helped to plan and conduct various supporting teaching and learning activities such as seminars, in-class and off-class discussions and sharing sessions to equip students with the relevant knowledge and practical skills, and to provide guidance and motivation to the students in working with the stakeholders.

Reflection

It is interesting to find out that the students who were involved in this meaningful project were reluctant to collaborate with the industry stakeholders at the beginning, as they probably were used to separate themselves from the industry stakeholders in the conventional learning. Some examples of quotes from students' reflection in their journal are given below.

" ...through this project, we both knew the importance of empathy towards others… we should remove our bias when evaluating the needs of our client… the overall design process is different as we need to consider the design and solution based on the needs of our clients..".

"… I have learned how to work with industry people. We always do projects in the classroom in previous semester and this opportunity made me understand more about the requirements of the industry and its people, and also their method of working…"

The student continued to elaborate that:

"…we thought that we did not communicate our idea well with the clients at the beginning… sometimes, we asked them what they wanted instead of standing from the point of a professional designer to tell them what we could offer to them and do… we asked for direct solution instead of solving the problems ourselves… to be honest… we felt a bit disappointed with our problem solving skills… obviously, we were also lacking of a lot of practical

> *knowledge such as how to select the most appropriate materials for our proposed design… the outcomes looked very simple but the production part was very difficult and time consuming…"*

The overall learning experience was perceived meaningful by the students as they were given opportunity to deal with their real clients. It allowed them to better understand the working practices in the industry and they were able to identify the skills they lacked of. On the other hand, when reflecting upon the project outcomes, the industry stakeholders were satisfied with the design outcomes. The industry stakeholders were also impressed by the students' reflective journals which documented the progress and reflection of the project. In addition, they also highlighted some aspects such as research and analysis skills, communication skills, problem solving skills and working attitude that the students could improve to match the industry needs.

Limitations and Further Research

It is important to note that there are several limitations in this study. First, this study was just a mini case study and reflection of the integration of work-based learning in a module of Bachelor Degree in Graphic Design with very small sample of students. The proposed pedagogical model, therefore, may not be applicable and generalisable to other disciplines that also implement the practices of work-based learning. Though this model was established based on a design discipline, it can be used in future studies to develop similar pedagogical model in other disciplines and to draw comparison with this model. Second, this study did not include the reflection of the facilitator for his involvement in the project. However, project facilitator's views are important to be considered if an effective and efficient work-based learning process is expected. Accordingly, future studies are needed to collect the data from students and industry stakeholders as well as educators with bigger sample in order to further contextualise the findings of this study and provide a more in-depth understanding of their work-based learning experiences and used in curriculum development and delivery process more generally.

Conclusion

This paper reports the use of participatory design model that emphasizes on the engagement of industry through a collaborative project with the industry in a module taught at undergraduate level. The model is discussed in the context of pedagogical process that aims to enhance student's learning experience through engagement with industry stakeholders. It emphasizes reflection as an integral part of the learning and the iterative design development process that allow students to reflect consciously on practical and work-based experience.

Acknowledgement

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