ACTIVE LEARNING, ACTION RESEARCH : INTEGRATING SERVICE LEARNING IN FURNITURE DESIGN CURRICULA

Mariana Wibowo
Head of Furniture Design Course Studio, Interior Design Department Lecturer
Petra Christian University
Siwalankerto 142-144, Surabaya - Indonesia
mariana_wibowo@peter.petra.ac.id

Abstract - **This paper presents a model of an active learning and action research in experiential learning curricula in furniture design program that integrates with Service Learning. Data on student learning about community's habit and behavior in using furniture was collected via survey, focus groups, and reflective writing. Five benefits students were volunteering to teach design, improving oral communication skills, developing a real design project's skills, developing awareness about social problems and learning design with different culture of community. The program is planned for which the student will earn credits and result in design products in children public study center in Surabaya, Indonesia. This study demonstrates that students will gain more benefits by using service learning in furniture design project program.**

Index terms – service learning, furniture design, curricula

INTRODUCTION

The experiential learning curricula in furniture design program that integrates with Service Learning at Petra Christian University of Interior Design provides a unique opportunity to increase student awareness of social equity, global issues, and different cultures of community. Many furniture design educators and furniture industry believe that a real world and a real project in education is imperative in order to ensure students are well equipped to manage the responsibilities of the positions they will eventually hold. There are many ways to provide real project experiences for learners through apprenticeships, internships, and more recently through different forms of experiential learning including service learning and community engagement.

The purpose of this paper is to present the mechanism that was developed to provide service-learning that integrates with furniture design curricula. In addition, the paper presents the impacts of these service-learning activities on student learning and research in creating a furniture design.

Experiential learning is a necessary component of formal instruction in universities for several reasons. First, faculty are concerned with optimizing the chances for their students to more easily enter their chosen professions or meet their desired goals upon graduation from the university program due to decreasing job markets and increasing competition among college graduates across most all fields of study (CAEL 1990; Gettys 1990). Second, the typical student is becoming more complex. More nontraditional learners are opting for university study, and demanding

more varied modes of learning (Kerka 1989). Also, student recruitment, retention and completion rates are a major concern of most university faculty. Seibert, Hart and Sypher (1989) and Baker, et. al. (1991) document the benefits of experiential learning for student career decision making and for development. Interestingly enough, students tend to continue their education at a significantly increased rate, after participating in experiential learning as part of an undergraduate program according to O'Neill (1992) and Gregory (1990).

As design educators, our goal for the student is not only to create and train competent and creative designers, but also to prepare citizens with technical training who can systematically assess the impacts of a design on health, local and global users, environment and can implement design solutions based on analysis and research from design methodology process.

Petra Christian University considers service learning to be one of the most important tools in vision of caring and global university. Service learning connects students with societal issues related to furniture and its ergonomic that can be solved through their designs. It gives students opportunity to see how their furniture design can give a big impact in enhancing the quality of life, health, user's comfortable feeling, and how it can change community behavior and standard of life. Student is not only volunteering to teach how big is design plays big role to life and improving oral communication skills in the community, but also developing a real design project's skills, awareness about social problems and learning design with different culture of community. The program is planned for which the student will earn credits and result in furniture design products in children public study center in Surabaya, Indonesia. In this paper, theoretical framework, project finding and service learning furniture design curricula, impact, and challenge of the service learning furniture projects explained.

BACKGROUND

Service-learning is a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities. It is a teaching and learning approach that engages students in addressing real unmet needs or issues in a community and actively involves them in decision-making at all levels of the process (Pritchard, 2004).

Even though there are many different interpretations of service-learning as well as different objectives and contexts, we can say that there is a core concept upon which all seem to agree: Service-learning combines service objectives with learning objectives with the intent that the activity change both the recipient and the provider of the service. This is accomplished by combining service tasks with structured opportunities that link the task to self-reflection, self-discovery, and the acquisition and comprehension of values, skills, and knowledge content. It has also been shown that service learning can increase the development of intellectual thought, cognitive abilities, improve academic performance and achievement, and strengthening student's citizenship education, their senses of community responsibility and their abilities to participate as a good citizen.

Design starts with inspiration, the very beginning of an idea. The inspiration may come from viewing furniture in a house, a store, or from sources as diverse as the form of a beautiful building on the street in the city. In successful design, there is a fine line between adhering to the initial idea and experimenting with creative options to strengthen it. Overworking a piece can obscure and confuse its original intent, yet working it too little can leave it underdeveloped, and the resulting object neither fulfills its intended function nor realizes its full aesthetic potential.

THEORITHICAL FRAMEWORK

In approaching design, it is useful to establish a process that help organize the work, eliminate oversights and lend a bit of logic to what can be a frustratingly subjective exercise. Stem (1989) coined that a good design process to create a furniture can have some stages / steps :

1. Conceptualization. Here you can create a design concept which evolves from the initial idea and a "problem statement", which is your plan of how to proceed during design.
2. Research. Research all aspects of the problem to collect as much information as possible.
3. Design development. Develop the design to a point where the object can be built.
4. Implementation. Implement the design (construct the piece)
5. Evaluation. Evaluate the complete project.
6. Presentation. Present the piece in professional, informative way.

Linkage to Service Learning, the portion at active learning, action research, from the two part of Stem's stages can be described below :

1. CONCEPTUALIZATION AND RESEARCH

The first task of furniture design is to craft the initial idea, a concept is a well-defined, formally stated idea that describes the main idea or issues (whether structural, functional or visual) the piece will address. In design, this stage is called "conceptualization".

To create a concept of a furniture design, you must first develop a "problem statement", which is simply a definition of the issues to be investigated in design. A problem can be stated simple or complex. The point of a strong concept is to give direction to the development of the furniture design, while at the same time allowing the maximum evolution of the idea. In this way, a strong concept allows the designer to establish a framework within which to settle any questions and problems that may arise in the development and construction of a furniture design. Function is a good place to start, but it may not be enough to state. (Stem, 1989).

In here, service learning plays its role. Approach conceptualization is reached by active learning furniture in the community's homes and action research to collect as much information as possible via surveys and interaction to the community society. In this way, result of the active learning and action research hoped can be settled any problems that may rise during the learning process as learning and the evolution of design can be given to the community as a service.

2. RESEARCH FOR COLLECTING INFORMATION

When research is directly responsible for a concept, designer usually assimilates the information and focuses it in a new direction, bringing his or her own point of view to the process. Research can also be influenced by a technical process (such as bending plywood), function (which involves analysis of a person's physical and emotional requirements for a piece) or a specific object (such as a type of furniture).(Stem, 1989).

In here, students are doing their research influenced by function which involves analysis of a person's physical and emotional requirements. Research might start with such tangible tasks as determining furniture height in relation to the furniture to be used and the body size of the users and determining the length in using the furniture, width and general proportions of the furniture in relation to the room and its traffic patterns. The designer would investigate the needs of the users (community). Research would also include the designer's observations on appropriate furniture shape and the style that would best complement other furniture in the room.

If a furniture concept were based on knock down, research might include a review of historical and contemporary knock down furniture and of adjustment and its mechanism. Materials might then be researched as well as technical processes. The student used research to refine their concept of creating an innovative method of furniture while using materials efficiently. So, there will be more advantage in doing action research, the student also give service to the environment by giving a minimum amount of wastes.

Service-Learning also allows students to put into practice their learning and research. Once the student sees that the service experience will make a real impact on people's physics, emotional, environments and lives, the ownership of the project and the desire to learn will increase dramatically.

There are characteristic of the best designs curricula: (Wiggins, 2005)
- Clear performance goals, based on a genuine and explicit challenge
- Hands-on approach throughout; far less front-loaded "teaching" than typical
- Focus on interesting and important ideas, questions, issues, problems
- Obvious real-world application, hence meaning for learners
- Powerful feedback system, with opportunities to learn from trial and error
- Personalized approach, with more than one way to do the major tasks, and room for adapting the process and goal to style, interest, need
- Clear models and modeling
- Time set aside for focused reflection
- Variety in methods, grouping, tasks
- Safe environment for taking risks
- Teacher role resembles that of a facilitator or coach
- More of an immersion experience than a typical classroom experience
- Big picture provided and clear throughout, with transparent back-and-forth flow between the parts and the whole

The challenge of curricula design is to think less about the "teachings" and more about the "learning" sought. As on the field, on stage or in the studio, building in feedback and the opportunity to use it is a vital aspect of a good learning plan. It

must engaging and effective. By engaging, a design that the (diverse) learners find truly thought provoking, fascinating, energizing. It pulls them all deeper into the subject and they have to engage by the nature of the demands, mystery, or challenge into which they are thrown. The goal is to affect them on many levels; it must not be dry academic content, but interesting and relevant work, intellectually compelling and meaningful. By effective, the learning design helps learners become more competent and productive at worthy work. They end up performing to high standards and surpass the usual expectations they develop greater skill and understanding, greater intellectual power and self-reflection, as they reach identified goals. In other words, the design pays off in substantive, value-added learning. (Wiggins, 2005)

PROJECT FINDING AND SERVICE LEARNING
FURNITURE DESIGN CURRICULA

Service Learning which department collaborated with LPPM, a department for research and service to community of Petra Christian University, to facilitate student learning in every department to find projects that related with every department's needs. Sometimes LPPM also work together with most non-profit agencies all over Indonesia to find projects to service and research.

The challenge for LPPM is to find projects that related with the parameters of service-learning project for every department in Petra Christian University. Petra, as one of the member of International Partnership for Service Learning (IPSL), also has service-learning team which facilitate every department to do the service-learning and find the projects. To ensuring that service learning projects meet the parameters of service learning, every person that engaged with the projects needs to consult with service-learning's team of Petra.

As design educators, the curricula design challenge is reaching a new phase in another sense. We are moving from thinking only about what we want to accomplish as the designer to thinking about who the learners-the end users of our design-are and what they will need, individually and collectively, to achieve the desired results and to perform well at the tasks. Like an IT designer, we have to do more than ensure all the codes and functions are going to work. We must be mindful of who the users are and design so that they are all maximally engaged and productive.

RESEARCH FOR ANALYSIS

By doing the active learning and active research, students gain a great deal of information about a piece of furniture by consciously analyzing it and writing down their observations. This is called "research through analysis". It is another way to refine a concept. The student break down the structure into components part, what its limitations are and how it functions within the whole then analyze the properties of the materials needed and analyze the overall function and finally how the user interacts with it. The student also interacts with the community and writes down all motions there really are in using typical furniture. Analysis of the user's movement often suggests reducing some waste and awkwardness. Much of the innovation here comes from ergonomic analysis which is the simplest study of user interaction with an object. (Stem, 1989)

Furniture design course of Interior Design Department, Art and Design Faculty, Petra Christian University, needs to fulfill those characteristics above into its curricula which is completed by taking a real projects study. As a major in interior design, we try to develop "teaching" and "learning" process by implementing Service Learning in furniture design course. From this development, students can experience a real project process of designing furniture until implementation and post evaluation by focused on reflection from community. This active learning process hopefully can give much positive contribution to development of Interior Design education.

Goals Syllabi

The objectives of furniture design course are to enable students to conduct research using primary and secondary information research; to develop skills in the surveying, recording and communicating design needs, details, constructions, materials, ergonomic, anthropometric and users habit and behavior according to professional standards; to be knowledgeable of cultural, historic, habit, behavior, technological, economic and trend factors that shaped the community based furniture design in children public study center in Surabaya, Indonesia; and to develop analytical skills to analyze, conceptualize, research through analysis to give the best design solution for the community.

To reach those goals above, we use an experiential learning cycle as the approach of design. Start with experience, student can share, get into the design process, generalize and apply the knowledge they get in the theory class in a real project children public study center.

One of the basic requirements of service-learning is the use of personal reflection. Personal reflection is a process occurring when learners actively reflect on what is learned throughout the service-learning experience (Furco, 1996). After they do and apply their furniture design solution, they have to write down reflection in their journal to reflect what they learn throughout the service and learning process. Challenge of reflection is sometimes student will give a few lines of random thoughts, not an honest assessment of the service learning experience. Reasoning for the random thoughts may be less comfortable feeling through a truthful critique or expressing their personal feelings.

Project Complexity and Description

Students will be responsible for completing three types of assignments : reading, discussion and teamwork. Students will be evaluated based on attendance, expressed knowledge of the required readings and discussion activity. The semester project will involve working individually and in teams ant the final submittal will be a comprehensive class project, cooperation and team work are essential.

Service-learning project is to create furniture (table, chair, cupboard, partition, book shelf, etc) that contributes to the knowledge of the community and used for children public study center in Surabaya, Indonesia. These products include programming, analysis, design concept, working drawing and recommendations for further efforts. The semester project assignment will be presented, reviewed by instructor and discussed in each group. The best design of all the groups will be responsible for an additional implementation design in the field. This implementation budgeting is gathered from the university, industries that have a working agreement

with interior design department, art and design faculty of Petra Christian University and community's savings. The other groups will be helping to fulfill all needs for the implementation and the post evaluation.

Examination will be only a mid-term exam on which the students are allowed to use any notes or readings. It reflects a more comprehensive application of the knowledge gained from theory class semester.

Timeline

This project is for one semester project (6 months). The student will meet once a week and responsible for punctual and regular class attendance. Maximal absences are 25 %.

Grades

Grades will be based on a combination of discussion, a mid-term examination, the semester project and the last exam (presentation and implementation to the community) according to the following percentages:

Discussion / participation / teamwork	20%
Mid-term exam	10%
Semester project	40%
Last exam / presentation / implementation	30%

IMPACT

It is important to identify specific objectives related to the project's success, as well as the educational and expectations for skill, knowledge and experience. The instructors must have knowledge abilities more in practice than theoretical, so they can bring the class to be able to evaluate and give practice and technical inputs to the learner's during the experiential learning process. While the learners, must have more spirit to find the knowledge and after the experiential learning process (active learning, active research), they can learn to teach design for the community, improving oral communication skills, and also developing a real design project's skills, developing awareness about social problems and learning design with different culture of community.

CONCLUSION

Active learning and action research is an invaluable experiential learning method. Service-Learning is very helpful for interior design major to allow and develop student skills in a real world furniture design project, conceptualization and implement active learning and action research. A curricula design plays important role to reaches objective of the class and developing study of art and design. The integration of service learning into the curriculum is a first step towards furniture design course, interior design department, art and design faculty, Petra Christian University. This process gives soul to the course content and made a positive contribution to the curriculum development.

Student gains benefits are not only volunteering to teach design, improving oral communication skills, but also developing a real design project's skills, developing awareness about social problems and learning design with different culture of community. The program is planned for which the student will earn credits

and result in design products in children public study center in Surabaya, Indonesia. This study demonstrates that students will gain more benefits by using service learning in furniture design project program.

REFERENCES

Cross, K. (1994[a]). *"The Coming of Age of Experiential Education*." *NSEE Quarterly* 19(4): 1, 22-23.

Cross, K. (1994[b]). *"The Coming of Age of Experiential Education: Part II." NSEE Quarterly* 19(4): 8-9, 29.

Cross, L.(1993). *"Educational Leadership: A Strategic Co-Operative Japanese Corporate Model." Leadership & Organization Development Journal* 14(3): 4-6.

Furco, A. (1996). *Service-learning: a balanced approach to experiential education. In Expanding Boundaries: Serving and Learning (Vol.1)*.New York, NY: The Corporation for National and Community Service.

Greenberg, J.D. (1995). *"Active Learning - Active Teaching: How Do You Get There From Here? NSEE Quarterly* 20(3): 4-5, 26- 27.

Moore, D. (1994). *"Changing Images of work and Work Organizations: Implications for Experiential Education - Part I." NSEE Quarterly* 20(1): 1, 24-25.

Moore, D. (1994). *"Changing Images of Work and Work Organizations: Implications for Experiential Education - Part II." NSEE Quarterly 20*(2): 6-7, 29-30.

Moore, D. (1990). *"Experiential Education as Critical Discourse." In Combining Service and Learning: A Resource Book for Community and Public Service* Volume 1 J. Kendall, and Associates. Raleigh, NC: National Society for Internships and Experiential Education.

Pritchard, Florence Fay and George I.Whitehead, III. (2004). *Serve and Learn.* London : Lawrence Erlbaum Associates, Publishers.

Stanton, T. (1990[a]). *"Liberal Arts, Experiential Learning and Public Service: Necessary Ingredients for Socially Responsible Undergraduate Education." In Combining Service and Learning: A Resource Book for Community and Public Service Volume 1. J. Kendall, and Associates.* Raleigh, NC: National Society for Internships and Experiential Education.

Stanton, T. (1990[b*]). "Service Learning: Groping toward a Definition." In Combining Service and Learning: A Resource Book for Community and Public Service* Volume 1 J. Kendall, and Associates. Raleigh, NC: National Society for Internships and Experiential Education.

Stanton, T. (1988). *Service Learning: An Annotated Bibliography: Linking Public Service with the Curriculum.* Raleigh, NC: National Society for Internships and Experiential Education.

Stem, Seth. (1989). *Designing Furniture, from Concept to Shop Drawing : a Practical Guide*. Newton, Connecticut : The Taunton Press.

Wiggins, Grant and Jay McTighe.(2005). *Understanding by Design*. New Jersey : Pearson Education.

http://www.servicelearning.org/, downloaded 19th March 2009.