Participatory Design Methodology as an Extension of Service-Learning Pedagogy in Architecture Design Studio

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Abstract

Participatory design methodology employed as an extension of service-learning pedagogy serves to reinforce one another naturally in an academic curriculum. Service-learning provide students the interconnectedness between their classroom learning, their personal voice and the community that they serve through reflection. The service learning pedagogy also provides the opportunity for students to utilise participatory design methodology for accessing community service. This methodology provides a framework for students to follow through from research to implementation of the service-learning project. This paper shall explore the utilisation of the participatory design methodology in architecture design studio service-learning projects in Pulau Ubin.

• Keywords: participatory design methodology, service-learning pedagogy, design studio pedagogy, community engagement, collaborative, iterative design process, co-creation
Project Ubin
About Pulau Ubin

- Pulau Ubin lies on the Straits of Johor off the north-eastern coast of mainland Singapore,
- The island is 10.2 sq km, stretching 7 km from east to west and 2 km from north to south.
- The island is famous for its rustic charm, natural environment, biodiversity and living heritage.
- 38 official residents but up to 130 people who live and work on Pulau Ubin
- Kampung-centred social network founded on kinship and, neighbourly relations and friendship
- This extend beyond the shores to include non-residents and regular visitors
Community-based Challenge

Issues Addressed: Living heritage preservation, gathering and interaction spaces, strengthening community

- Dwindling population due to residents moving out to the mainland for better opportunities and access to facilities
- Those who stayed on have strong connection with the island while tolerating with the inconveniences
- Students’ service-learning project aimed at preserving this living heritage and enhancing social interactions between residents and visitors to share their way of life and meaningful stories

Dwindling population due to residents moving out to the mainland for better opportunities and access to facilities

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Students’ service-learning project aimed at preserving this living heritage and enhancing social interactions between residents and visitors to share their way of life and meaningful stories
Community Partner

• National Parks Board is the central managing agency of Pulau Ubin, managing technical and land ownership aspect of the island.

• Expertise in environment conservation and greenery, management of drainage issues and maintenance of installations.

• Syazwan Majid, blogger/activist, wanubinblogspot.com, documents his journey of finding his late grandfather’s home in Pulau Ubin.

• 38 official residents and 130 others who live and work there on a daily basis

• Non-residents and regular visitors to Ubin
# Project Brief

<table>
<thead>
<tr>
<th>Stage 1 &amp; 2 (50%)</th>
<th>Service-Learning x Participatory Design</th>
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<tbody>
<tr>
<td>Create <strong>small interventions</strong> that could address the issues of <strong>strengthening the community</strong>, <strong>placemaking</strong> to encourage <strong>social interactions</strong>, or <strong>encourage local businesses to thrive</strong>. All while still maintaining or enhancing the living heritage and rustic charm of Pulau Ubin.</td>
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<tr>
<th>Stage 3 (50%)</th>
<th>Final Project</th>
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<td>Design a <strong>community centre</strong> to host a nexus of activities for residents, non-residents and visitors alike. Based on the understanding of the <strong>issues and opportunities</strong> in Stage 1 &amp; 2, students are empowered to devise strategies and new programming that will make a <strong>thriving village centre</strong> that responds to the dynamic needs of all.</td>
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Project-Specific Learning Objectives

L01: APPRECIATION OF ACADEMIC KNOWLEDGE/SKILLS
- Undertake research and analysis of a community’s needs and aspirations through participatory design methods
- Co-creating design solutions in response to users’ needs, contexts and purposes
- Communicating design ideas using visual and verbal presentation skills

L02: CRITICAL THINKING
- Develop creative and critical thinking skills and their application to real-life problem-solving and decision-making situations

L03: CIVIC COMPETENCIES
- Increased awareness of issues faced by the community, roles and responsibility of community partner and personal roles in the community

L04: PERSONAL VALUES
- Reinforcing and questioning personal values, beliefs and assumptions and acting on them
## Assessment (50%)

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
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| **ONLINE REFLECTION JOURNAL (15%)** | • Account of service experience with examples  
• Attitudes towards service-learning, community partner and community  
• Linking academic knowledge and skills to service experience |
| **DESIGN RESEARCH (15%)**         | • Findings and insights of community needs  
• Feedback by community partner and community |
| **DESIGN PROPOSAL (15%)**         | • Design proposal and implementation of prototype  
• Feedback by community partner and community |
| **PEER ASSESSMENT (5%)**          | •Qualitative – written feedback on peers’ contribution in the service-learning experience and group work  
• Quantitative – scoring based on the given criteria |
Scaffolding of Skills & Knowledge

DESIGN STUDIO 1

**ABSTRACT + USER + SITE**
- Concepts
- Ability to perform abstraction in relationship to concept
- Scale
- Anthropometry & ergonomics
- Space-planning

DESIGN STUDIO 2

**ABSTRACT + USER + SITE**
- Site and user analysis
- Physical/cultural
- Concept (user/site)
- Space-planning (concept driven form & space & programme)
- Technology integration
- Presentation Skills

DESIGN STUDIO 3

**ABSTRACT + USER + SITE**
- Urban context & conservation
- Professional practice
- Sustainable design features
- Application of knowledge learnt in the earlier modules

DESIGN STUDIO 4

**ABSTRACT + USER + SITE**
- Extension of Design Studio 2
- Application of all knowledge learnt thus far.
- Highlight of architecture student work.

Year 2.1 (8CU)

Year 2.2 (8CU)

Year 3.1 (10 CU)

Year 3.2 (10 CU)

3rd run of Service-Learning Design Studio
Teaching Pedagogy/Methodology

1. Studio-based LO: Design & develop a creative product through apprenticeship

2. Place-based LO: Rooted in the local environment/place to solve real-world issues

3. Service-learning LO: Using academic knowledge to connect with real-world community

4. Participatory Design Methodology: Tools and techniques used to access the community for purpose of co-creating with the community
What is participatory design?

- Refers to the activity of designers and people not trained in design working together in the design and development process.

- People being served by design no longer seen as users, seen as experts in understanding what is important to them.

Provide the structure to conduct the service-learning project.

A framework for organizing the tools and techniques of participatory design.
Tool #1 - making

“Physically making things helps people to explore, verbalise, remember and imagine. We use our hands to embody ideas in the form of physical artifacts.”

http://uxmag.com/articles/participatory-design-in-practice#1LXQC
tool #2 - enacting

“enacting refers to the use of body in the environment to express ideas about future experiences”

“creating and telling stories (real or imagined) can be visual, verbal or include role play, they help to prompt, remind, and brings things that are normally tacit out into the foreground”

<table>
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<tr>
<th>ACTING, ENACTING AND PLAYING</th>
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<tbody>
<tr>
<td>Game boards and game pieces and rules for playing</td>
</tr>
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<td>Props and black boxes</td>
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<td>3-D space models (full scale)</td>
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<td>Scenario-making in the space models or through sandplay</td>
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<tr>
<td>Participatory envisioning and enactment by setting users in future situations</td>
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<td>Improvisation</td>
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<td>Acting out, skits and play acting</td>
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<tr>
<td>Role playing with actors, pretenders, puppets, dolls etc.</td>
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<tr>
<td>Bodystorming and informative performance</td>
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http://designpublic.in/blogs/participatory-urban-design-an-interview-with-darshana-gothi-chauhan/
tools # 3 – telling

“Telling is a verbal description about future scenarios of use. We might tell a story about the future or describe a future artifact. But telling can be difficult for people who don’t have verbal access to their own tacit knowledge.”

<table>
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<th>TALKING, TELLING AND EXPLAINING</th>
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<tr>
<td><strong>Stories</strong> and <strong>storyboarding</strong> through writing, drawing, blogs, wikis, photos, video etc.</td>
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<tr>
<td><strong>Diaries</strong> and daily logs through writing, drawing, blogs, photos, video etc.</td>
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<tr>
<td><strong>Self observation</strong> through photos, video, blogs, writing, drawing etc.</td>
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<td><strong>Documentaries</strong> and <strong>movie-making</strong></td>
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<td><strong>Experience timelines</strong> or <strong>maps</strong></td>
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<td><strong>Paper spaces</strong> to collect, organize, categorize, reframe, chart and/or make decisions about ideas or concepts through group brainstorming and collective mindmapping.</td>
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<td><strong>Cards</strong> to organize, categorize and prioritize ideas. The cards may contain video snippets, incidents, signs, traces, moments, photos, domains, technologies, templates and what if provocations.</td>
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<td><strong>Voting dots</strong> to prioritize ideas.</td>
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Process

DISCOVER
- Building Relationships
- User Research
- Field Work
- Interviews and Insights
- Gathering
- Observations
- Design Workshops

DEFINE
- Data Analysis
- Site Analysis
- Interpret Findings
- Identify Themes
- Synthesis
- Frame Opportunities
- Set Design Challenge

DEVELOP
- Co-creation/Co-design
- Brainstorm Ideas
- Design Iterations
- Testing and Prototyping
- Design Refinements

DELIVER
- Making & Doing
- Community Build
- Authorities Approval
- Project Management
- Get Feedback
- Capture Learnings
- Define Success

SERVICE-LEARNING IN ARCHITECTURE DESIGN STUDIO

7th Asia-Pacific and Regional Conference on Service-Learning
Timeline

STAGE 1
- **Start of WEEK 1**
  - 15 April
- **End of WEEK 3**
  - 02 May
- **RESEARCH, ANALYZE, SYNTHESIZE**
- **DISCOVER**
  - Conduct of Service & Participatory Design Research
- **DEFINE**
  - Presentation of Participatory Design Research Findings to NParks

STAGE 2
- **End of WEEK 4**
  - 09 May
- **DEVELOP**
  - Co-creation of Design Solutions with Community
- **End of WEEK 6**
  - 23 May
- **DELIVER**
  - Presentation of Design Solutions to NParks
  - Testing and Fabrication of Prototype
- **End of WEEK 11**
  - 29 Jun

SERVICE-LEARNING IN ARCHITECTURE DESIGN STUDIO

7th Asia-Pacific and Regional Conference on Service-Learning
Building Relationships

- Multiple visits, kampung clean-up (service), showed sincerity and build trust.

- Shared stories of their pasts, engaged in meaningful conversations, not centred on achieving project goals only but relate to everyday lives or things that we take for granted.

- Reciprocity – showered with hospitality, refreshments, genuine care and concern.
Students conducted interviews and deeper conversations with the residents, ex-residents and visitors to Ubin.

Conducted creative engagement activities to understand their needs, dreams, visions, and aspirations.
In the early stage of the research phase, findings are downloaded, and insights are interpreted.

To unravel the needs, dreams, visions, experiences and aspirations.
Discover Themes

• Finding common themes that emerged, may not reveal specific design solutions.

• But provide opportunity to understand ground sentiments, share stories as well as engaged in meaningful conversations.
Frame Opportunities

• From the identified themes, students create insight statements, succinct sentences that will point the way forward to the next stage.
• Making insights actionable by converting them into how might we statements
• Create multiple how might we statements which support the main design challenge and prioritizing them
After this, students set their design challenge for their next stage, co-creating with the residents and visitors.

Provide the opportunity for residents and visitors to brainstorm ideas to meet the design challenge.
Co-creation

• Creating an ideal scene using picture collage method
• Residents and visitors select from a plethora of old photographs as well as clip arts to depict their vision of an interaction space on a chosen location
Students devised a card game to enact the type of environment that they would want to shape.

While playing the card games, players can buy and select elements they want to be placed in their ‘Dream Garden’.
Co-creation

Students prepared the menu (elements) of a buffet (desired outcome)

Residents pick and choose from the serving trays (starters, main course and dessert) to their plate

They provide reasons for their selection (valuable insights)
Students prepared a board game to find out what type of changes they want to see in the design of the taxi stand.

They provide reasons for their selections (valuable insights)

A light-hearted and fun way to engage residents whom might be jaded by constant interviews.
Testing & Prototype

- Making a scaled model to illustrate the design intention of the chosen design challenge.
Build & Implement

• For the implementation stage, the design proposal will be submitted for authorities approval.

• Issues on safety, maintenance and ownership will need to be ironed out at this stage.

• Students will be doing the building together with the residents to continue the process of co-creation.
Students also came up with the project planning to include the project schedule, manpower allocation, budget, logistical arrangement as well as resources, tools and equipment for the build part.
# Participatory Design as an extension of Service-Learning

## Learning Outcomes of S-L

- **Reciprocity** (mutual benefit)
- **Academic Enhancement**
  - Site and User analysis, design development and presentation
- **Personal Growth**
  - Empathy
- **Civic Engagement**
  - understand the social roles of architects - involved in real world issues that affect a certain underserved communities.

## Objectives Of PD

- **Participatory** (Partners in design & development)
- **PD Tools and Techniques**
  - Co-create design solutions with the community
- **Enhanced Personal Growth**
  - Collaborative, Communication and Cultural Sensitivity
- **Enhanced Civic Engagement**
  - Not just looking at solution but also develop innovative and creative ways to engage the community.
Benefits to Community

Traditional Service-Learning Model

Community as recipients of the service without giving much inputs in the process

Community is acknowledged and empathised for their given situation

Community and their context as an experimentation and lab to conduct an academic exercise

Build relationships with the community through interactions and meaningful conversations

Enhanced Service-Learning Model with PD

Community as actors in the co-design process in search of sustainable solutions for their environment

Community as experts in navigating their everyday lives

Community engaged in a meaningful way as creative partners

Community provide multiple perspectives and values to the table

Build and reinforce community as an outcome
Challenges Faced

“The one incident that changed my mindset was when we were coming up with our co-design card game... before that, I felt that the project was a lost cause... I found myself coming up with the design of the cards and ways to hone our potential together... overall, I learnt to make the best out of a bad situation and that’s it’s not over until it’s over.” - Celeste

“There was a taxi uncle... said jokingly as he passed that he knew we were here to disturb the peace on the island... it made me wonder if we were ever wanted or were a mere annoyance... it has been a tough week for my group as our ideas were constantly turned down by the residents... it changed my perspective of the island and how open they are to change. But this doesn’t mean it would stop us from trying.” - Anna

“We went back to ubin for feedback sessions... I’ve never seen my teammates as tired they’ve been than today... moral and physical wise... one of us was even having high fever. Everyone was encouraging each other and had one another’s back... it takes a lot of dedication and commitment to work together as a team for a project... it makes me respect people who do this for a living highly. The amount of effort they have to put in everyday makes me appreciative every detail put it.” - Navik
“Through this incident, it has taught me not to give up but to persist on as the taxi drivers finally relented after much persuasion. It has also taught me to constantly think of different ways to convince the taxi drivers.” - Megan

“I miss seeing my relatives and friends...For me it was something emotional, knowing we could do so much to help him...however the challenge of this is that cultural history cannot be told by words alone, you have to experience it.” - Zaw

“I learnt that designing is not only about creating useful space. It includes understanding the user, how they use the space and the need to listen to others when designing.” - Kaiwen
Learning Outcomes through Reflections

“I realized there are still youngsters who are genuine to help out the community there. Apart from the residents was also nice to us by preparing us lunch boxes...it make me feel grateful to experience an opportunity such as this.” – Diyanti

“It makes me reflect on how I behave with my neighbours where we barely hold any social interactions despite living closely apart. It encourages me to be more daring for any social advances in this contemporary context lest we lose the kampung spirit.” – Minru

“I felt bad about it...I felt that sometimes in life I tend to forget to be appreciative towards the people that treated me well. Even residents that did not interact with use long were able to show their appreciation for the little effort we put in. Why it is hard for us to be more appreciative for the things our family and friends did for us daily.” – Kaiwen
Learning Outcomes through Reflections

“I was warned that the residents of Ubin were something along the lines of unfriendly and sometimes cold. However, I was proven wrong when I drank her lemon barley and tasted her pastries. It also made me realise that despite not having much, they were generous. This exchange has helped my personal growth. Do unto others as you would have them do unto you.” - Celeste

“I hesitated to go...to spend 1 hour traveling for an uncertain experience...I still gave it a chance and went anyway...I was tasked to paint the house...I slowly gained the feeling of content and satisfaction...I started to see that besides benefitting the residents it also benefits my mental and emotional well being...this was like a stress reliever. It was a time for me not to worry about anything and paint. End of the day, I had felt a glow of happiness from this experience.” - Zaw

“When my group went back...I experience a heartwarming experience...I stayed to take care of my friends’ bags...interacted with the tourists when they came to the shop. I was helping to mend the shop as the owner was doing the chores. The owner even treat me to a drink after I helped her. Through this experience, I learned to be more outspoken and it also changed the way how I see the tourist and owners as they are very friendly and welcoming.” - Bryan
Challenges Faced

“When we were over at Ubin to do the co-design at Kampung Durian, the residents were busy painting their house…but they still took out some time to be part of the co-design process. They were participative in giving us suggestions and feedback about how they want the design to be like and location of the design.” - Jilane

“I felt touched through the conversation with the shop assistant…she actually traveled all the way from Woodlands to help her mother-in-law with the business…ah ma didn’t want to move to mainland to live with them…I felt touched not only because of her filial piety but also the understanding and respect she gave Ah Ma to live in Ubin…I learnt more about understanding and respect. Providing relevant design solution first is to understand the real needs and concerns of the users.” - WeiQin

“During the first time I went to Pulau Ubin, I was so affable and I felt happy when interviewing Nenek Daria and Nenek Som because the way they speak reminded me the people I had met in Malaysia…I felt thankful that they were patient and willing to wait for me in organizing my language… Nenek Daria said that she can only stay at home everyday as she is old…It bothered me as she cannot do anything and there is nobody to accompany her…I’m so appreciative…I will spend more time to accompany my parents when they are old.” - Wenwen
Deeper engagement with the community using Participatory Design tools. Students crafted interesting and creative ways of engagement beyond expectations.

In Singapore, there are still places and community that will make great learning opportunities for students, make them see another side of work that architects and designers can do; community design and social architecture, without the need to go overseas.

A little hardship and inconvenience will pave the way for greater learning experiences. Example: treatment given to them by some members of the community. Having to travel long distances, being mentally and physically drained out from walking, engagements and facing rejections along the way.

The challenge of sustained engagement of building and implementing the proposals as it is now will be outside of their curriculum time. Finding the time and self motivation to engage the students. As well as authorities approval.

This project is as real as it gets! Real issues unraveling as the project kicks in. Provide real-world problems and clients and build real working solutions to address the needs. Scaffolding of knowledge and skills.

While service-learning places importance on the learning of our students through reflection, participatory design gives the added dimension of elevating the community as an important partner in the entire journey.
References


Alexis Gregory & April Heiselt (2012). REFLECTING ON SERVICE-LEARNING IN ARCHITECTURE: Increasing the Academic Relevance of Public Interest Design Projects
THANK YOU!
THE JOURNEY
HAD ONLY
JUST BEGUN!