Revisiting Bronfenbrenner Bioecological Model through Classroom Setting at the Preschool Located within the Double Storey Residential Building
From a Place called Home...
Research Problem: Converting A Home to A School

Home
- working parents
- home environment
- Siblings and extended families
- Quality education
- Child care provider

School
- Preschool environment
- Classroom setting
- Teachers and staffs
- Children
- Interaction
- Activities

Gap:
What setting is best for children when there is no much space? How will it affect the child? Will the child like it?

Research Aim: How to make a child feel belonged to the school
Research Objectives

- RO1: To identify the important elements of interaction among children in developing a sense of acceptance to the preschool,
- RO2: To identify the gaps between teachers and children when making classroom setting, and
- RO3: To propose possible classroom settings suitable for preschools located in the double storey residential building.
Research Questions

- What are the elements at the preschool that would make children feel comfortable and accepted?

- What are the children’s and teachers perceptions, interests and concerns when re-arranging the learning spaces in the classroom?

- What are the suitable settings in a preschool that could offer children a conducive learning environment with a sense of belongingness to the learning space?
Revisiting Bronfenbrenner Bioecological Model

...through rearranging classroom settings by applying Bronfenbrenner Formula of Development in the context of preschool environment.

\[ D_t = f(t-p)(PE)(t-p) \]

Where:
- Own classroom
- Other classrooms
- Common area

With:
- Friends from own classroom
- Friends from other classroom
- Teachers

Positive Interaction

Time

Over a period of time
Theoretical Framework

\[ D_t = f_{(t-p)}(PE_{(t-p)}) \]
Methodology: Sequential Triangulation

Total classroom: 3
Number of children (N): 42
<table>
<thead>
<tr>
<th>Activities</th>
<th>Method</th>
<th>Parameter</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autophotography</td>
<td>Photography</td>
<td>Indoor Places</td>
<td>RO1</td>
</tr>
<tr>
<td></td>
<td>Voice Recorder</td>
<td>People</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interview</td>
<td>Decoration</td>
<td></td>
</tr>
<tr>
<td>Drawing</td>
<td>Discussion with children and teacher</td>
<td>Children preference</td>
<td></td>
</tr>
<tr>
<td>Design Board</td>
<td>Discussion with children and teacher</td>
<td>Children preference</td>
<td>RO2 and RO3</td>
</tr>
<tr>
<td></td>
<td>Individual children’s drawing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group Discussion</td>
<td>Discussion with children and teacher</td>
<td>Teacher concerns and preferences</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Construction of classroom setting using Floor Planner</td>
<td>Children concerns and preferences</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Void spaces</td>
<td></td>
</tr>
<tr>
<td>Evaluation</td>
<td>Observation</td>
<td>Children ingress and egress</td>
<td></td>
</tr>
</tbody>
</table>
Autophotography (PE) : To answer RO1

Elements derived from Autophotography:
- Friends
- Class teacher
- Own classroom
- Other places
- Other staffs

Elements derived from literature understandings:
- Preschool programs
- Policies requirement & Guideline
- Government
- Other organization

Bronfenbrenner Bioecological Model in a Preschool Context
Bronfenbrenner Bioecological Model: Interaction within the meso-system

*other places include other classroom, play area and canopy*
Children’s Participation (f): To Answer RO2 & RO3

Pre-inquiry

- Location of Doors and Window
- Classroom Setting
- Discussion Review

Post-inquiry

Planning
- Storytelling and discussion
- Children’s drawing

Information Retrieval
- Storytelling and discussion
- Discussion with SME
- Design Board

Sharing
- Storytelling and discussion
- Sharing design board ideas

Creating
- Storytelling and discussion
- Group creation on new classroom arrangement

Evaluation
- Testing the new arrangement
- Discussion with teacher and children on the new arrangement
Vygotsky Theory of Scaffolding

Child’s actual development

Zone of Proximal Development

Child’s potential development through researcher and SME assistance

Child’s potential development through teacher and peer assistance
## Data Analysis: Content Categorization

### Method

<table>
<thead>
<tr>
<th>Internal Categories</th>
<th>External Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Method</strong></td>
<td><strong>Priorities</strong></td>
</tr>
<tr>
<td><strong>Auto-photography</strong></td>
<td></td>
</tr>
<tr>
<td>Photographs of indoor places, people and decorations</td>
<td>Friends</td>
</tr>
<tr>
<td>Interviews</td>
<td>Teacher</td>
</tr>
<tr>
<td>Other places</td>
<td>Own classroom</td>
</tr>
<tr>
<td>Other staffs</td>
<td>Other places</td>
</tr>
<tr>
<td>Macro- and meso-system structure</td>
<td>Other staffs</td>
</tr>
<tr>
<td>Micro- and meso-system structure</td>
<td>Exosystem structure</td>
</tr>
<tr>
<td><strong>Drawing</strong></td>
<td><strong>Attributes</strong></td>
</tr>
<tr>
<td>Joined table arrangement</td>
<td><strong>Category</strong></td>
</tr>
<tr>
<td>Detached table arrangement</td>
<td><strong>Domain</strong></td>
</tr>
<tr>
<td><strong>Design board</strong></td>
<td></td>
</tr>
<tr>
<td>Joined table arrangement</td>
<td>Classroom setting</td>
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<tr>
<td>Detached table arrangement</td>
<td></td>
</tr>
<tr>
<td><strong>Group discussion</strong></td>
<td></td>
</tr>
<tr>
<td>Teacher concerns and preferences</td>
<td>Classroom setting</td>
</tr>
<tr>
<td>Children concerns and preferences</td>
<td></td>
</tr>
<tr>
<td>Occupied spaces</td>
<td></td>
</tr>
<tr>
<td><strong>Observation</strong></td>
<td></td>
</tr>
<tr>
<td>Towards seating position</td>
<td></td>
</tr>
<tr>
<td>From seating position</td>
<td></td>
</tr>
<tr>
<td>Children ingress and egress</td>
<td>Classroom circulation</td>
</tr>
<tr>
<td>Classroom circulation</td>
<td></td>
</tr>
</tbody>
</table>

Elements of Bronfenbrenner bioecological model
### Research Objectives

<table>
<thead>
<tr>
<th>Preschool Setting</th>
<th>Findings</th>
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<tbody>
<tr>
<td><strong>RO1</strong></td>
<td>Elements of interaction in the microsystem to be applied into the Bronfenbrenner bioecological model in a preschool context located at the double storey residential building:</td>
</tr>
<tr>
<td></td>
<td>• The connection of the elements in the mesosystem</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classroom Setting</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RO2</strong></td>
<td>Teachers concerns and preferences:</td>
</tr>
<tr>
<td></td>
<td>• Children Safety</td>
</tr>
<tr>
<td></td>
<td>• Class Circulation</td>
</tr>
<tr>
<td></td>
<td>Children’s concerns and preferences:</td>
</tr>
<tr>
<td></td>
<td>• Connected table setting</td>
</tr>
<tr>
<td></td>
<td>• Seating selection</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classroom setting</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RO3</strong></td>
<td>• Occupied spaces (table area-private spaces)</td>
</tr>
<tr>
<td></td>
<td>• Void spaces (common area – carpet area)</td>
</tr>
</tbody>
</table>
Classroom Setting

Master Bedroom Classroom

Bedroom 1 Classroom

Living room Classroom
Adele’s Behaviour Over a Period of Time (t-p)

- Insecure
- Head down
- No eye contact

- Looked at teachers
- Kept quiet
- No expressions

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- Identify Naily’s lunchbox
- Talking to Naily
- Walking with Naily and Leia
- Smiling
- Say goodbye to Naily and Leia
- Express excitement to return to school

Bridging between architecture and education

Adele’s turning point

1st day of school
3 months
6 months
1 1/2 years

Time (t-p)
Maslow Hierarchy of Needs (D): To meet Research Aim

The need of BELONGING – LOVE
Friends . Peer . Teachers . Staffs
A Place called School

A school...
Is a place to learn
   a place to play
   a place to dine
   a place to celebrate birthdays,

A school...
Is a place to make friends
   a place to express
   a place to laugh
   a place to cry
   a place where it’s hard to say goodbye,

A school...
Is a place where we learn about love
   a place where we love
   a place where we are being loved,

Over a period of time...

A school...
Is a place where we should cherish
   as it is a place where we share stories
   as it is a place where we create memories.
Naily, Adele and Leia...
