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Fashion Show as a Medium to Explore Architectural Personal Space through Body Movement

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Abstract

This paper presents the results of an experimental and exploratory learning project conducted in the second project (Project II) of the first-year Architectural Design Studio at the Architecture Study Program, Universitas Syiah Kuala. The project addresses students' limited understanding of the relationship between body movement and spatial experience in shaping personal space. To foster a more critical, creative, and engaged learning process, educators developed a four-stage exercise over four weeks, with six hours of weekly sessions. The project explores how simple body movements can generate spatial awareness through two methods: fashion show performances and personal space constructions that move with the body. The findings suggest that integrating bodily movement as a design approach enables students to grasp the dynamic relationship between the human body, spatial boundaries, and architectural form. This paper serves as a guideline for educators to develop similar experimental exercises, helping students understand and construct personal space through performative and embodied experiences.

1. INTRODUCTION

This paper presents the outcomes of experimental learning and exploration from the project of the Architectural Design I in the first year of the Architecture Study Program. This studio-based course, aims to introduce students to the design of single architectural spaces. Students engage in basic projects that construct spaces derived from simple activity sequences designed for a single user.

The overarching theme of Architectural Design I is personal space in architecture. The course is structured into four minor projects: pre-project, Project I, Project II, and Project III, conducted over one semester (16 weeks). This paper specifically focuses on Project II, titled "Experiment with Space", a four-week studio workshop totaling 24 hours. In this project, students are guided to understand how architectural space is formed from the outermost parts of their bodies (enclosure), influenced by single physical movements or sequences of movements. Students act simultaneously as both explorers and observers during the process.

The experiment not only investigates visible physical movements but also explores the psychological experiences that accompany these movements, fostering a sense of comfort and security. Through simple bodily motions, students gain insights into spatial experiences and the formation of spatial boundaries.

However, several challenges emerge during the class. As part of the first-year curriculum, students are prohibited from using computers to create digital models. Consequently, many students — who lack proficiency in freehand sketching and three-dimensional visualization — struggle with the wicked design process [1]. Although platforms like Pinterest [2] provide visual references that inspire the design process, first-year students often find it difficult to translate these ideas into tangible architectural forms. Therefore, the model-making process becomes the final stage in defining spatial boundaries.

This paper aims to provide guidelines for educators in architectural studios to develop methods that introduce architectural space in a critical and creative manner. By the end of the first year, students are expected to demonstrate the ability to plan and design personal spaces through a better understanding of the relationship between body movement and spatial boundaries.

2. LITERATURE REVIEW

Space is constructed by the activities conducted within it. These activities delineate boundaries, making the boundaries of the space perceptible. By studying human movement, we can understand how space is formed through motion, constructing its habitat, much like a bird's nest is constructed by the movements of the bird (Bachelard, 2005, as cited in [3]).

In the previous project, Project I, students were introduced to and explored the field of anthropometry. Anthropometry, the study of human body measurements and proportions, serves as a primary topic in the first-year architectural design studio because understanding body dimensions is fundamental to space design. Although Le

Corbusier's Modulor is frequently referenced, it should not be solely relied upon, as it does not accurately represent actual human body measurements [4]. Therefore, conducting measurement experiments to understand each student's unique body dimensions and proportions is crucial. Students exhibit unique body measurements influenced by gender. Furthermore, students gain a deeper understanding of material, materiality, and tectonics [5] when constructing personal spaces derived from their own movements.

The initial boundary of architectural space that emerges is the 'second skin' following human skin. To assert that personal space is constructed by activities and/or a single user, these spatial boundaries are constructed through the process of model making. Through model making, students can easily experience architectural space via models [6] and apply theoretical knowledge to practice, starting with gestures and resulting in numerous possibilities and meanings derived from the relationship between designing and shaping (Flusser, 1991, in [7]). Although model making requires more time, it can assist students in generating ideas during the elevation drawing stage and, when aided by sketches, can expedite the design generation process [1]. Students create models to form reality by transforming 2D representations into 3D [7]. They will continue to expand their understanding of these single spatial boundaries or generate designs in Project III.

In this second project, students construct a 1:1 scale model, which corresponds to the actual dimensions based on their anthropometric measurements. Applying a 1:1 model can enhance students' creativity, serving as both a catalyst and a motivator, in contrast to merely creating scaled models [8], also referred to as prototypes [6]. The generated model can be classified as an exploratory model, in which students investigate specific components of the design present at the initial stages of the design process [6]. These components are boundary elements constructed from the single movements that students create or initially plan.

The construction of personal space is the result of developments from a previous exploration, although this exploration was still focused and limited to horizontal boundaries [9]. Specifically, it involves measuring the distance at eight orientation points from which a stranger or object approaches to assess personal space (Fig. 1). The influence of cross-cultural contexts among participants may result in varying dimensions of personal distance [10], shaping personal space.

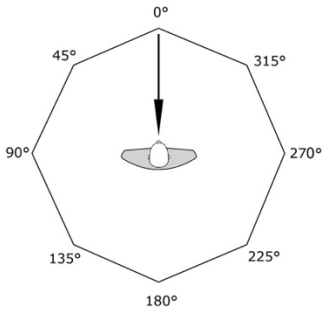

Figure 1. The Orientation in the Personal Space Experiment
(Source: Hecht, et al., 2018)

In this experiment, the students did not use clay, traditionally recognized as the primary material for model-making, but instead utilized paperboard as the main material, along with other materials that are easy to adhere and cut. Paperboard (Fig. 2) is highly recommended for first-year architecture students due to its economic benefits, material availability, and ease of use [6]. Moreover, it serves as an abstraction of original surfaces, classified as "classic" materials [11].

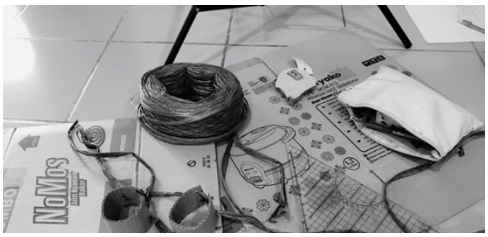

Figure 2 Tools and Materials
(Source: Class Documentation)

This experiment on personal space aims to examine the body buffer zone, which is formed as an internal projection of the space immediately surrounding an individual [12][13] and serves as protection against external threats [14]. This zone can take both circular [9] and non-circular [13] forms. The shape and size of this buffer zone are influenced by immediate social interactions, current ego and motivational states, psychological factors, and cultural background [12].

3. METHOD

The participants in this experiment were first-year students from the Archictural Design Studio class in the Architecture Department of Universitas Syah Kuala, consisting of 28 students who had already acquired knowledge regarding body mechanics and dimensions necessary for movement (Project I). The students were instructed to prepare tools and materials to facilitate the process of planning and designing personal space. The primary material utilized was recycled packaging paperboard. For the motion recording process, the students provided a camera and tripod.

Context Students engaged in the entire process of movement phases and the construction of personal space boundaries in the architectural design studio for six hours each week. Although this task was an individual assignment, students were guided by a facilitator assigned to each student group.

Process The experimental and exploratory processes in Project II were conducted over four stages across four weeks. The activity timeline for Project II is detailed in Table 1. In the first stage, students explored the desired movements. They were required to conceptualize these movements, plan how to record them, and transform them into architectural diagrams. In the second stage, students performed the movements and recorded them in photographs and videos based on their initial concepts. These movements could be performed on a floor with a modular pattern, such as tiles. The recorded photo and video sequences of these movements were then transformed into a catalog. This catalog included a list of proportions and spatial requirements for the movements, as well as the duration of each sequential movement. In the third stage, students constructed the required space based on the movement catalog using approved materials. Finally, students demonstrated their personal space, which was integrated and moved with the body, through a fashion show.

4. RESULT AND DISCUSSION

4. 1 BODY MOVEMENT CATALOGUE

The following outlines the process by which students perform and record movements after selecting their desired activities. This process constitutes the second phase of the Project II design process. The recorded movements are traced and compiled into a movement

catalogue. This catalogue includes abstractions of the movements, proportions, spatial dimensions required, and the duration of each movement. Students are free to represent these ideas in diagrams (Fig. 3-7).

Students are allowed to choose and determine the single movements they wish to explore, ranging from Taekwondo movements (Fig. 3), contemporary dance movements (Fig. 4), Silat movements (Fig. 5), floating boxing movements (Fig. 6), to dance movements (Fig. 7). The emphasis of these motions is placed on single and sequential movements.

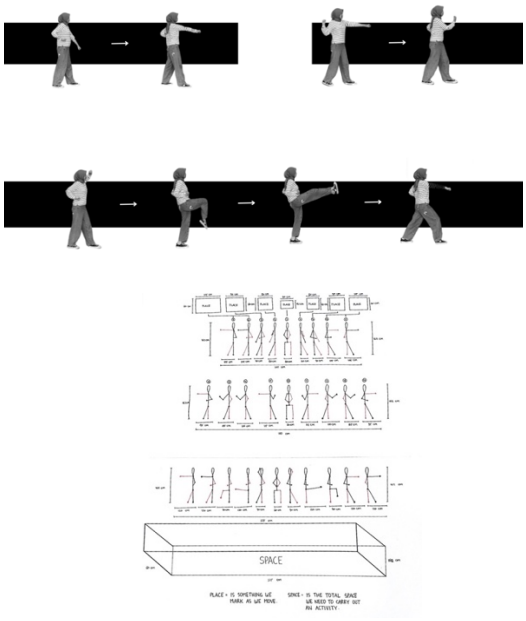

Figure 3. (Left) Body Movement; (Right) The Catalogue of Body Movement
(Source: Class Documentation)

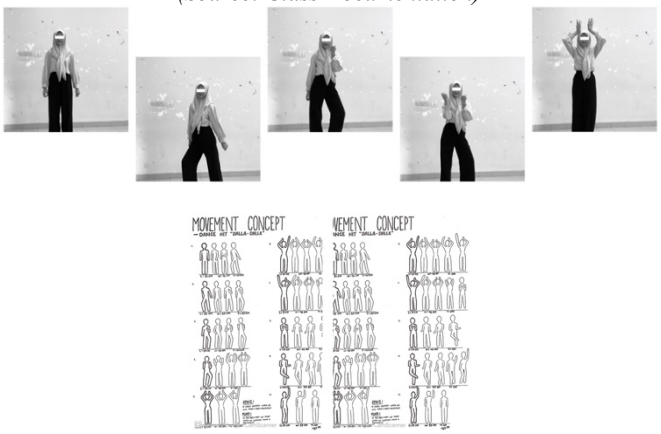

Figure 4. (Left) Body Movement; (Right) The Catalogue of Body Movement
(Source: Class Documentation)

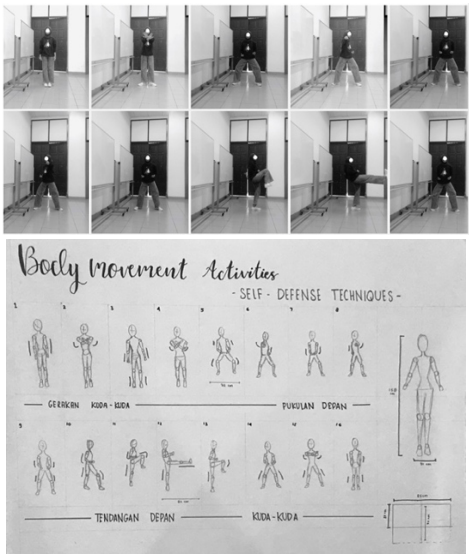

Figure 5. (Left) Body Movement; (Right) The Catalogue of Body Movement
(Source: Class Documentation)

Figure 6. Body Movement
(Source: Class Documentation)

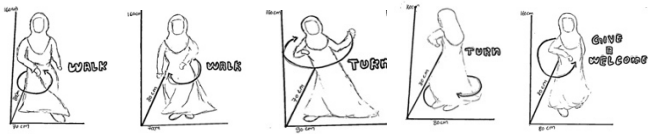

Figure 7. The Catalogue of Body Movement
(Source: Class Documentation)

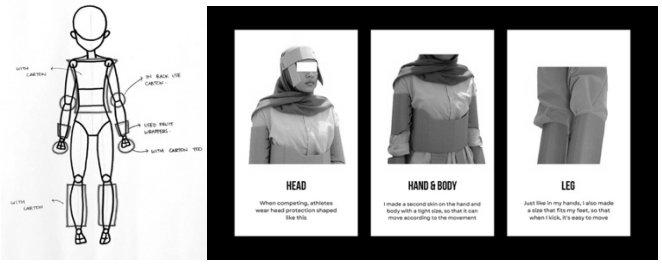

Figure 8. (Left) Boundaries Concept Diagram; (Right) Model of Boundaries
(Source: Class Documentation)

4. 2 PERSONAL SPACE CONSTRUCTION

The next stage involves constructing the spatial boundaries necessary for movement. These boundaries form the immediate space required to delineate the activities being performed. Since the required personal space is attached and moves with the body, students should

consider the tectonics and mechanisms that enable the body to move as planned effortlessly. In this process, students are also required to analyze the spatial boundaries created (Fig. 8). Some students added voids between the body and the spatial boundaries (Fig. 9, 11, 12), while others attached the boundaries directly to the body (Fig. 10).

Figure 9. Personal Space Construction
(Source: Class Documentation)

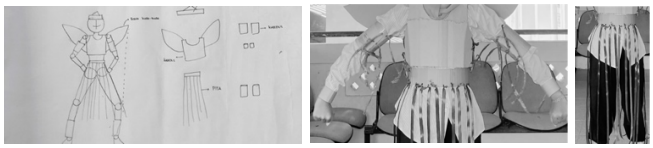

Figure 10. (Left) Boundaries Concept Diagram (Middle & Right) Model of Boundaries
(Source: Class Documentation)

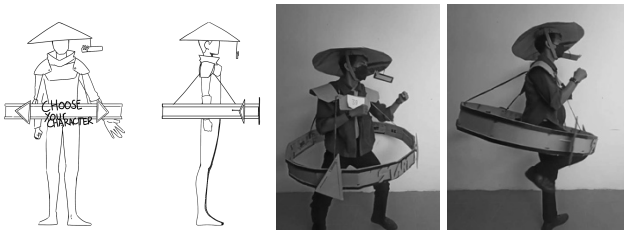

Figure 11. (Left) Boundaries Concept Diagram (Middle & Right) Model of Boundaries
(Source: Class Documentation)

Figure 12. (Left) Boundaries Concept Diagram (Middle) Personal Space Construction, (Right) Model of Boundaries
(Source: Class Documentation)

4. 3 FASHION SHOW

The final stage involves the display of the work by attaching it to the body, creating a space that moves along with the body. Students are encouraged to confidently showcase their spatial creations through a fashion show. Clear assessment criteria are established to ensure a fair and comprehensive evaluation of the students' work.

Creativity and originality are key criteria, accounting for 30% of the assessment. This aspect evaluates the uniqueness and innovation of the design, examining how effectively students translate abstract concepts of space into tangible forms. The use of materials, proportions, and movements to demonstrate imaginative thinking is also considered.

Another vital criterion is spatial awareness and functionality, weighted at 25%. This involves measuring the extent to which the design reflects a coherent understanding of spatial relationships and human proportions. It also evaluates how well the structure interacts with the body's movements while maintaining its intended purpose or aesthetic.

The aesthetic quality and attention to detail contribute 20% to the overall evaluation. This criterion assesses the design's overall visual appeal, including aspects such as form, colour, and ornamentation. It also considers the project's craftsmanship, precision, and finishing, ensuring the work is visually striking and well-executed.

Presentation and confidence make up 15% of the assessment. This evaluates the students' ability to confidently present their creations during the fashion show, as well as the effectiveness of their communication in conveying their design concept and engaging with the audience.

Finally, reflection and conceptual depth, accounting for 10%, assess the students' ability to articulate the ideas and inspiration behind their creation. This criterion evaluates their understanding of the relationship between the body, movement, and space, and how these elements are integrated into the design. By implementing these comprehensive criteria, instructors can provide meaningful feedback and ensure the learning objectives are effectively met.

Figure 12. The Practice of the Fashion Show
(Source: Class Documentation)

5. CONCLUSION

Through fashion shows or the construction of personal spaces that move with the body, students can critically, creatively, and enthusiastically understand architectural spaces directly shaped by the proportions and movements of the body. This teaching method can be developed as an alternative approach to impart basic spatial knowledge to first-year architecture students. Although this experiment is not directly aimed at producing forms influenced by current ego and drive states or cultural history [12], students can

express their identity through cultural history and their psychological status, reflecting beauty and comfort through form, colour, and ornamentation.

However, substantial supporting evidence is necessary to strengthen these claims. Quantitative and qualitative analysis of student outcomes, including assessments of their understanding, engagement, and skill development, would provide a more concrete foundation for these conclusions. Additionally, a robust discussion of the method's limitations is needed, such as challenges in resource allocation, scalability, and the potential subjectivity in evaluating creativity.

Comparative analysis with other teaching methods, such as traditional studio-based learning or virtual spatial modelling, could further contextualise the effectiveness and applicability of this approach. Highlighting areas where this method excels or falls short in comparison would offer valuable insights for educators seeking to adopt or adapt similar techniques. Integrating these aspects would enhance the academic rigour and practical relevance of this innovative pedagogical strategy.

Future research directions could explore the integration of technology, such as augmented reality (AR) or virtual reality (VR), to simulate personal space construction in more immersive and accessible ways. Investigating the application of this method in diverse cultural contexts or disciplines beyond architecture could also broaden its relevance and impact. Potential adaptations include tailoring the approach to accommodate students with varying artistic and technical proficiency levels or designing scalable models suitable for larger class sizes.

Long-term impact assessments are critical to understanding the sustained benefits of this method. Longitudinal studies could examine whether the skills and perspectives gained through this approach translate into improved design thinking and problem-solving abilities in professional practice. Furthermore, assessing its influence on students' creativity, collaboration, and confidence over time would provide a more comprehensive evaluation of its educational value. By addressing these aspects, this pedagogical approach can be further refined and positioned as a transformative tool in architectural education.

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