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Large-Form Ceramic Sculpture Creation using the Hand-building Method

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Abstract
Ceramic sculpture in Malaysia is emerging, yet the high equipment cost limits full-time artists. This study determines how beginner ceramic students can use the traditional hand-building method, which includes pinching, coiling, and slab building, to create large-form sculptures. Through studio-based and observational research, the study found that students, despite their inexperience, successfully produced large-scale works. The results highlight the effectiveness of hand-building techniques in overcoming equipment barriers and underscore their potential for enhancing students' skills and expanding their creative possibilities in academic settings.

Keywords: Ceramic; Sculpture; Hand-building; Studio-Based Research

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1.0 Introduction

Nowadays, more Malaysians have begun to understand the public sculptural forms compared to before the 1970s, as they comprehend artworks related to religious matters. Malaysia is an Islamic country, and Islam forbids any artwork that produces and imitates human and animal figurines without any form of development (Zulkifli & Rahman, 2023). To avoid the issues of morality and religion, many Malaysian Muslim artists produce public sculptures based on developing their ideas and conceptual forms, which follow Islamic rules.

In Malaysia, most public sculptures are made of steel, concrete, bronze, and hardwood. The use of clay for sculpture is yet unknown; perhaps the complexity of processes and materials has made large-scale ceramic forms unpopular. Nowadays, many Malaysian potters or ceramic artists have established small—and medium-sized ceramic sculptures. These artworks are usually exhibited in a gallery, where they are displayed on plinths or pedestals.

The lack of established public ceramic sculptures in Malaysia has encouraged this writing to discuss studio-based research regarding the possibility of using clay to produce public sculptures through hand-building. The studio-based research is a fundamental study that explores the creation of a body of work and the knowledge that determines and makes sense of the novelty of the artwork, process, and

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conceptual approach. Any artwork creation requires research before establishing it (Smith & Dean, 2020). The process demands an analytical study of the progression of ideas, an understanding of issues, and fabrication methods.

The writing was established based on the matter through the observational study of first-semester ceramic students in the Ceramic Department at Universiti Teknologi MARA (UiTM) Perak Branch, Seri Iskandar Campus. The students were learning the ceramic discipline for the first time using the hand-building method this semester. The study also assessed the students' capabilities to fabricate a large form of ceramic public sculpture using their preliminary understanding of the method. Typically, the first-semester students use the same method and are encouraged to produce the project works in small-form sizes.

The hand-building method is a fundamental technique that encompasses three processes: pinching, coiling, and slab-building, as they are introduced to the respondents. These methods equip the respondents with better knowledge and understanding of the ceramic process, materials, and form. Cardew (1978) concluded that the hand-building method in ceramic production prevents artwork problems when the maker can give full attention to the work process and materials. This observation is supported by recent research, which emphasises that the tactile nature of hand-building allows artists to mitigate technical issues through continuous material engagement (Trimis & Koutsoumpos, 2021).

The large-form ceramic creation in the case study has developed the respondents' critical thinking regarding ceramic art and craft. The project brings together ceramic form and art appreciation, elevating the respondents' perspectives on the aesthetic qualities of sculptural forms. The produced forms evolved and were translated from their respective styles. Thus, the project connotes individual features related to their experiences, memories, and feelings.

This study aims to investigate how first-semester ceramic students can employ traditional hand-building techniques—pinching, coiling, and slab-building—to create large-form ceramic sculptures, and assess the pedagogical and material implications of these methods in overcoming technical and resource-related constraints in Malaysian ceramic education.

2.0 Literature Review

2.1 The Studio-Based Research

The studio-based research conducted in this project incorporated an observational study focused on creating a sculptural form by a group of first-semester students in the Ceramic Department at Universiti Teknologi MARA (UiTM), Perak Branch. The respondents were required to complete their projects using hand-building and to produce a large ceramic form. According to Baharom (2015), studio-based research is an academic research activity aimed at producing a creative form, such as a product, artwork, performance, photography, music, or any form of design. Candy (2022) further supports this approach by asserting that practice-based research synthesises creative production and theoretical reflection, positioning studio work as a site for generating new disciplinary knowledge. Although universities worldwide that offer related programs adopt various definitions, methods, and guidelines, this study adopts the term studio-based research to describe its methodology, following the model proposed by Baharom (2015).

2.2 Hand-building Process

According to Jung (2020), hand-building in ceramics refers to the manual construction of clay forms using techniques such as coiling, pinching, slab-building, and moulding without mechanical tools. Archaeologists have found that prehistoric pottery was hand-built, evidenced by tool marks and surface decorations created using naturally available materials such as ropes, woven mats, sticks, or shells (Skibo & Schiffer, 2019). This is ancient proof that the hand-building method is a traditional technique in ceramics. However, nowadays, the method can produce many versatile ceramic products and sculptural forms. Current ceramic studio work requires more than merely a functional form parallel to industrial work; it demands more than that meaning, especially in art. The ceramic work has the potential to become more than just a container. The clay material used in the work method requires a certain measure of workability depending on the form design, scale, thickness, and function to establish a work of art. To that extent of understanding, the material demands a series of experiments to determine the clay's workability state. Clay has been a prominent material for sculptural forms since ancient times (Morrell & Hussey, 2020). Accordingly, the project believed that it would be able to produce the large sculpture forms as intended.

2.3 Memory Theme

Memory is related to an individual's experience, which contains various emotions and feelings. Some memories involve objects, environments, and situations that give a sign to the experience, whether happy, sad, angry, excited, tender, or scared. The experience is an aftermath of the individual presence in the specific environment (Camic & Chatterjee, 2019). Individual experience is intimate learning that prepares the person always to be accessible and attentive (Baharom, 2014). However, it is important to remember that intuitive experiences are more evident than expressionless ones (Bolt, 2016).

To conclude a relationship between the individual memory and work of art, the maker distinguished the form using visuals, signs, or symbols represented within the significant memory (Camic & Chatterjee, 2019). The fabricated artwork progresses from the subject matter, which is important and applicable as an art form. Memory in the theme for the case study acted as a concept that triggered the

respondents' research idea to develop a sculpture. However, the respondents visualised various memories of each individual's experiences and interests, displaying a fascinating collection of sculptures.

3.0 Methodology

This study collected data from formal publications such as journals and books and respondents' projects. The journals and books helped to clarify the literature, which drove the research to the answers. The research aims to identify the respondents' ability to produce a large ceramic form based on the theme and method given in the control observational study. Thus, the study followed three observation stages: idea development, mock-up process, and final sculpture process. These stages are fundamental to the studio-based research project (Douglas & Gulari, 2021). The studio-based research incorporated an observational study to determine the novice respondents' ability and process development in fabricating a large-form ceramic sculpture using hand-building. The creation of the sculpture was based on the method introduced by Baharom (2015). The study found that the model was compatible with the ceramic project's diploma level. Fig. 1 below visualises the fundamental studio project method, which is the easiest for the respondents to understand.

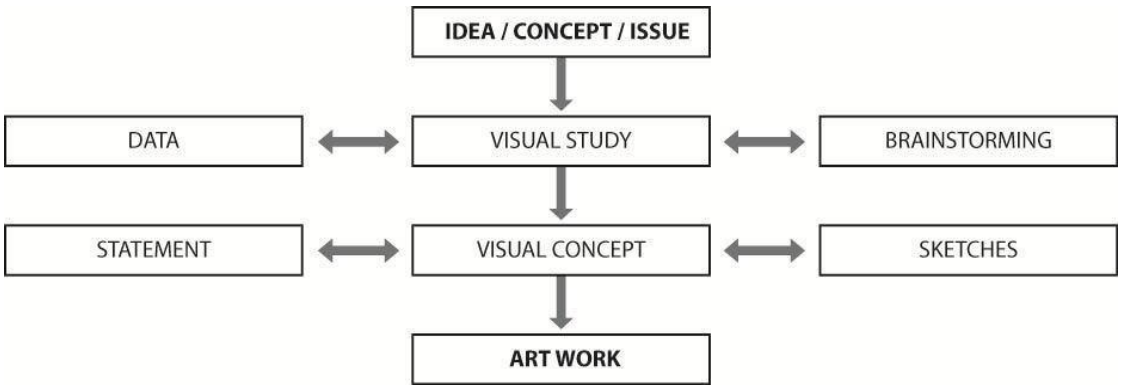

Fig 1: The Baharom's method of the studio-based research project.
(Source: Baharom, 2015)

This study adopted a qualitative, studio-based research design involving 16 first-semester ceramic students. These participants represented the entire cohort enrolled in the introductory ceramic course during the semester, making them the full and relevant population for this case study. Data were collected through observation, sketches, mood boards, and critique sessions across three stages: idea development, mock-up, and final sculpture (Douglas & Gulari, 2021). Ethical consent was obtained, and analysis focused on students' conceptual growth, material handling, and creative problem-solving.

To focus on the studio project, the fundamentals of studio-based research were applied to integrate problem-solving as a core element in idea development and form design (Jagodzinski, 2019; Mun & Brooke, 2017). Respondents were introduced to the traditional hand-building method and tasked with creating large-form ceramic sculptures. They began by brainstorming personal memories visually articulated through mood boards, sketches, and drawings. Each participant selected meaningful subject matter tied to memory as the conceptual basis for their work. This process fostered critical thinking and individual creative approaches, aligning with experiential learning goals. The final sculptures were developed from these ideas, supported by peer discussions that encouraged reflection, refinement, and form justification (Garner & Gayer, 2020; Orr & Shreeve, 2018).

3.1 The Studio Project

The study, which was conducted throughout the projects and involving 16 respondents, showed various compelling results. After their project's proposals had proceeded, they began to work with the mock-up forms. The process involved clay as the primary material for the final forms. The mock-up visualised the work of art in the early phases and the equidistance of the artwork procedure. The respondents prepared the clay material and worked to build the mock-ups using the hand-building method. The mock-ups were made in small sizes, about one foot tall. The observation identified that the respondents produced the forms using the method. However, they also experienced some difficulties, such as translating the drawing form into a three-dimensional form and understanding the material and form. They had overcome difficulties by comprehending the form scale, controlling the material moisture and exposure (drying process), clay behaviour and forming control. Many types of clay can be used in the hand-building process; however, the nature of the form is determined by the clay's malleability (Perkins & Wren, 2019). Regarding this, in the study, the respondents learned how to analyse the clay body that applies to the method. At the same time, the respondents processed the clay to achieve its workability state because it was found rigid and improper to work with.

The ceramic process requires the respondents' critical thinking to understand form and clay workability at any scale of work. Any ceramic piece demands avoiding hollow solids, especially in large forms, to reduce weight, prevent cracking, facilitate drying, and ensure even heating during the firing process (Rhodes, 2019). As the respondents were new to ceramics, some lacked this understanding and required assistance. The respondents understood that the ceramic body needed strength for large ceramic forms to support the weight. This issue always arose when they added more forms or clay walls to the existing structure, causing the lower forms or walls to collapse

if they were soft. Thus, understanding form structure and technical aspects is a significant requirement for the respondents to avoid these problems.

Regarding the sculpture process, the respondents can choose from three types of hand-building methods. The chosen work method depends on the form, structure, and surface. In the case study, most respondents used coiling and pinching methods because their ideas of sculptural forms were based on the organic structure's appearance. Then, a minority of respondents used slab-building, as the artworks have many flat profiles. The respondents needed to analyse their sculpture ideas before forming the final artwork to determine the technical processes and solutions to the problems in the mock-up process. Thus, the final sculpture process showed that most respondents did not experience many problems while building their sculptures.

The hand-building process also displayed the respondents' tolerance for material and time operations. The clay's workability is important for producing a large form of ceramic. If the clay is too soft or has insufficient plasticity, it causes difficulties in form development. The respondents demanded that the clay be prepared adequately and needed to analyse the clay quantity required for the whole form. Then, when working with the slab-building technique, they need to let the clay harden in specific conditions to take advantage of the process and maintain the form's quality as intended. The time spent allowing the clay to dry under the intended conditions depends on the room temperature and the clay's thickness, which sometimes takes one to three hours. The drying process requires controlling and monitoring procedures to prevent defects, such as excessive dryness, warping, and cracking, for which the room temperature is recommended for practice.

4.0 Finding

The study has identified the crucial discovery of the studio-based research project method for producing a larger form of ceramic sculpture. Baharom's method was further developed in this study for better respondent comprehension and reference. The new method development is shown in Figure 2, which thoroughly focuses the process on every stage to ensure the respondents can follow the research project mechanism. Regarding the new method, the respondents were able to practice it conveniently. They knew their project progression would be interrupted if they were stuck at any stage. The new method also introduced the hand-building technique, mock-ups, and analysis to guide the respondents in the final sculpture fabrication. These new stages helped the respondents to be analytical in their understanding of the fabrication technique, materials, form, and finishing process. Thus, the final sculptural form was produced with the quality and aesthetic value required.

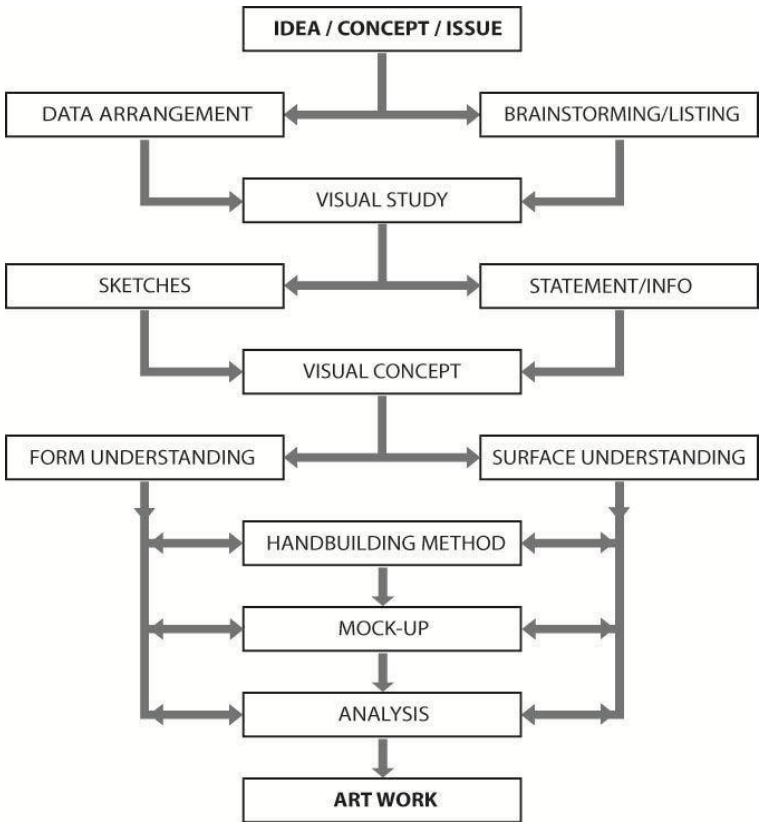

Fig. 2: The development method of the studio-based research project.
(Source: Authors' illustration)

The preliminary stage of this study found that all the respondents could present their ideas, concepts, and issues, but some respondents lacked data collection, and brainstorming caused insufficient ideas. This deficiency troubled the respondents' progress,

which demanded more session discussions on their ideas later. Regarding the discussion, this occurred because the respondents also lacked research effort, brainstorming elaboration, and focus. However, due to the respondents being inexperienced in ceramic art, they all had difficulty justifying their proposed artwork to rationalise their novel sculptural form. Therefore, in this study, they learned to discuss the novelty justification and influences from other established artworks.

The study also showed that the respondents faced no difficulty fabricating the large-form ceramic sculpture, although they were briefly introduced to the hand-building method. The respondents focused on the process and developed their understanding of the method, as the large-form ceramic demands many repetitive procedures. For example, producing the curvy wall for the sculpture's surface required the application of multiple coiled clays. Consequently, they better understood the coiling process, including material monitoring, form control, drying, shrinkage, and material workability. The respondents' knowledge from this experience was developed during the mock-up process, which they used for the final sculpture fabrication.

The final sculpture displayed the respondents' creativity and aesthetic knowledge concerning the previous processes, such as idea presentation, mock-ups, and discussions. The fabrication of the final sculpture also visualised the respondents' ability to respond to their two-dimensional ideas and translate them into a three-dimensional form. Most respondents built the final sculpture replicating the mock-up, while some struggled to solve the technical issues. The struggle occurred when they needed to change the hand-building method for the final sculpture. For example, the mock-up used slab building in certain parts, but they needed to use the coiling method for the final form because the slab building could not hold the form at a large size. However, all the respondents completed the final sculpture within fourteen (14) weeks.

Table 3 shows the number of respondents who were involved in the study. Most respondents used the combination method of coiling and slab building in the project compared to others. The study identified that the respondents' sculptural forms demanded the combination of coiling and slab building as the final form, and the surface visualised organic forms with some planar surfaces, especially in the interior of the artworks. Only one respondent used pinching and coiling due to the artwork envisioning all curvy and irregular surfaces. The respondents who used the single slab building method presented sculptural forms only achievable by this method, such as cube forms or many planar surfaces resembling geometrical forms.

Table 3: Number of respondents who used the hand-building method for the final ceramic sculpture.

	Hand-building method		
	Pinching + Coiling	Coiling + Slab Building	Slab Building
Respondent	1	12	3

(Source: Authors' table)

5.0 Discussion

This study demonstrates that hand-building effectively enables novice ceramic students to produce large-form sculptures. Through a structured, studio-based process, students engaged in iterative making, material exploration, and problem-solving, validating Douglas and Gulari's (2021) framework where creative inquiry is developed through cycles of conceptualisation and reflection.

The newly developed method adapted from Baharom's studio-based model facilitated the respondents' learning across idea generation, mock-up construction, and final fabrication. Visual tools such as mood boards and sketches, aligned with Garner and Gayer's (2020) framework, were instrumental in developing and translating memory-based concepts into three-dimensional forms. This supports Camic and Chatterjee's (2019) view that emotionally driven experiences are foundational to meaningful artistic outcomes.

Students encountered common technical challenges—structural instability, clay malleability, and drying control—but resolved them through observation and guided experimentation. These outcomes reflect Jagodzinski's (2019) notion of problem-solving as central to studio-based learning and developing critical thinking through making.

Importantly, the findings relate to the broader context in which this research was conceived: the limited use of clay in Malaysian public sculpture and constraints in access to industrial equipment. Students' success in producing large-scale work using low-tech, traditional methods demonstrates that a well-structured studio-based approach can address educational and cultural barriers. The project confirms that a methodical, theme-driven studio process grounded in memory and supported by traditional techniques enhances material skills and conceptual thinking in early-stage ceramic education.

6.0 Conclusion

This study confirmed that studio-based research, structured through idea development, mock-up, and final fabrication, effectively guided first-semester students in producing large-form ceramic sculptures using hand-building. The developed method enhanced their ability to conceptualise, experiment, and resolve technical challenges, supporting material proficiency and reflective practice.

The respondents' success highlights the pedagogical value of integrating traditional ceramic techniques with personal, memory-driven themes. This approach aligned with cultural sensitivities and encouraged critical thinking, creativity, and engagement within a resource-conscious educational context.

The findings suggest that the studio-based research model is suitable for inclusion in undergraduate ceramic education and could be further adapted for higher-level studies. The project provides a structured, accessible framework that supports creative development in contexts where material limitations or skill levels might otherwise hinder large-scale ceramic production.

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Paper Contribution to Related Field of Study

This study contributes to studio-based art and design education by presenting a structured method for teaching large-form ceramic sculpture using traditional hand-building techniques. It demonstrates how novice students can develop conceptual and technical skills through memory-driven themes and problem-solving strategies. The approach addresses educational gaps in Malaysian ceramic practices and offers a culturally sensitive, resource-conscious model adaptable to undergraduate and postgraduate levels. The findings support current theories in practice-based research, highlighting the integration of material exploration, reflective learning, and creative expression within a studio context.

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