Clay Modelling: a Skill Approach to Mainstream School Education

1. Introduction:

I still vividly remember the experience of introducing clay modelling class at Klorofeel School. Most of the students come from urban families and live in apartments. Unlike many children from rural areas, they have limited opportunities to play with soil, mud, dust or other natural elements. They are far more familiar with the synthetic colourful clay available in markets, which is clean, vibrant, pleasantly scented and easy to use.



First Clay Modelling Class

However, the first time when they held soft, natural clay in their hands, many immediately exclaimed, "Chhi, Chhi!". Some even washed their hands right away. Initially, I ignored this reaction. Understood it marked the beginning of an important learning journey. For the first time, many children directly touched the earth's soil and experienced a natural material with their own hands. It reminded me of my own childhood, when playing with mud and soil was a part of life.

Gradually the students began to realize that they could transform a shapeless lump of clay into an animal, a toy, a vessel, a human figure or any other object based on their imagination. Their initial aversion to clay gave way to curiosity, eventually blossoming into a love for the medium. This transformation did not happen overnight. It took nearly a year to foster a friendly bond between the students and the clay.

My own experience as a student in Santiniketan has also deeply influenced this teaching approach. The education system at Santiniketan has always accorded a significant place to nature. Students are not confined to conventional classrooms, availing the opportunity to learn through direct engagement with the natural world around them.



As an alumnus of Santiniketan, I wanted to bring that experience into my own school. Consequently, the clay studio at Klorofeel School has become a small 'piece of Santiniketan', where children work amidst the breeze, sounds, scents, colours and natural light. Students run eagerly from the main school building to this space which is an essential part of their learning journey, quite different from the mainstream experiences.

Learning with hands and with Nature are necessary for integrated living and employability

Modern school education often prepares children primarily for desk-based tasks. In the past, this meant working with files and paperwork. Today, it involves spending long hours in front of computers and screens. Technology and Artificial Intelligence are becoming integral part of our lives. However, it is crucial to ensure that children do not become entirely dependent on machines. They need to understand nature, work with tangible materials, use their hands, solve practical problems and cultivate respect for the world around them.

Clay modelling offers such opportunities. It connects children directly to the natural material while simultaneously fostering practical skills, creativity, observational abilities, patience, problem-solving capabilities and environmental awareness.

As the importance of vocational and skill-based education grows within the school system, hands-on activity like clay modelling is becoming increasingly significant.

2. Approach and Method:

The primary objective of this method is not merely to teach students how to create various objects using clay but to encourage and appreciate their creativity. The initial step is to foster a friendly relationship between the students and clay. Once they become comfortable with the natural clay, instruction in various technical skills is gradually introduced.

This pedagogical approach was built upon three interconnected concepts: Head, Hands and Heart.

Head – Think, Observe, Imagine

Before creating an object, students are encouraged to observe its shape, structure, volume, proportions, balance and the interrelation of its parts. Instead of viewing an object merely as a flat drawing, they learn to visualize it in a three-dimensional form.

Hands – Make, Explore, Experiment

Next students work directly with the clay. They prepare, touch, shape, join, cut and smooth the clay, repair broken sections and experiment in various ways. Through hands-on work, they learn to understand the properties and potential of the clay.

Heart – Feel, Care, Respect, Connect

In this phase, students develop a sense of care for the clay, tools, workspace and their own creations. They learn to respect their own work and that of others, collaborate with classmates, take responsibility for their work and forge a deeper connection with nature.

These three elements are not separate stages; they are interconnected. Thorough guidance and practical work deepen understanding and the emotional connection gives meaning to the learning experience. This integrated concept became the core innovative principle of the clay modelling journey.

2.1 Understanding Clay

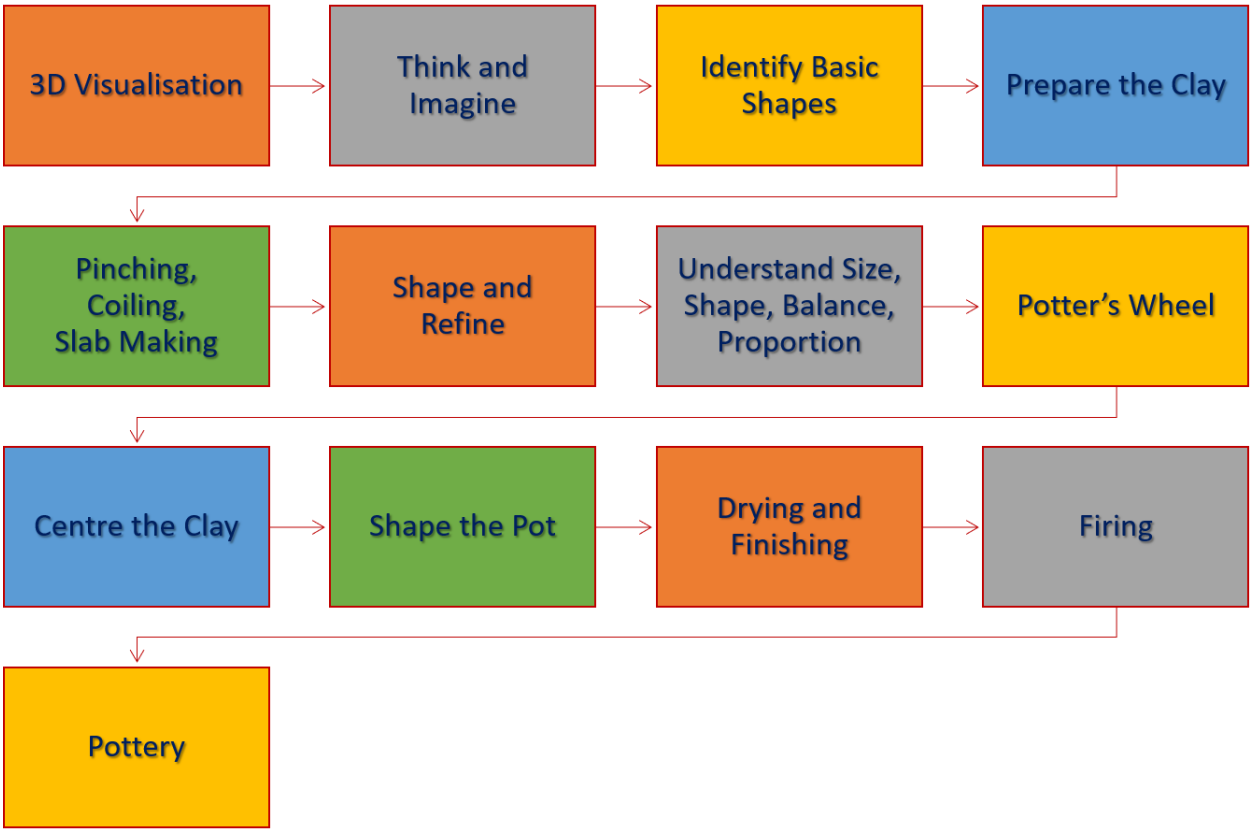
After becoming comfortable with natural clay, students learn about its various fundamental properties such as Structure and texture, Flexibility and plasticity, Moisture content and consistency, Proper clay preparation, the duration for which the clay remains workable and the behaviour of the clay as it dries. They also learn why issues such as cracks, air bubbles or structural failures occur in the clay and how to minimize these through proper preparation.

2.2 Transitioning from 2D to 3D

Moving from drawing to modelling is a crucial part of this pedagogical approach.

Initially, students are taught to identify the basic geometric forms such as spheres, cylinders, cubes, cones and slabs. Subsequently, these basic forms are combined to create more complex objects.

The learning process needs to be followed in a sequence:



This progression gradually guides students from observation toward working independently.

2.3 Hand-Building Techniques

Initially, students work primarily using their hands. Three basic methods are taught:

1. **Pinching:** Gradually shaping a cylinder of clay by pressing and pinching it with the fingers.
2. **Coiling:** Creating a cylindrical form by rolling clay into long, rope-like coils and stacking them one upon another and joining them together.
3. **Slab Making:** Flattening clay into sheets or slabs with बेलन (rolling pin) and joining various parts to create an object.



By learning these methods, students create geometric forms, toys, animals, vessels and various objects based on their own drawings and imagination.

2.4 Introduction to the Potter's Wheel

Senior students are introduced to the potter's wheel after developing certain skill and confidence in hand-building.

They learn how to:

- make clay for throwing
- place the clay on the wheel
- centre the clay
- open up the centre
- gradually raise the walls
- control the form

Controlling clay on a rotating wheel is relatively difficult; therefore, this skill is taught gradually.

2.5 Solving Technical Problems

Students face some common problems. These include:

- incorrect clay consistency
- air bubbles inside
- cracking during drying
- weak joints

- uneven surfaces
- collapse of the form
- difficulty using tools

These issues are addressed through demonstrations, repeated practice and discussions. Techniques taught to mitigate these problems include proper wedging to reduce air bubbles, maintaining the right moisture levels, smoothing surfaces, securely joining parts using slip (acts as glue), and ensuring a slow drying process.

Tools are introduced gradually. Students first use simple wooden tools, later followed by specialized modelling tools.

If a model collapses or cracks, students are encouraged to investigate the cause and try again. Mistakes are viewed not as failures, but as a natural part of the creative process. This encourages students to experiment without fear.

2.6 The Relationship of Clay with History and Culture

To foster student interest, the history of clay modelling and pottery is explained through stories and examples. Students are shown the works of various clay and pottery artists, as well as some pieces created during my own student days.

They learn that pottery is deeply intertwined with human civilization. For ages, clay vessels have been used for storing water and food, cooking, decoration, cultural practices and various aspects of daily life.

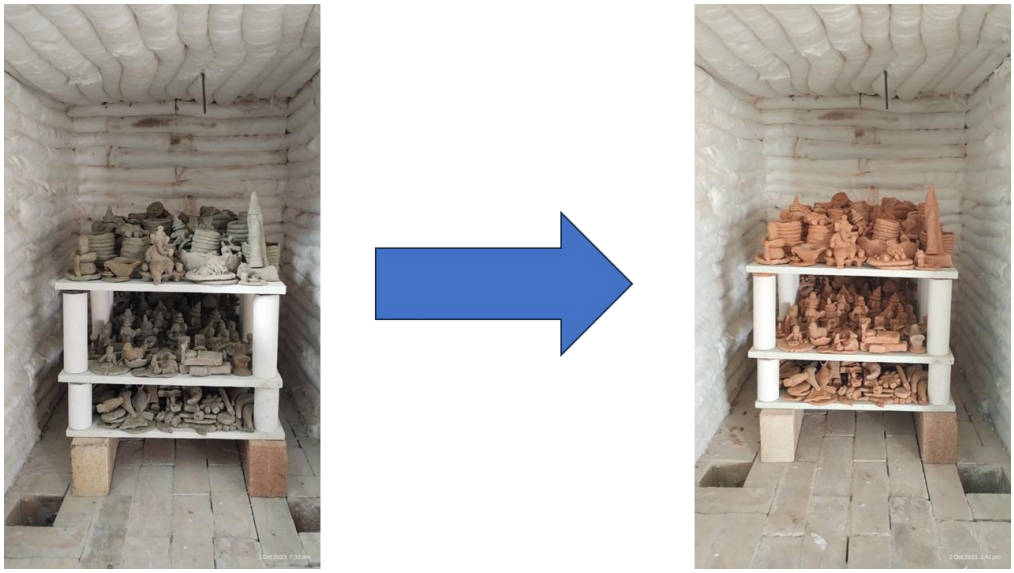
Consequently, students understand that clay is not merely an art material, it is an essential part of human history and culture.

2.7 Firing and Ceramic Learning

The studio at school is equipped with a firing furnace. This allows students to witness the entire first-hand process, from raw clay to the finished ceramic piece.

Once the clay models dry thoroughly, suitable pieces are fired in the furnace under controlled conditions. Students observe how soft and fragile clay transforms into hard ceramic material under the influence of heat.

Through this experience, they gain practical knowledge regarding drying, firing, material transformation and the importance of patience in the creation of ceramics.



3. Findings:

3.1 Practical and Technical Skills:

Students acquire practical knowledge on clay preparation, shaping, joining, smoothing, drying, finishing and firing. Gradually, they become familiar with hand-building techniques and the potter's wheel.

This learning process does not rely solely on verbal instructions. Students learn by touching the clay, observing its properties, making mistakes and trying again.

3.2 Development of Three-Dimensional Thinking:

Students primarily work on two-dimensional drawing and gradually understand depth, volume, structure, proportion, balance and form.

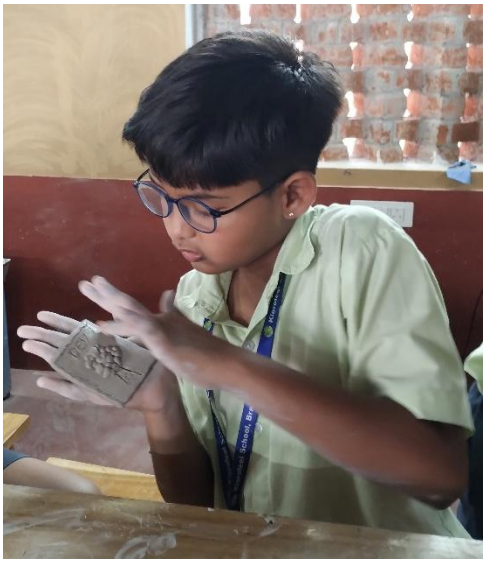
They learn to view objects from various angles and then create three-dimensional forms. Consequently, the relationship between drawing and physical form becomes clear.



3.3 Fine Motor Skills and Coordination:

Tasks such as pinching, rolling, cutting, joining, using tools and smoothing require controlled movements of the fingers and hands.

Through regular work with clay, students get the opportunity to exercise fine motor control, hand-eye coordination and spatial awareness.







3.4 Creativity and Problem-Solving:

Clay offers students the freedom to add, remove, reshape, repair and experiment.

Gradually, they realize that a creative problem does not always have a single solution. When a task does not go according to plan, they explore alternative methods. This fosters opportunities for independent decision-making and practical problem-solving.

3.5 Patience and Perseverance:

Working with clay is time-consuming. The clay must be prepared properly, the model should be crafted carefully and the finished piece is thoroughly dried before firing.

Students learn that rushing the process could ruin the work. As a result, they learn to appreciate the importance of patience, attentiveness and perseverance.

3.6 Connection with Nature:

A significant outcome of this programme is the shift in students' attitudes towards natural clay.

Children who initially hesitate to touch the clay gradually begin working with it comfortably. This direct experience transforms their perspective on natural materials.

Through the use of clay, the earth's soil has become an integral part of the learning environment. This creates a new opportunity for them to understand natural materials and the environment.

3.7 Connections with Various Subjects:

Clay modelling can naturally integrate with various academic subjects taught in schools.

History and Culture: Students learn about ancient civilizations, traditional pottery, cultural practices and ceramic art.

Science: They learn the properties, moisture, drying, firing and the transformations clay undergoes during the ceramic-making process.

Geography and Geology: They learn that clay is a natural material derived from the earth and understand its relationship with geological processes and natural resources.

Mathematics: Modelling and pottery involve the application of measurement, geometry, symmetry, proportion, volume, size and balance.

Thus, clay modelling serves as a practical bridge between art and academic learning.

3.8 Confidence and Cooperation:

Students assist one another when they encounter technical challenges. They share ideas, discuss solutions, observe one another's work and also make clay together.

Creating a complex model successfully instils a sense of achievement in the students. They become eager to experiment further and present their work to others.

Consequently, the studio evolved into a space for group learning alongside individual creativity.

3.9 Exhibition and Recognition:

On October 13, 2023, the first Clay Modelling and Terracotta Exhibition was held at Klorofeel School. It was inaugurated by Dr. Triloki Nath Pandey and Dr. Annapurna Pandey, Professors of Anthropology at the University of California, Santa Cruz.



The exhibition showcased clay sculptures and pottery created by the students. Their work reflected their imagination, technical skills and personal approach towards the material.

Teachers and visitors praised the students' work. This exhibition provided students an opportunity to display their creation publicly and receive recognition for their hard work.

It encouraged them to experiment further, hone their skills and take greater ownership of their creative work.

Since then, exhibiting has become a part of the journey.

3.10 Local Artisans and Future Skill Opportunities:

Around my school, the traditional livelihood of village potters and clay artists are gradually disappearing. Their traditional knowledge is a vital part of the local cultural heritage.

Inviting local artisans to the school studio to demonstrate traditional techniques and working alongside students is our vision - thereby establishing a direct link between traditional knowledge and modern school education.

If suitable arrangements are made to showcase and sell their creations, the studio could also produce local artisans with an opportunity for additional income. This too is part of our vision.

Students will get exposed to future skills such as pottery, ceramics, sculpture, handicrafts, product design and entrepreneurship.

4. Implication:

Experiences at Klorofeel School demonstrate when clay modelling is adopted as a structured, skill-based learning activity—rather than merely an extracurricular craft, it can become a meaningful component of mainstream school education.

The most significant shift is not limited to technical skills; the students' relationship with the material also evolves gradually. Those who initially hesitate to touch natural clay eventually learn to work with it confidently and express their creative ideas.

This program has created diverse learning opportunities for students, including:

- practical and technical skills
- three-dimensional thinking
- fine motor coordination
- creativity and experimentation
- problem-solving
- patience and perseverance
- cooperation and responsibility
- a connection with nature
- an understanding of history and culture
- practical links to various academic subjects

The firing furnace in the school studio has further enriched this learning process. Students witness the entire transformation from raw clay to a finished ceramic piece and appreciate the significance of each stage.

The studio can also serve as a bridge between the school and the local community. Involving traditional artisans could help preserve local knowledge and simultaneously foster cultural exchange and livelihood opportunities.

In today's digital and AI-driven world, practical learning involving natural materials hold special importance. Alongside digital skills, children need opportunities to touch, create, observe, experiment, repair and craft things with their own hands.

Clay modelling can foster such an environment. By transforming a simple lump of clay into a completed work of art, children learn to value imagination, skill, patience and effort.

Therefore, clay modelling should not merely be viewed as an art or craft activity. It is a skill-based educational practice capable of integrating art, nature, science, culture, practical knowledge *and* human values.

Its broader objective extends beyond simply producing future potters or artists. Rather, the goal is to nurture students who can observe, think creatively, work patiently, solve problems independently, and take responsibility—while appreciating both modern technology and the natural world around them.

The clay studio is not merely a place for making pottery. It is a learning space where children discover the value of thinking, creating, feeling and crafting with their own hands. Klorofeel School is motivated to evolve such a learning ecosystem, drawing inspiration from Rabindranath Tagore's philosophy of experimenting with creative spaces immersed in nature.



"The highest education is that which does not merely give us information but makes our life in harmony with all existence."

- **Rabindranath Tagore**