



Typography and Children

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TITLE OF THE PAPER: Type that Connects us with our roots

Theme: Typography for Children in the context of Culture

KEYWORDS: Indian culture, Type & Patterns and Indian Identity

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Abstract:

Patterns play a very important component in a child's development process. Everything around us is connected to a pattern whether its science or mathematics. Patterns bring a sense of order in what may seem chaotic around us. Nature is the best example where there is order and symmetry.

We wanted to see if we can use pattern in typography, and help children learn alphabets by using pattern as an element. This search first led to the study of Indian motifs like Kolam, Rangoli to understand how patterns are created using simple geometry.

This led to the development of pattern puzzles, where children start making geometric patterns using these shapes. They were later introduced to alphabets, numbers and shapes using puzzle pieces.

Key words: Visual Memory, Patterns, Kolam, Indian culture

Introduction

Studio Maniams is a studio that wanted to develop toys that's Indian in heart and soul. Our mission was to use inspiration from Indian culture and use the skills of Indian artisans to develop these products. The first product Studio Maniams wanted to develop was wooden puzzles that were inspired from Indian culture. For which we first studied memory & logic, types of memories that influenced learning. Memory is basically retention of information over time for the purpose of future action. The memory is normally divided into Motor, Verbal, Visual-shape & Emotional memory. These 4 memories are essential in development of logical reasoning for children.

Motor memory is the result of motor learning, which involves development of new muscular coordination. This allows kids to recall motor coordination that they learnt in order to interact with the environment. Playing a musical instrument, catching a ball, and riding a cycle are all examples of motor memory.

Verbal memory involves recall of words, verbal items or language-based memory. Verbal memory is often considered to be a type of short term memory which reflects the ability to hold information in one's mind for a brief amount of time.

Emotional memory is connected to events which trigger emotions such as happiness, terror, anger etc. when we recall an incident.

Visual memory enables a child to recognise, remember letters, words, and their meaning. Visual memory is important in the world of learning ;as much as 80 percent of what we learn is visual.

If one notices visual memory follows a visual pattern of learning, As kids learn to read, they remember images of the words they see. As kids learn to write, they recall the appearance of each letter.

We realized the importance of Visual-Shape memory that helped children recognize and distinguish forms, faces, colours and visual elements. We looked at Montessori & Waldorf schools and realized how form drawing was used to help children in their learning. We looked at how patterns help children recognize forms and shapes effectively. This helped them in their memory and learning skills. Hence we wanted to connect patterns with learning of language.

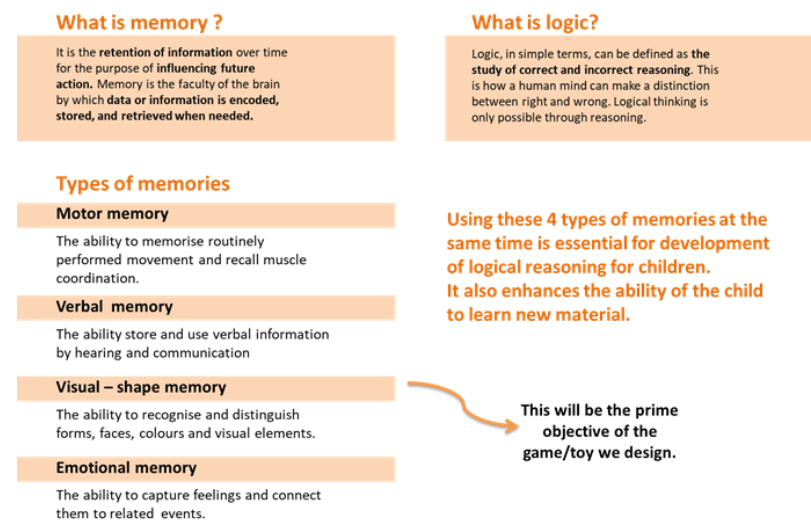


FIGURE 1: Understanding memory and learning

After a lot of research we narrowed down on our inspiration from Kolam/Muggu a daily art form created in households across India. Traditional Kolams were drawn in coarse rice flour to create meaningful patterns daily & during festivals. The kolam left overs also feeds our surrounding creatures like ants, birds, etc. This creates co-binding between us,

nature & living organisms in our day to day lives enriching harmonious co-existence. The kolam patterns of lines and curves are based on a grid of pullis (dots) that are encircled, looped or joined using straight or curved lines. We did extensive research on these motifs to develop forms that could work together to form Kolam motifs. We further developed these forms to create a set from English language A to Z that can be used by kids.



FIGURE 2: Understanding Kolam in relation to Indian context

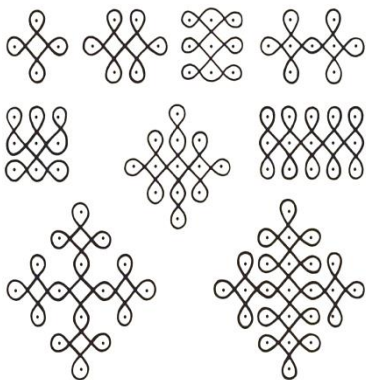


FIGURE 3: Study of Kolam patterns

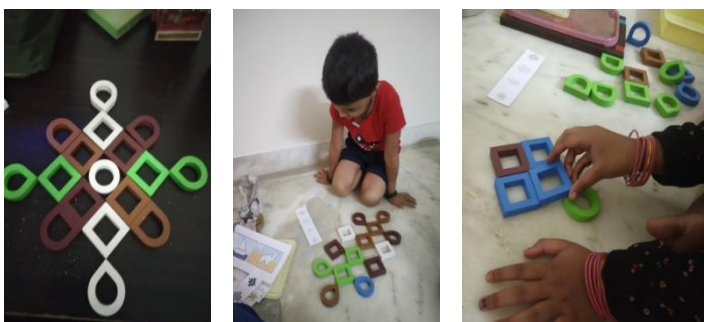


FIGURE 4: User Research & Testing of mockup models

In our user research, we found that kids have developing fine motor skills, and couldn't keep the pieces precisely; hence we refined the design with a guiding element at the edges that made the pieces stay at precise location. We developed a new prototype with refined design which worked well with the kids. Even a 3 year old was able to work with

the pieces making simple patterns. We categorized the motif into simple to complex patterns so that children can work with basic to complex motifs.

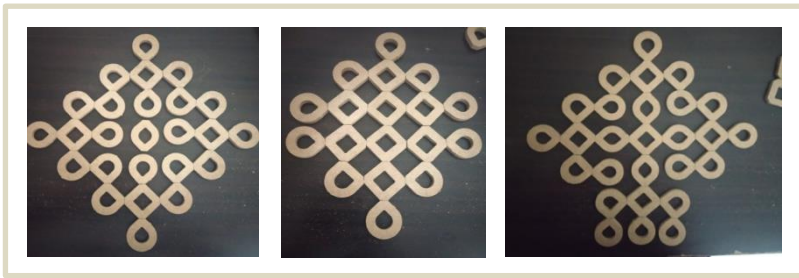


FIGURE 5: Refined Prototype with edge reference

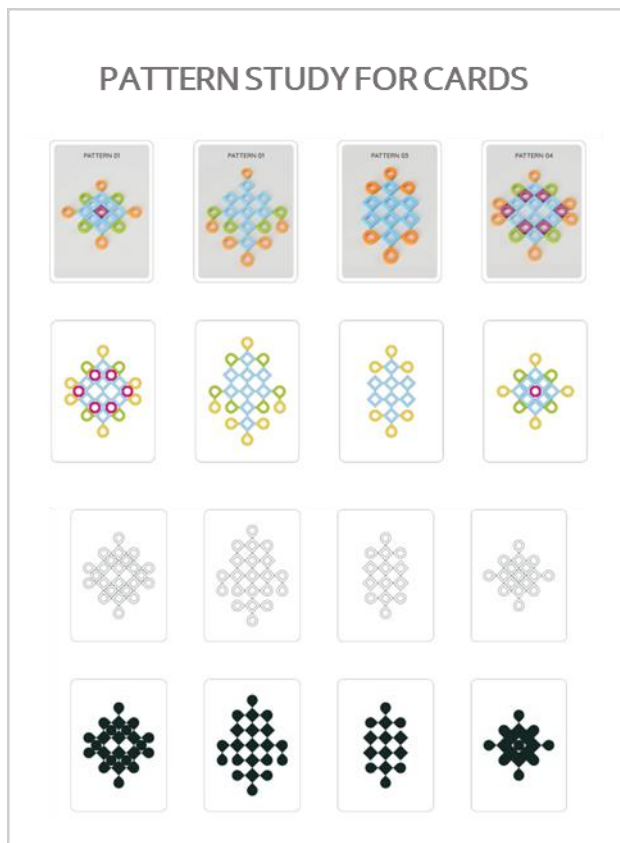


FIGURE 6: Pattern study of cards

We developed different styles of pattern cards, which were tested with children to understand kids visual recognition ability. Based on the study we developed a 2 sided card, with line drawing one side and coloured on the other. Kids could recognize form based on shape as well as colour.



FIGURE 7: Refined Prototype & testing of pattern cards



FIGURE 8: 3 year old with simple pattern cards

We developed two versions of the product. One version was made of natural wood in which we used 3 types of wood to create a contrast in the motifs. We also developed a coloured version inspired from our Maniams brand colour.

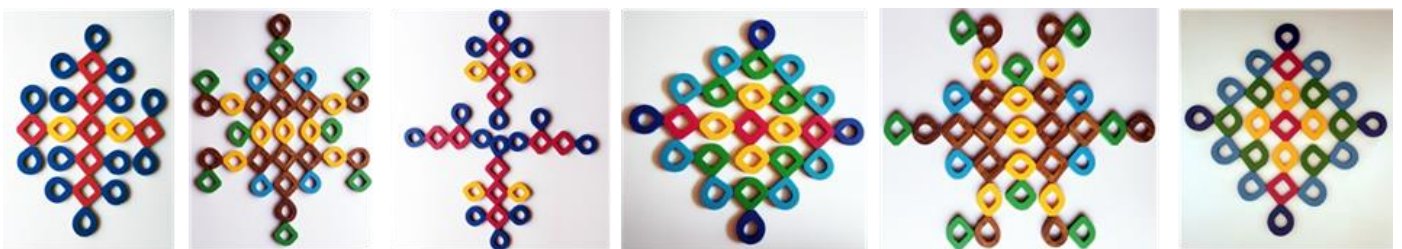


FIGURE 9: Final Patterns

The next task was to develop a complete typography style with the patterns. In testing we found that we needed an additional circular shape that helped in easy placements of nodes of an alphabet, which also worked as a reference for the form of the alphabets. We worked out both lower and upper cases of the English alphabets.

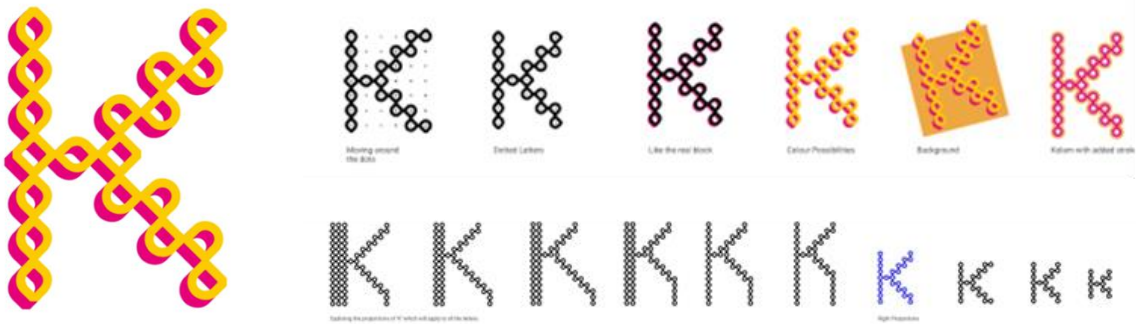


FIGURE 10: Type Design Explorations

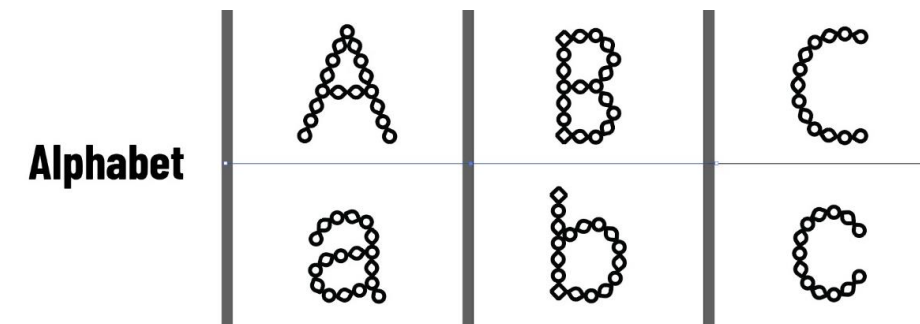


FIGURE 11: Upper & Lower Case

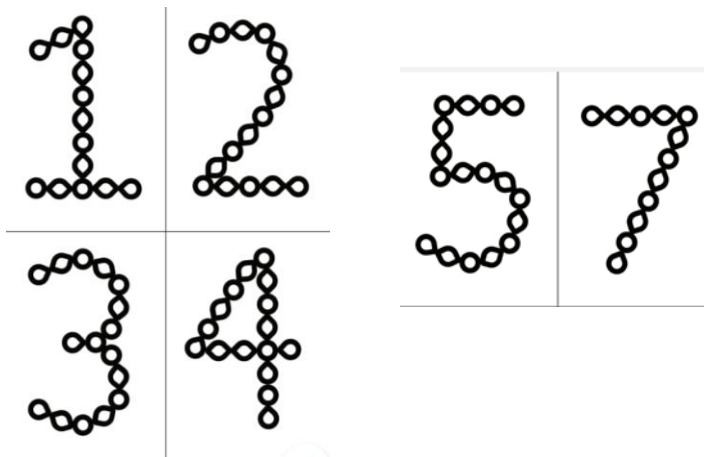


FIGURE 12: Number Design

Integrating with school teaching methodology:

While studying the teaching methodology we found how Form drawing is integral part of any Waldorf /Montessori schooling. In form drawing in Waldorf schools children begin with

whole body movements. Children walk and run the shapes. Children trace them in the air, using large arm movements. Once the child begins to draw the pattern or shape, they learn how to translate dimensional experience onto paper. Observing a form minutely, understanding how it is drawn, identifying patterns and recreating it require many skills beyond those of observation, orientation and the fine motor skills of the fingers. These tasks, strengthens child's cognitive abilities and problem solving skills. We wanted to work out a system that could be used in children's learning at kindergartens. Children first use the pattern cards to make patterns, then use learnings to draw form drawing of the patterns on slate/air. This learning is then translated in understanding alphabets as patterns.



FIGURE 13: Final outcome with use of circle and square as nodes



FIGURE 14 : 3 year old using the Maniams Krazy Kolam wooden pieces

How does Maniams Krazy Kolam work in Form drawing? After they make the wooden puzzle, the child draw the pattern in the air, asking them to translate the pattern through continuous lines with the pattern cards as reference.



FIGURE 15: Children using the Maniams Krazy Kolam wooden pieces to visualize the pattern

Below you can see how Waldorf schools are using Krazy Kolam wooden puzzles in Form drawing exercises at Classroom level. Kolam patterns have been known to be meditative in our culture. This form of multisensory learning has long lasting benefits for the child. Kolam puzzles brings a sense for beauty, harmony, and proportion; helps in problem solving and critical thinking skills; and develops sense of creativity and self confidence.

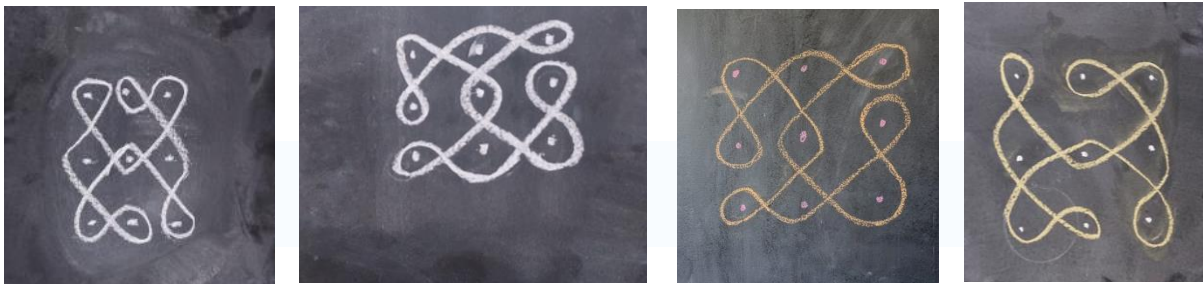


FIGURE 16: Form Drawing Exercise



FIGURE 17: User pics with Maniams Krazy Kolam patterns and alphabets

Product Packaging & Production:

We wanted to keep the handmade feel of the product, as Kolam is very sustainable method of making motifs. Hence the complete product was handmade with Indian artisans. The product packaging also was developed using bamboo baskets thus supporting basket weavers.



FIGURE18: Final product with packaging

Conclusion:

Children were provided with pattern cards and then a booklet for alphabets, numbers & shapes. Children enjoyed making pattern wooden puzzles starting with simple and moving to complex patterns. The open ended method of the puzzle encouraged them to develop their own patterns & designs. The learning happens through play. Teachers have given feedback that this method helps children remember the alphabet forms better, since they are keeping each individual piece to create the alphabet form. Kindergarten schools have started using the product in their schools for UKG/LKG students.

The Krazy Kolam also won the **All India Toycathon** award in the creative thinking and logical reasoning category. A Krazy Kolam Pro version was also developed with complex pattern booklet. The Kolam Pro product has helped senior citizens suffering from Dementia, Alzheimer's , as puzzles exercise the left & right side of the brain. Its a mental workout that improves problem solving skills and attention span in elders. Kolam is part of our rich Indian heritage. The product has thus helped bring a connection between grand parents and children as well. The product has also become an integral part of our Indian cultural festivals, of placing the pieces for Diwali celebrations, Navratri Golu celebrations etc. A product that helps children connect with our Indian roots.



FIGURE19: Kids using the Maniams Krazy Kolam wooden puzzles in their schools



FIGURE 20: Seniors using Maniams Wooden puzzles of Rangolio & Krazy Kolam



FIGURE 21: Krazy Kolam Pro for Adults & Senior Citizens that lets one make Complex Patterns



FIGURE 22: User pic using the Maniams Krazy Kolam pieces for Navatratri Golu & Diwali Celebrations