

TOT Challenge 3

Need for Mould Knowledge

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Bamboo Craft is unique in creating shapes which are based on the structure of weave itself. Thus concept of 'Moulds' seems new to the trade for generations. To my surprise remote corners in the Country like Khonoma in Nagaland and in a village of Andaman Nicobar islands, I saw local craft persons using moulds. Knowledge of Moulds, jigs, fixtures becomes significant in the context of its survival in the contemporary mass 'Markets'.

Moulds in Bamboo are not like moulds used for making plastic products or local items like 'cakes' and 'idlis'! Hindi word used for it is 'Sancha'! It is more of a part support to get same shapes! UNDP project on Tools, Small Technologies and Finishes, undertaken at IDC gave us an opportunity to look at Moulds, jigs, fixtures and Templates for bamboo craft in a 'new Frame work' using engineering knowledge available for making industrial products! Working out new mould concepts for bamboo craft with two of our master craft persons giving 'feedback and validation' continuously, consolidated our efforts. Making moulds for 40+ workshops refined our mould knowledge for bamboo craft!

What is the significance of mould knowledge for a Bamboo craft Trainer?

1. It gives a **paradigm shift in thinking** and learning of bamboo craft.
2. It will become possible to produce '**New designs**' **with a shape consistency**
3. It brings bamboo craft into a **contemporary product zone** to fit in to new uses and current markets!
4. It helps in positioning bamboo craft with **school educated new generations**.
5. It can make **bamboo craft competitive and viable**.

1. Paradigm shift in Thinking

Traditional crafts-person is used to making a known design (like a basket) learnt earlier! The knowledge of making is chunked in terms of objects known and learnt! Not only the shapes are familiar but also the components and structure to make are known. A traditional trainer is able to guess/estimate (approximate) material required for a small group of trainees to make a design(say a basket).

Once the training is to be done using moulds, **exact estimation** of strips required becomes an advantage as it can be extended for larger number by multiplication

reducing the wastage in approximate estimations!
Mathematical estimations make the task of extending into different situations easy! Training can be planned for 10 or 30 persons 1 or 3 days based on the number of moulds available.

2. Making 'New designs' with shape consistency

New designs are conceived in sketches and drawings. One time use of moulds in thermocol helps craft persons to make the first prototype, saving cost and time! Trainers either make the mould or get the thermocol mock-up made by the designers or design interns!

Once the prototypes are made, a mould for repeated use can be designed by a designer/ engineer. Some trainers with carpentry background can specialize in making thermocol/wooden moulds! Initial moulds help in achieving shape consistency of the designs conceived.

A thermocol mould made for a fish shape can be seen in the picture in the next page. Generally one-time mould gets broken if there are under cuts. In this case thermocol mould is made collapsible so that it can be reused or becomes a base for making the mould in wood.



Thermocol mould for making a fish shape!

Knock down moulds in ply wood are also easy to make for an initial prototype if the shape is cylindrical.

3. Contemporary product zone

Post modern designs offer a new scope for bamboo craft products to compete with contemporary products. One of the new features needed for this will be possibility to assemble or fix other **mass-produced components**. For example lamps need to be fitted with 'folders and bulbs' which are mass produced to exact dimensions. Moulds for bamboo craft help in achieving such fittings/ assemblies.



table lamp in coil technique

In the lamp designed by Kirankumaran (as a student at IDC), the fitting of circular tube demands size consistency of top part which is not possible to achieve without a 'mould'.

4. School educated, 'new generation' of Craft-persons

Future generations of bamboo craft persons will be 'school educated'. Additional trainings in bamboo craft after passing 10th or 12th, are already in the pipe line. Such trainings will have a good input in use and making of moulds along with 'entrepreneurship'. Use of moulds for competitive production will be imperative! Trainers for these 10+ and 12+ programs need to have a thorough knowledge of Moulds . Some trainers can specialize in 'Simple and advanced moulds' for bamboo craft!

5. Making Bamboo craft Competitive and Viable

Larger markets in Bamboo craft are becoming a reality! Companies like 'IKEA' are ready to procure large number of Indian made bamboo craft products. Lack of knowledge

of moulds, jigs and fixtures becomes a hindrance in these situations. Trainers need to have enough knowledge of type of moulds , cost of moulds and viability for a given number of production. Bamboo Trainers need to acquire sufficient knowledge to seek the assistance of specialized mould designers and developers! An eco-system to support bamboo craft production clusters also need to evolve for an effective functioning of Trainer/producers.

It is important to learn the use of simple moulds and basic principles but also to conceive moulds with complex features for increased production rates. So far, moulds have been designed keeping small craft entrepreneurs with batch productions in mind.

For larger production with Quality, Moulds need to be designed with quick fixing clamps, ejector mechanisms, etc. They also need to be designed in materials like Metal, Rubber, Plastics which can be made using techniques like CNC machining, laser cutting, rapid proto typing, die-casting, etc., Craft Trainers need to be trained to understand and use such moulds! New training materials for designerly way of learning needs to be developed.
