

# Product Design and Development for Autism Affected

Project II

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## Getting Started...

I visited Shraddha for the project and their working caught my interest. Their work methodology is as follows:

- Flexible methods developed that involves intense training.
- Autistic Adults have their own sense of the environment
- Staff works with them on one to one basis
- Their aim is to slowly help them develop on their own.

## Main Activities



Pasting



Pasting and arranging



Beading



Stamping



Folding



Coloring

## Products at Shraddha



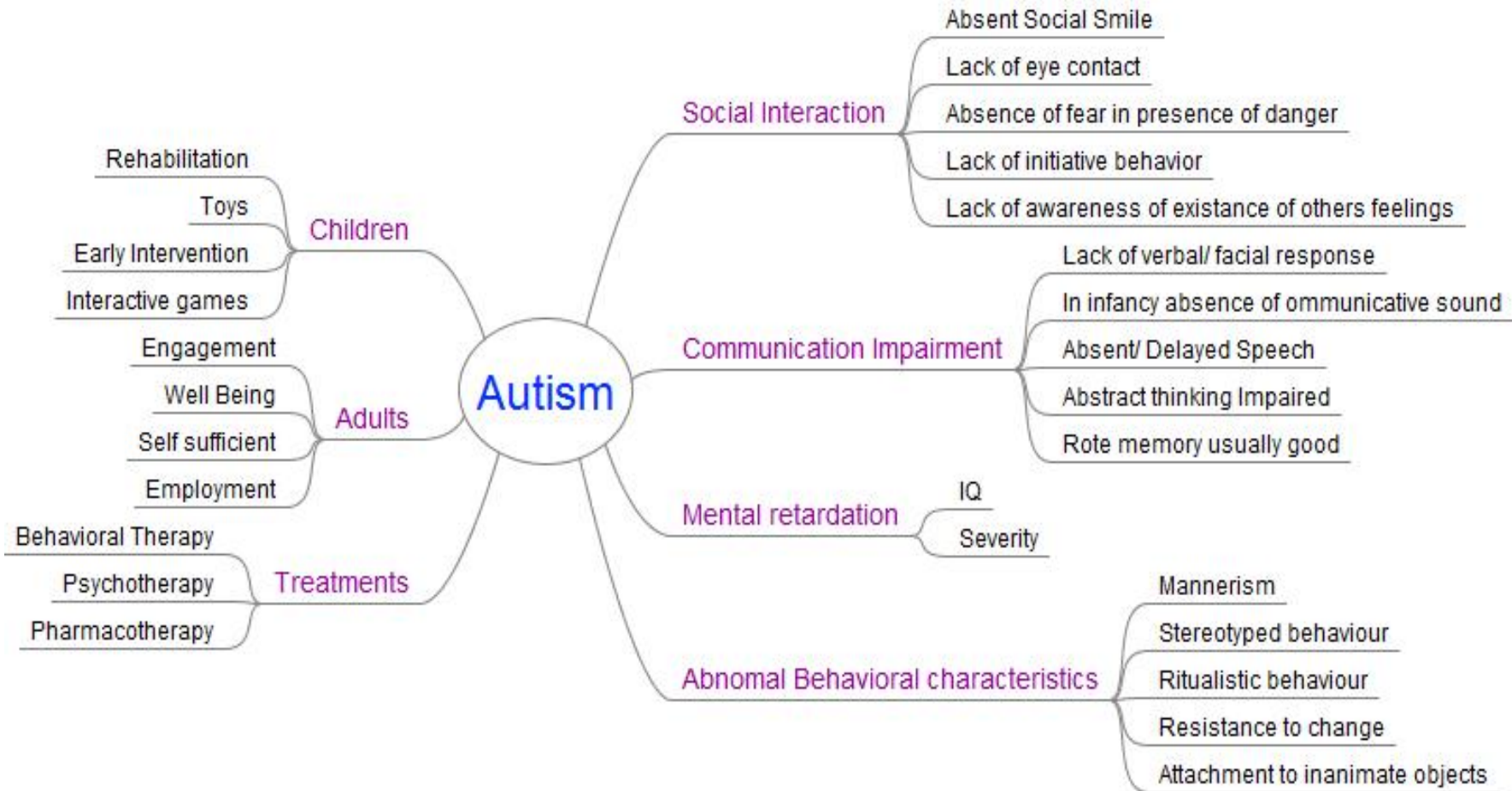
Decoration  
Celebration  
Embellishment  
Ornamentation

## Inferences

- **Structured tasks**
- **Short activities** with **predictable** end products
- **No usage** of cutting tools and complex processes.
- **Positioning** of product in the market.
- **Resistant** to slightest change in the environment.

## Discussion

- Aspects related to Shraddha and Autism.
- How is work in Shraddha helping the Autistic Adults?
- Design Intervention.



## Finalizing the Topic

Based on the observations and discussions following things came to My mind:

- Based on therapy to **deal with common issues** of an autistic person.
- To **engage** them into some **meaningful activity** which will indirectly act as a therapy.

*First topic required a lot medical research and understanding, so I selected the second topic which has scope for creativity and also will have innovative ways for meaningful engagement.*



## Final Topic

*Product design and development for autism affected which will keep them engaged in some meaningful activity.*

## Design Scope

- Designing simple handcrafted products that will suit the abilities.
- Designing tools and jigs for products.
- Designing a product that will involve assembly line.

## Design Brief

Integrated Approach for Design and Development of Hand crafted products for Production by Autistic Adults.

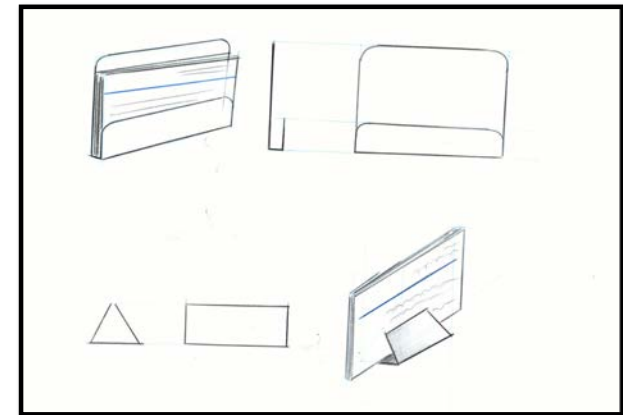
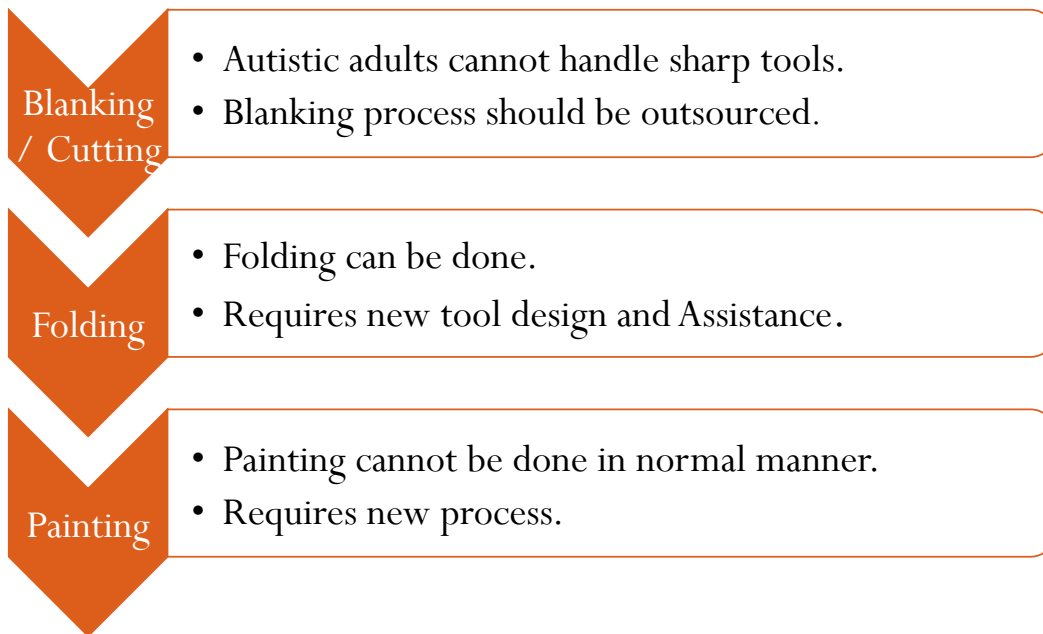
- To keep them **engaged**.
- **Exploring capabilities** they have.
- Products **form and aesthetics** which will be majorly influenced by their **capabilities**
- Material Exploration based **on what they can handle**.
- This will indirectly help in their **cognitive development**.

## Design Directions

- No **mass manufacturing and complex processes.**
- **Cannot handle sharp or cutting tools.**
- Production process should be simple based on **what they can do.**
- Product should have more **emotional and aesthetic value.**
- Material used should be **readily available.**

# Idea 1: Sheet Metal Products

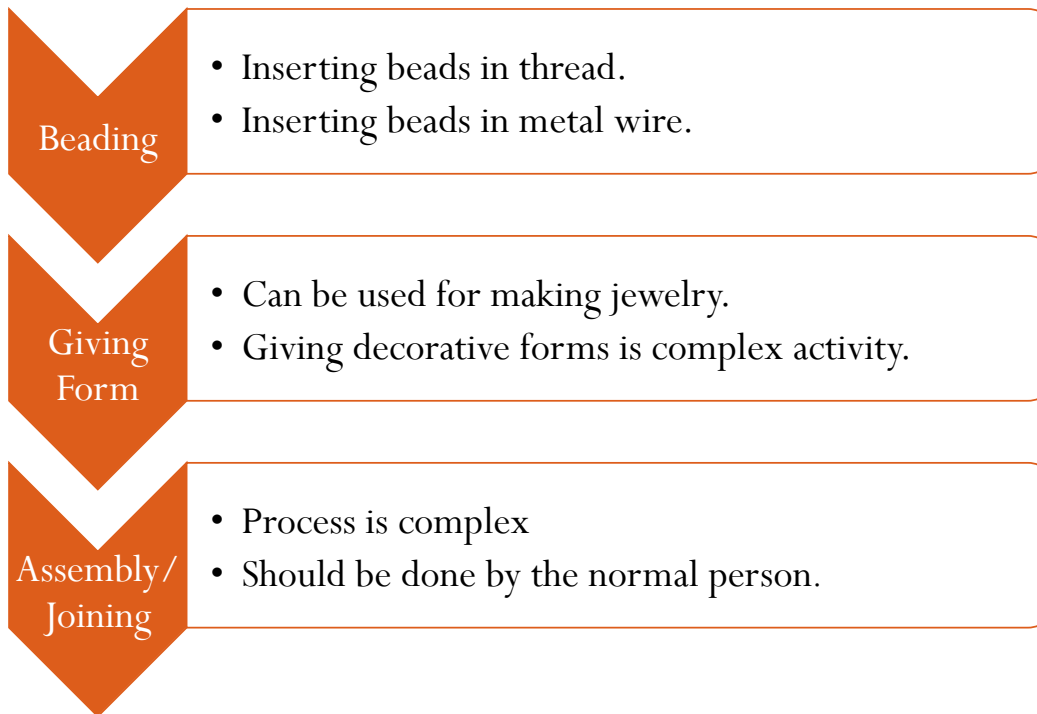
Following is the process flow:



Visiting Card Holder

## Idea 2: Beading

Following will be the process for making Products with beads:



Keychain

## Idea 3 : Abstract Art

Following will be the process for making Abstract Art:

Geometric  
Shapes

- Making of geometric shapes is complex.
- Process should be outsourced.

Arranging and  
joining

- This process will involve abstract art and creativity.
- Joining is complex.



Abstract Animal Form

## Idea 4 : Wire Products

Following will be the process for making Wire Products:

Bending of  
Wire

- Bending of wire is a complex process and also involves making of 2D and 3D forms.
- Tool is required for bending.

Joining

- The complexity of joining process depends on the material used.
- They cannot do complex processes like welding.

Painting

- Painting cannot be done normally. Process like powder coating can be outsourced.
- Painting process needs innovation.



Decorative Wire Forms



## Idea Evaluation

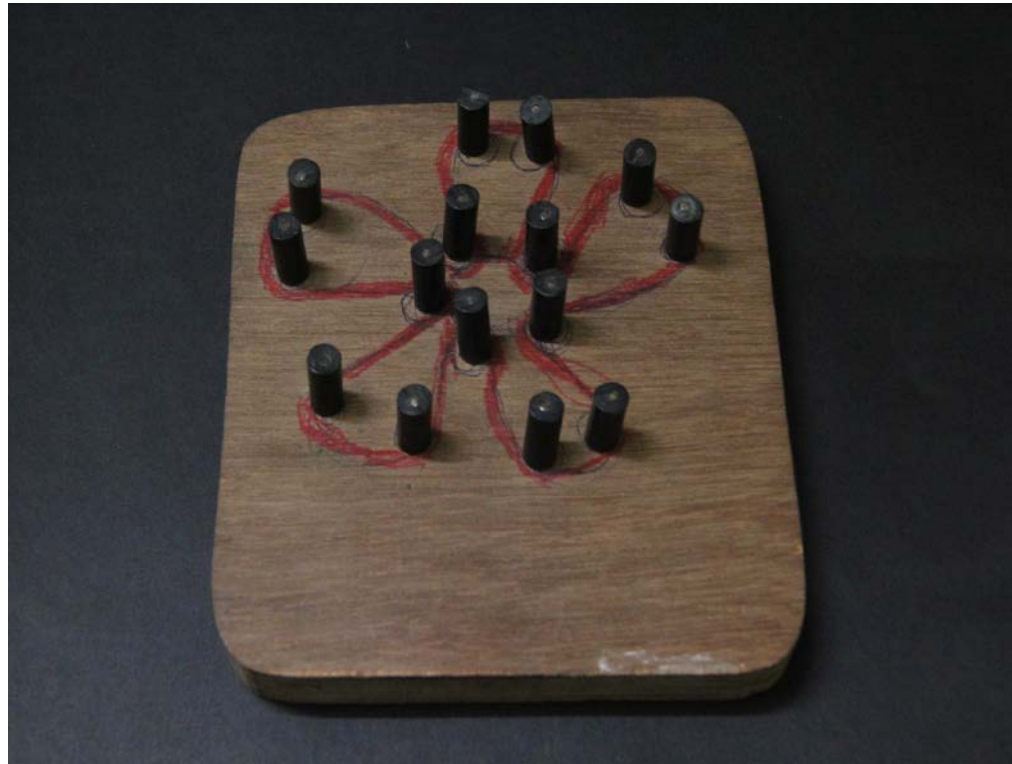
- **Sheet Metal Products** : only bending coloring can be done by Autistic adults and also there is not much scope for decoration.
- **Bead Products**: Varied sizes and shapes of the bead helps them in their decision making ability.
- **Abstract Art**: making of basic shapes should be outsourced only joining and arranging can be done by autistic adults. Joining is a complex process.
- **Wire Products**: will open new market for them. Bending can be guided by jig.

*Based on the Evaluation Beading and Wire products were taken forward.*

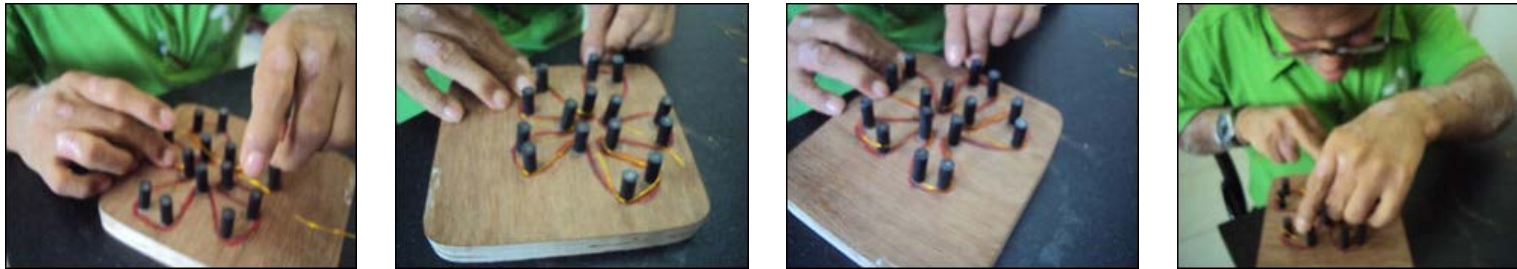
## Discussion

- Use of Wire with Beads.
- Use of Moulds/ Jigs.
- Joining . How Joining can be Creative?
- Will they be able to do it?

## Wire Bending Jig



## Idea Evaluation for Wire Products



An autistic adult using the jig to make a wire product

- The time required to do the activity was dependent on the functionality of the autistic adult.
- Difficult to understand the path, but can do it as they have good rote memory.
- Some high functioning autistic adults were able to do it quickly.
- They liked the activity as they can see results immediately.

## Idea Evaluation for Bead Products



An autistic adult doing beading activity

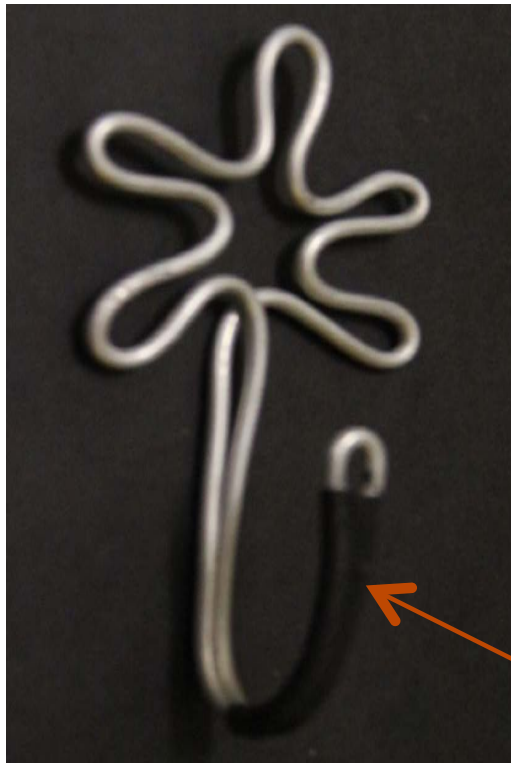
- Use of different colors and change in sequence was difficult for some adults to adapt.
- Depends on the functionality.
- Some adults can do very fine beading and can use different colors and shapes of beads.

## Concepts:

The following strategy was used to make the products:

- Making a single entity
- Developing products using multiple entities.
- Beautifying
- Use of other materials

## Concept Direction 1:



- Flower is made in the wire bending Jig.
- Two ends of wire are joint with the help of shrink sleeve.
- Then the ends are bent to form a hook.

*When number of flowers are made one can creatively arrange to form a product.*

## Concept Direction 1:



- For coloring, Flowers can be outsourced for powder coating.
- If Autistic adults have to do it then we can color it by Dipping
- But dipping may not give the required finish.



## Concept Direction 1:



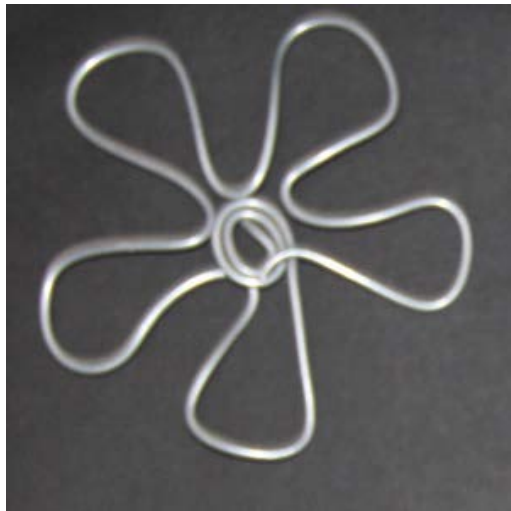
Key Chain Holder

- Key Chain Holders with different arrangements can be made.

### Problems:

- The use of Shrink sleeve is aesthetically not good.
- Joining the flowers and the base is complex.

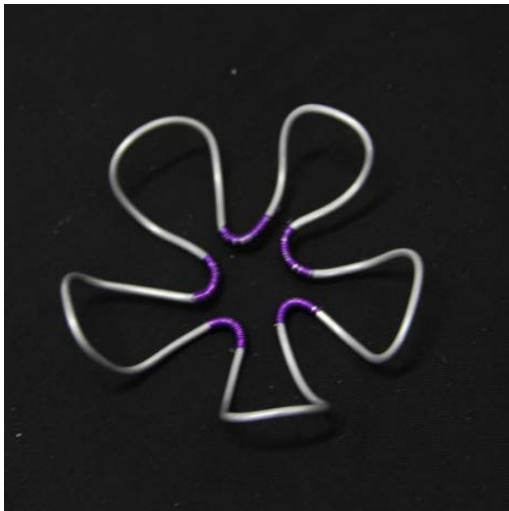
## Concept Direction 2:



- Flower is made in the wire bending Jig.
- Two ends of wire can be creatively treated.

*When number of flowers are made one can creatively arrange to form a product.*

## Concept Direction 2:



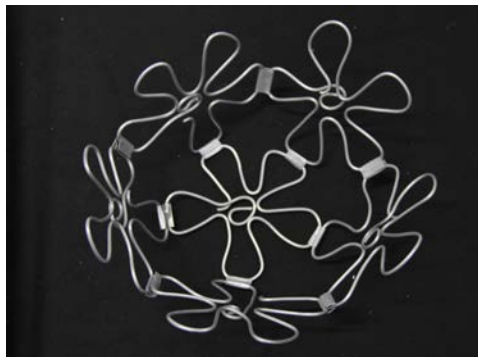
- Coiling technique can be used for joining the ends of the flower.
- Also Flower can be given 3D form.

## Concept Direction 2:



- For coloring, Flowers can be outsourced for powder coating.
- If Autistic adults have to do it then we can color it by Dipping
- But dipping may not give the required finish.

## Concept Direction 2:

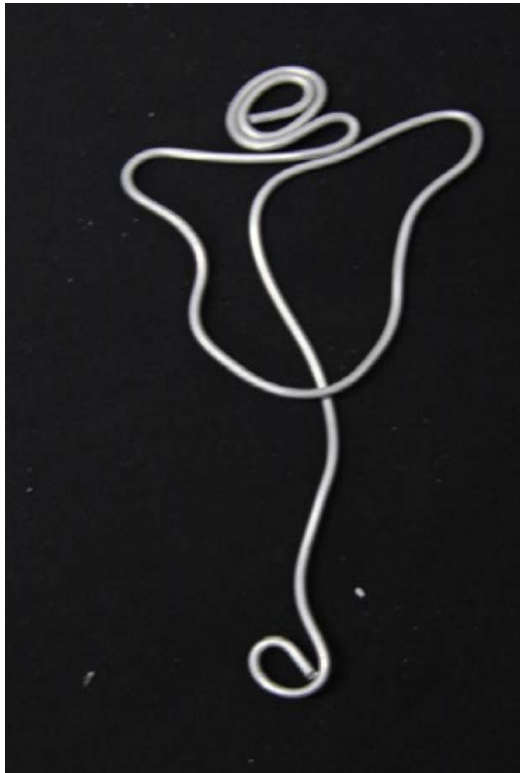


- The Flowers can be arranged to form 2D or 3D products.
- A clip can be used to join the two flowers.

### Problems:

- Joining is the Complex process as aluminum cannot be welded, also Autistic adults cannot do welding.
- Structure is not sturdy.

## Concept Direction 3



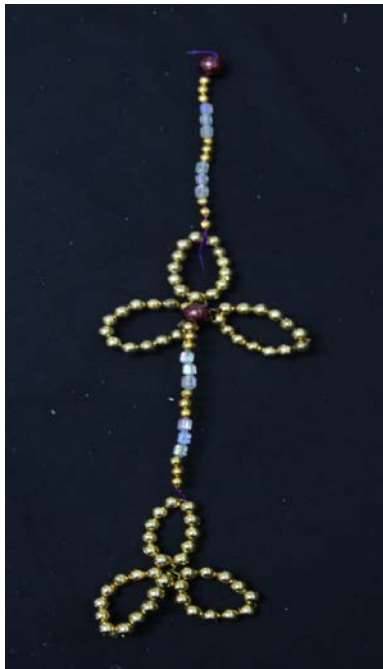
- Flower is made in the wire bending Jig.
- Different shapes can similarly be made.
- Thus this inventory of shapes can be creatively pasted to make Theme based frames.
- Also one can use other materials in combination with wire.

## Concept Direction 3



- Making of frames can be outsourced.
- Can use other materials like paper for decoration.
- Coloring can be done with the use of templates.

## Concept Direction 4:



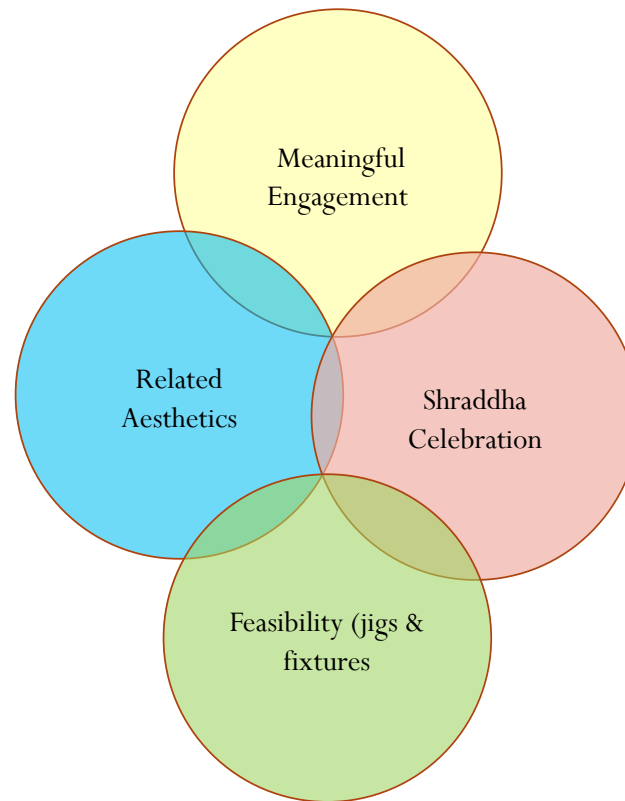
- Beading is the process which they already do.
- Beading with wire gives opportunity to developing decorative products.

Problem:

- Developing forms with beading is complex.



# Discussion



## Final Concept

**Theme based Frames will be my Final concept along with the Jig required for making it because of following points:**

1. It looks good and also easy to make.
2. Looks contemporary.
3. A wall unit was preferred by many because of the big space constraint.
4. Wire 3d products and Bead Products have complex joinery. It was difficult to achieve good finishing.
5. Most appropriate considering the doability

## Approach

- Creating inventory of Wire forms.
- Making decorative frames using the inventory.
- Treatment of Joints.
- Use of stickers and hand painted papers.





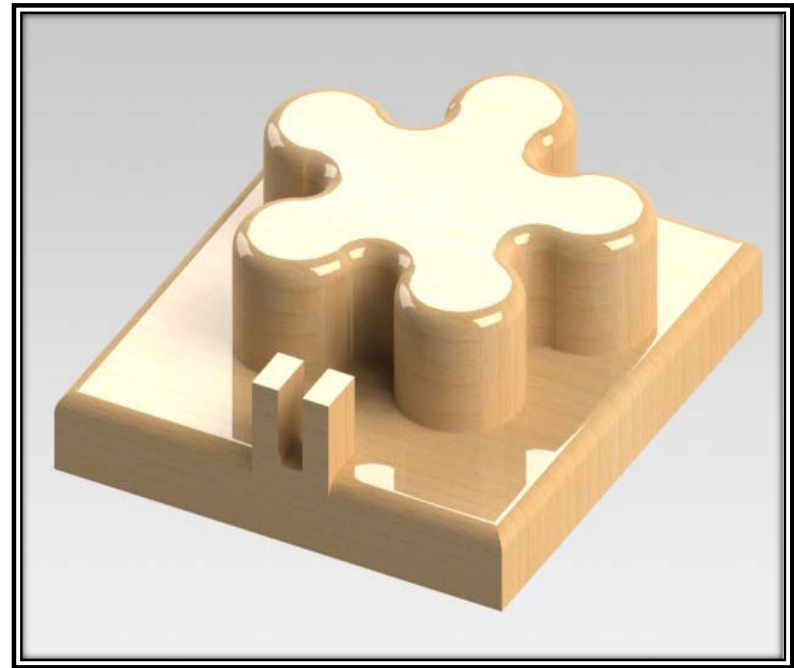
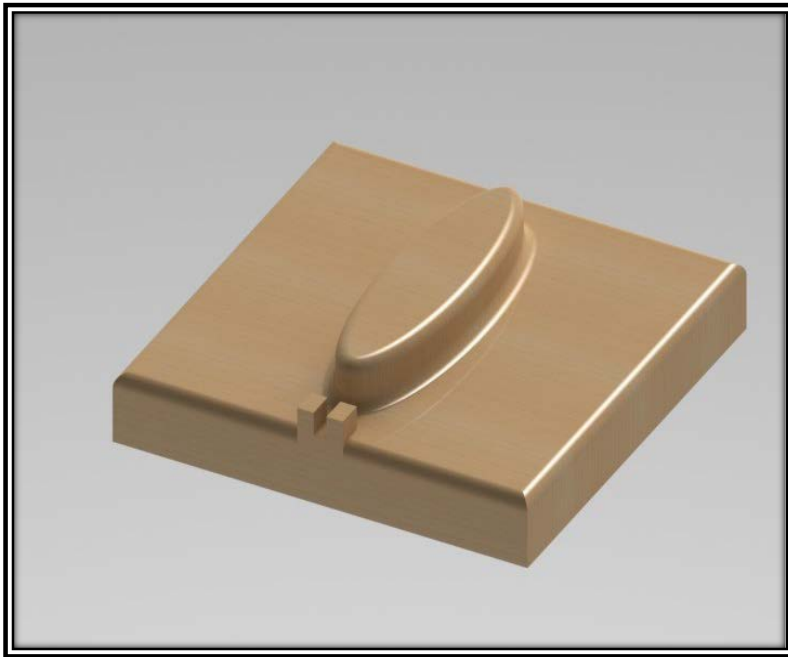


# Shraddha

Autistic to Artistic



# Jigs





## Activity Chart:



Bend the two ends



Bend the wire at its  
middle portion



make the shape of  
middle petal.

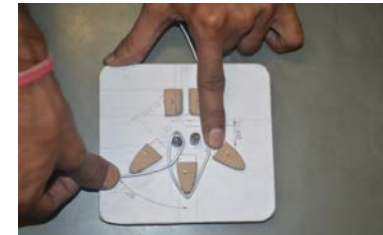
## Activity Chart:



Fix the wire on the next jig with the help of middle petal.



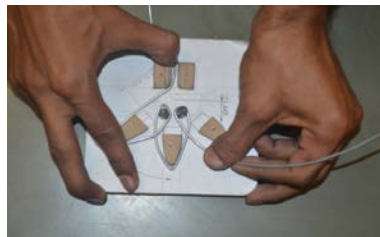
Take one end bend it along the pin.



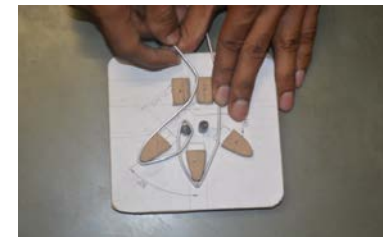
Bend it along the side petal.



Remove the finished flower.



Bend it along the straight block.



Follow the same for the other end.

## User testing and feedback

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Involved the following activities:

Wire Bending

Pasting

Coloring



Thank You

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