

Presentation title:**A conceptual design of immersive learning system in virtual reality for learning art and design****Presentation Type:****Poster presentation****Authors:****Sumana Som¹, Kim Vincas², Deepak John Mathew³****Abstract:**

Art and design are increasingly important in Indian school curricula. But there is no specific pedagogy to teach this subject. Different schools follow different methodologies to teach art. For instance, some schools follow traditional Indian and western painting, clay modelling and art history, on the other hand, few schools follow only craft making technique and copying traditional folk art such as Madhubani painting, Warli painting and Kalamezhuthu painting. Although, Art education in India in 2010 reported clearly that it is a significant tool for equipping students to simulate cognitive development and encourage innovative and creative thinking. The report also stated that 'Arts in education' enhance multiple intelligence. And it also emphasizes on using electronic media aids to teach this subject. Nevertheless, the majority of the schools are giving less importance to teach art and they do not take the initiative to develop better pedagogy. Throughout the observation on the activity of art and design activity at school, it is very significant that teaching art and design with the aid of technology at school level is not so easy.

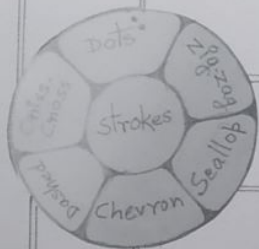
However, education pedagogy in recent decades has struggled to develop new methods and tools for better learning. Virtual Reality (VR) is one of the major solutions of technology-driven pedagogy. It provides a super real, simulation-based environment for teaching and training. It allows to visualize abstract content, provide information with clarity, and allow students to actively participate in the learning environment. On the other hand, a playful interactive teaching design can enhance learning motivation, engage more deeply and inspire the student to learn. In the current scenario of school education, VR based pedagogy can assist the student to improve their learning. In this changing condition, the pedagogy of art and design requires new tools and methodology.

In this poster, the researcher would like to introduce a concept of a teaching-learning Design with the aid of Virtual Reality technology for the 6th-grade student to learn art and design. This immersive VR based environment helps the student learn better by experiencing abstract points in a 3D environment. Bodily engagement in free space will give them playful engagement with the topic and they will be able to explore it from a different point of view. The teacher can explain the topic in many possible ways and make the student understand easily.

Here, the researcher has chosen a topic on elements of art, from NCERT Art education syllabus. During this phase, the student will learn to observe and draw simple objects. They began to understand of contour line, shape, form, the difference between 2D and 3D objects and perspective. On the other hand, elements of design are also quite similar to art, such as line, texture, shape, form, point, space and so on. The researcher, therefore,

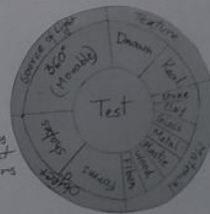
combines this topic as a fundamental element of art and design (A one-unit study). In the poster, the researcher will illustrate the process of content design with the detail of the layout to VR prototyping. To create the virtual reality 3D environment, the researcher creates 3D models by using Maya, Sculpt and Substance Painter software and to enable these 3D objects with various interaction researcher using unity platform.

Key words: Art and design syllabus, Virtual Reality, interaction design.



'Create New' key features help to create new design/artefact

'Test' key features allow to experiment with various factors



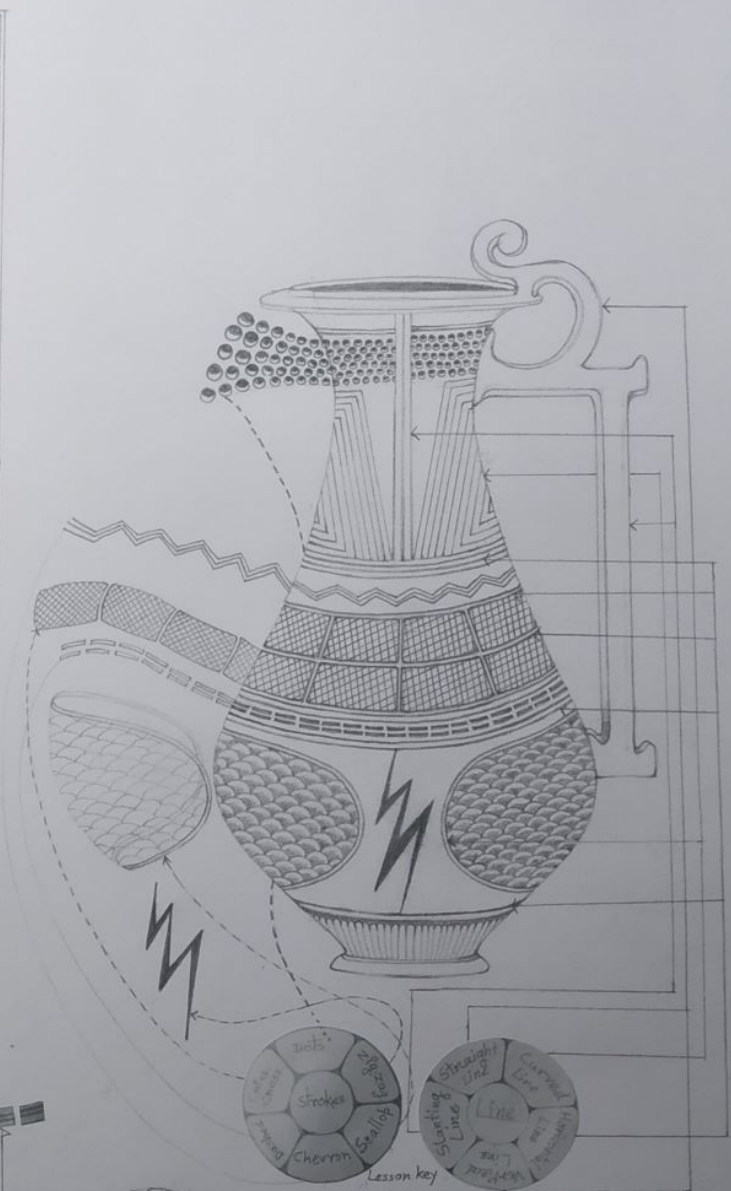
FUNCTION IN VR

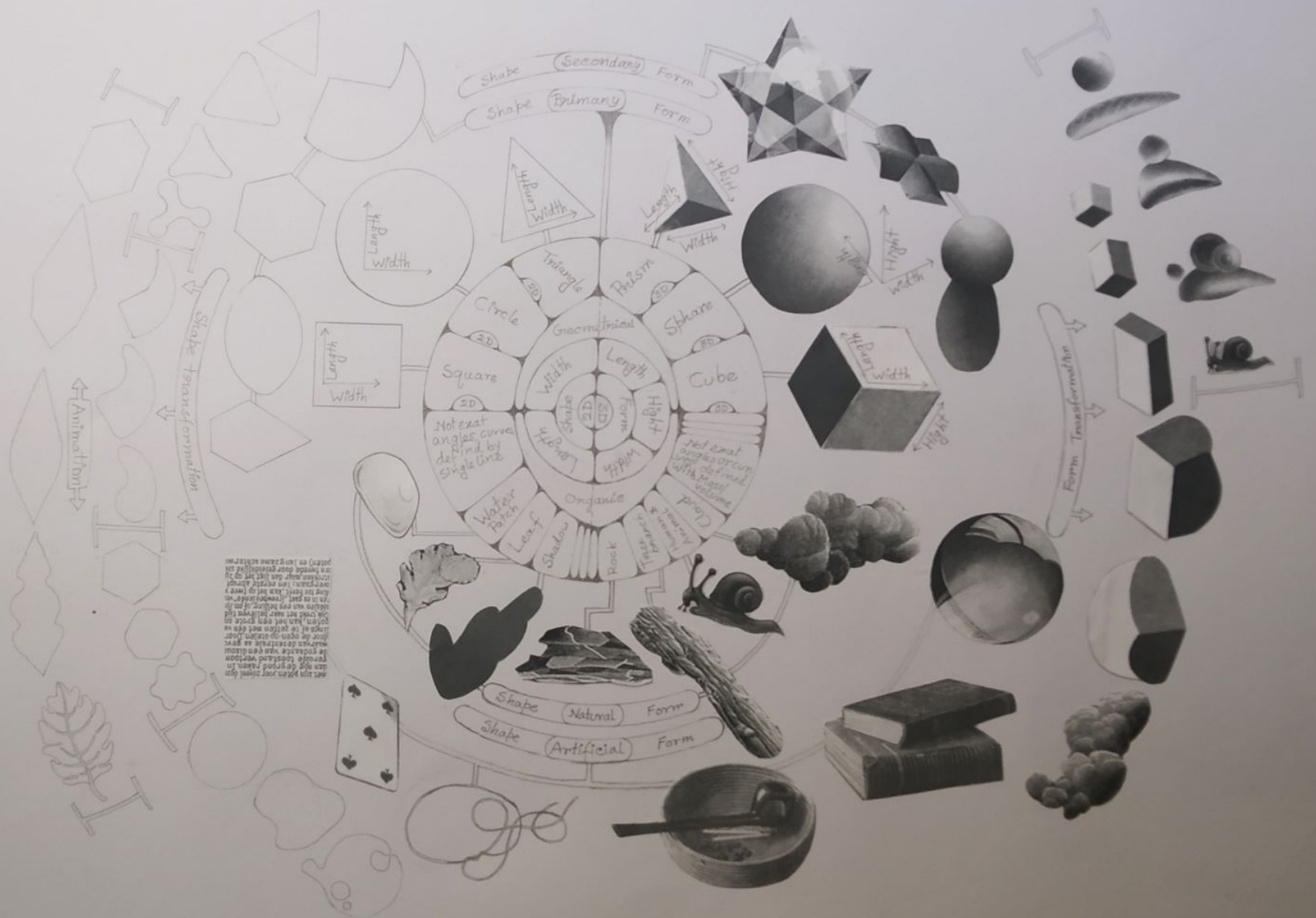
'Click' the button parts of the object will be come out.

Each parts of the object can be moveable and it can be rearrange.

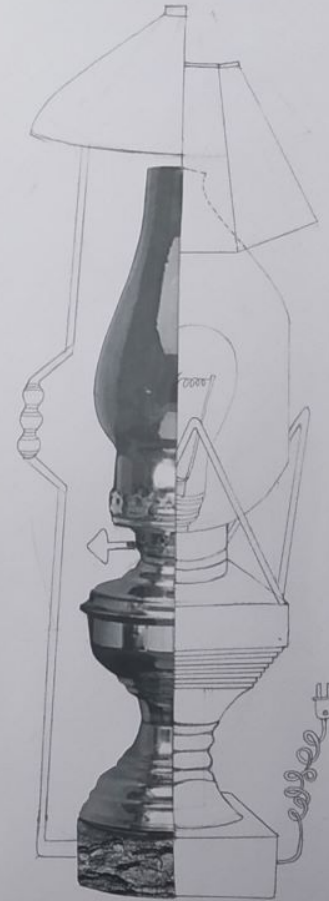
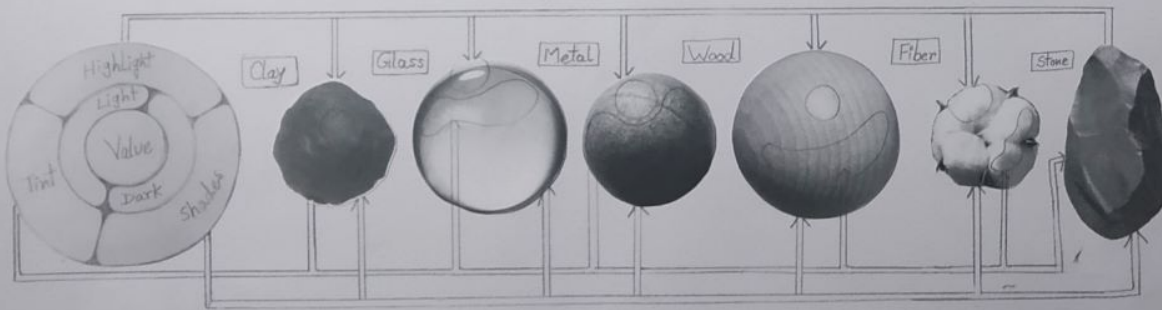
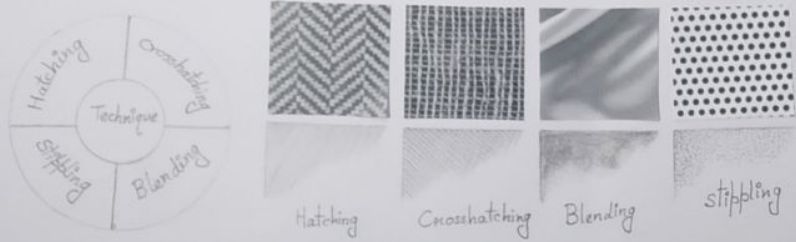
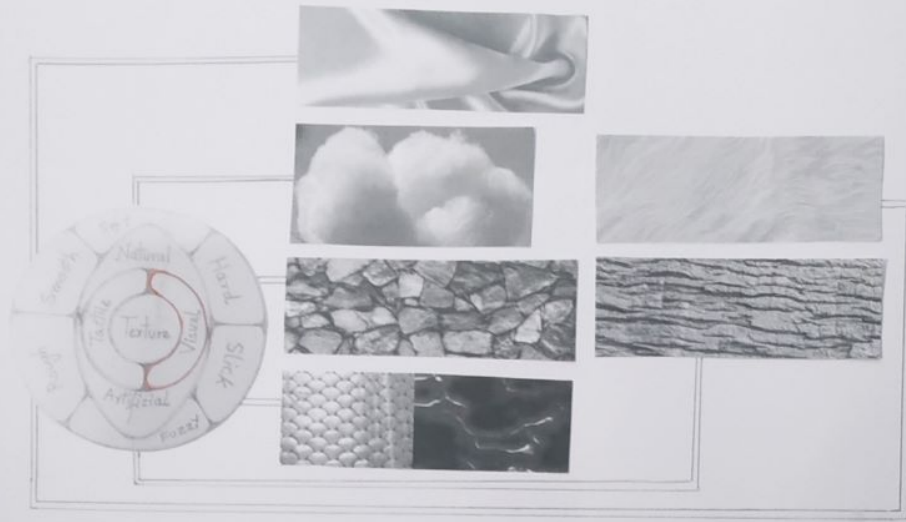
Object shape can be change (student can take the clone of the object and they can make new form)

Each strokes are separately useable and can be create new stroke.





Das ist ein sehr interessantes Diagramm, das die verschiedenen Arten von Formen zeigt. Es ist eine Art Mind Map, die die Beziehungen zwischen verschiedenen Formen und den Prozessen der Transformation zeigt. Die Formen sind in Primäre und Sekundäre unterteilt, und weiter in Künstliche und Natürliche. Die Transformationen sind als 'Shape Transformation' und 'Form Transformation' beschriftet. Das Diagramm enthält viele Beispiele für Formen, wie Geometrische Formen, Organische Formen, Künstliche Formen und Natürliche Formen. Es zeigt auch die Dimensionen der Formen (Länge, Breite, Höhe, Tiefe) und die Prozesse der Transformation. Das Diagramm ist sehr detailliert und zeigt die Vielfalt der Formen in der Natur und in der Kunst.



- FUNCTION VR**
- Click the button parts of the object will be come out.
 - Each parts of the object can be movable and it can be rearrange it.
 - Object shape can be change/student can click the clone of the object and they can make new form.
 - Each strokes are separately visible and can be create a new strokes.
 - Source of light can be changed.
 - They can select the material.
 - Object form can be change.
 - Value will be change according to light source and texture will change with material.

