

## An Exploration of Innovative Textile Construction With An integration of Traditional Dumbara Weaving and Contemporary Fashion

**Abstract** – The traditional craftsmanship of Dumbara Rata Kalala weaving is one of the most iconic craft in Sri Lanka which is recently named as a UNESCO heritage craft. A rising number of indigenous crafts worldwide are now in danger of becoming extinct or endangered. The next steps of heritage craft is to understand the learning process and explore the intersects of how traditional craft and new innovative material processes can be combine for the modern design context. Discovering history and practice of Dumbara weaving with existing literature and community lead how to revitalized traditional Dumbara weaving. The uniqueness of Dumbara weaving is fabric structure of extra weft or supplementary weft patterning which uses two wefts for ground fabric and design motif and weaving a direct garment on treadle loom. The technique is exclusive to the dumbara loom with two hedles and two foot treadles and manual shuttle passing process. The possibilities of changing the structure and the fabric quality compared with 3D concepts of contemporary fashion based on the adaptability to the body while supporting body movements. The key finding of this experiment project is the 3D surface manipulation of Dumbara weaving using extra warp and weft elastic yarns. To revitalized learning outcome on dynamic body experiment framework identified three body placement; upper hand and leg , upper body along with hands and torso. Based on this body placements body movement range were identified and it was achieved through the double cloth weaving process. To gain vertical movement researcher used horizontal peaks with extra elastic warp technique. To gain horizontal movement researcher used vertical peaks with extra weft elastic technique. The technical knowledge and experiments were further developed based on design elements; colour, line, value, space, shape, form and texture. The learning outcome of 2D weaving technique to a 3D textured garment construction on loom implements with square garment silhouettes to create new knowledge on heritage craft through design intervention.

**Keywords:** Dumbara Weaving, Extra Weft Weaving, 3D Surface Development, Body Adaptability