

New demands on materials design education: Waste recovery and coletivo art

Keywords

Maker process, Materials experimentation, Practice-led methodology, Paper recycle, Tiles.

One of the contemporary challenges for research and practice in design and materials is the ability to associate technical information on properties and processing of materials with creative activities and applications. Currently, there is a return to artisanal practices and processes, in which there is a continuous dialogue between the designer, the material, and the project. This study demonstrates the relevance of practice-oriented design processes in the construction of knowledge. In an experience facilitated through post-consumer paper recycling workshops with students from the Bachelor of Design course at the State University of Pará (Brazil), ways of producing recycled paper tiles were investigated and the effects of this activity were discussed. The context of the activity is based on theoretical studies in materials and design, with a methodological approach focused on practical experiments in a research and teaching scenario. The research is classified as exploratory. The methodology adopted is based on the experimental method, considering the testing of new compositions and the response of materials to the processes. The recycling process consists of preparing post-consumer paper waste, producing cellulose pulp, and making paper tiles for subsequent painting. The tile alternative was inspired by the architecture of Belém (Pará - Brazil), bringing affective memories and a reinterpretation. In the methodological approach, the residue has its sensory and physical characteristics experienced after paper shredding. The homogeneity of the pulp is crucial for a good surface finish after drying. In the pulp molding step,

after tests and research in the literature, silicone was selected as the most suitable material for the mold, also the possibility to form reliefs on the tile surface. During the workshops, each participant had the opportunity to interact with the material, from which the sensory analyzes are verbalized and discussed in the group, looking for alternatives for applications. In the course of the creation of the tiles, the participants expressed their feelings, references, and interests through painting. Different colors and textures worked during the activity give the artifact the characteristic of those who manipulate it. The activity provided a network of contacts and meetings in which students had the opportunity to reflect on waste disposal. One of the contributions to education in materials design is the possibility of dealing with awareness and critical concepts. Participants shared their experiences and stories related to the themes presented, as well as perspectives on sustainability. The workshop enabled the construction of new meanings and experiences with the production of products through the playful aspects of handcrafting, in addition to exemplifying the need to involve the understanding of sensory qualities in the design process. At the end of the activity, pieces with potential for indoor environments were obtained and a permanent art installation was designed at the State University of Pará. Through contemplation, the audience used touch to interact with the pieces, enhance the aesthetics and investigate the individuality of paper tiles. The installation transformed the space into a reference point, a place for meetings and interactions.