A Hands-On Approach for Exploring Textiles and Daylight in Architecture

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RESEARCH QUESTION:
How can the making of models make architecture students explore and develop architectural concepts that include textiles?

METHOD OF INQUIRY:
In two workshops at the University of Technology Sydney (UTS), textiles’ lighting and spatial possibilities were explored through the making of three-dimensional architectural models by hand. The students, all ‘textile novices’ experimented with two tools for three-dimensional sketching consisting of model making materials. This approach is supported by earlier work by Gutierrez and Popovic (2005) exploring small-scale textile membranes in similar workshops.


WORKSHOP 1
14 SECOND YEAR ARCHITECTURE STUDENTS
4 GROUPS OF 3 OR 4 STUDENTS
EXTERIOR BUILDING SKIN

- Cardboard “corner”
- Wire
- Textile
- Scissors
- Cutters
- Stapler

OPEN
Make a mock-up of a building skin for the UTS Tower Building

PARTICIPATION IN DESIGN CRITIQUE

MATERIALIZE
ILLUSTRATE
DEVELOP

RESULT

CONTENT

CONCLUSIONS

Three material strategies were indentified: the materials were either used to materialize, to illustrate or to develop a concept. The tool’s openness seemed to be a limitation, resulting in a somewhat shallow exploration of textiles’ effect on daylight regulation.

We argue that this type of tangible modelling makes it more likely that textiles will be used in the final design and contributes to bridging the gap between the model and the final building.

WORKSHOP 2
11 THIRD AND FOURTH YEAR SPATIAL DESIGN STUDENTS
4 GROUPS OF 2, 3 OR 4 STUDENTS
TEXTILES FOR INTERIOR SPACES

- Cardboard “room”
- Foamboard in ceiling and on floor
- Textile
- Pins
- Scissors

TASK

CONTRAI NTS AND CONTROLLED PROGRESSION
Included a cardboard ‘room’, a scenario, three pieces of translucent textile and restrictions as to what to do with these materials. The restrictions were gradually loosened.

PROCESS

RESULT

FOLLOW-UP

INTERVIEW WITH TEACHER AND ARCHITECT NICOLE GARDNER

DOCUMENTATION

VIDEO AND PHOTOGRAPHS

CONCLUSIONS

Contrasting workshop 1’s openness, the restrictions in workshop 2 resulted in better and more solutions showing a deeper exploration of textiles’ possibilities for daylight regulation.

The interviewed architect argued that the tools would be suitable in professional practice where they could be used early in the design process, as a way of literally sketching with textiles to expand one’s material repertoire.