

Green Models in Classroom

By Camilo A. Angulo

Design teachers must spread pedagogical processes for a green world to reduce the impact of our academic exercises on the local environment.



In the past 20 years, Schools of Arts, Design and Architecture used indiscriminately «new» materials to construct models to socialize ideas of students in class, which have a particularly very short shelf life. After students obtain feedback and an evaluation grade, the models just

overflow garbage cans in the universities, contributing to 80% of non-recycled garbage that accumulates in most Latin American cities.¹

Because of that, the urgent need to reduce the consumption patterns in the academy arises, enriching environments with alternative teaching design on new learning facilitators,² which incorporates the traditional methodologies of design,³ but in this case including an additional feature in the project design stage that corresponds to the research of materials that can be reused, and a new final stage which suggests the possible scenarios of recycling the materials after they are used for the academics process. Here are some tips to structure a green design proposal:

- Information Phase: to find the need.
- Analytical Phase: determine what exists, identify sub-problems, and then prioritize.
- Project phase: to create different types of solutions, make decisions and identify potential benefits and look for materials that can be reused.
- Resolution Phase: in order to checks, applications, costs.
- Recycling Phase: to think about the future of the materials used in the project.

As you can see, the above proposal favors projects with materials that were classified as waste, giving a new meaning to them, and helping not to compromise them on the future demand for these inputs,⁴ because models for academic purpose should be only a part of life-cycle of materials, not their end.

During the practice of education, physical models are a teaching tool to represent ideas that show some assumptions expressed by the students in their speeches,⁵ but to achieve this goal it is unnecessary to waste such a quantity of natural resources and energy. That's one of the main reasons why it is recommended that the exercises formulated by teachers in class must have the concept of «green models». Those kinds of exercises are a great opportunity to develop a special kind of thinking in the students when they face a restricted scenario and they need to take some innovative decisions in order to reach a higher level of cognitive skills.⁶ And, consequently, the students design new eco-friendly processes for the production of their models in classroom.

Under the formative nature of higher education, the exploration of these possibilities, and the development of alternative work in small groups for a short time in the right context, can sensitize students about the potential of an idea that relates with the invention above having the resources to do it and the difference that makes a creative mind seeking new opportunities in order for these ones can be replicated in the future, while still working.

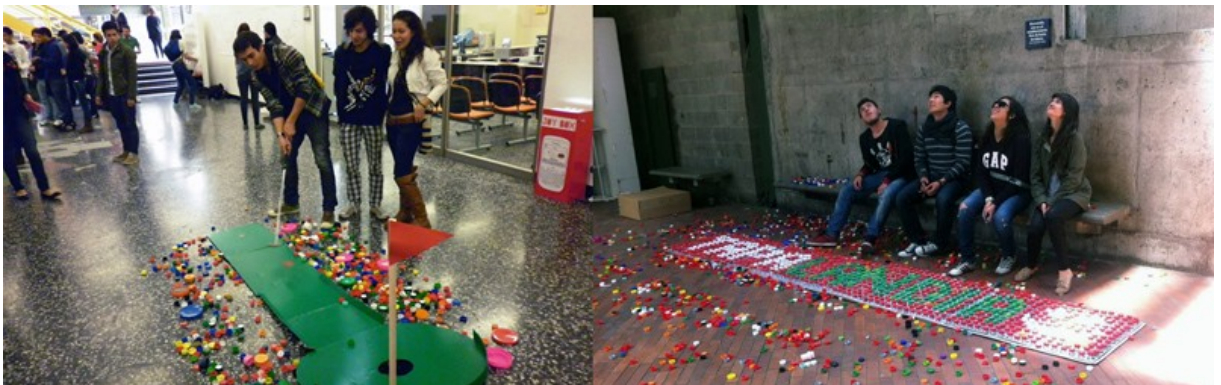


Students of the course *Theory of Design*. Photo: Faculty Juan José Arango, UJTL, 2012.

Eco models

□Based on this environmental awareness, material academic exercises must be built □ with reusable materials. That is the case of a workshop conducted by the Industrial Design Program for the Jorge Tadeo Lozano University of Colombia.⁷ The models were constructed with plastic bottle caps and some types of cardboard to work three concepts: object, context and interaction. After reaching the goals, people involved in this project such as students, faculty and staff of the university themselves separated most of the material, to donate it to a foundation to use these resources to help children affected by cancer.

At the end of the exercise there is, first of all a reflection on the role that we play from the academy as consumers in the life cycle of some non-renewable resources, and secondly, the responsibility of future generations of students, depending on how long we delay in implementing these determinations, they will be able to have or not the opportunity to experience a learning process with those basic materials that remain after previous uses.



Theoretical and practical workshop exercises. Photo: Faculty Catalina Quijano, Camilo Angulo, UJTL, 2012.

Finally, the appropriation of concepts like «green models» would be an important step towards sustainable academic processes, but without forget that in the end, such proposals are a great excuse to gather common goals inside an academic community, and to accomplish, this way, a conscious effort to fulfill the social and environmental commitments with future generations of artists, designers and architects.

Published on 06/08/2013

-
1. Mexican site [Biodegradable](#) (2012).
 2. FORERO, S.; Angulo, C.; Parga, H. (2010). IV Encuentro internacional de investigación en diseño: «Interacciones significativas de aula para propiciar el desarrollo de las estructuras mentales que favorecen la invención en diseño industrial». [IV International design research: Significant interactions in classroom to foster the development of mental structures that favor industrial design invention]. P. 45-47. ICESI University, Colombia.
 3. BÚRDEK, B. (1994). «□Diseño. Historia, teoría y práctica del diseño industrial». [Design, History, Theory and Practice of Industrial Design], G. Gili.
 4. CAPUZ, S.; Gómez, T. & otros. (2004). Ecodesign: «Ingeniería del ciclo de vida para el desarrollo de productos sostenibles». [Life Cycle Engineering for Sustainable Product Development]. Universidad Politécnica de Valencia. Alfaomega, S. A. de C. V. México.
 5. VÁSQUEZ, F. (2000). «Oficio de Maestro». [Teacher duties]. Javeriana University, Education Faculty, Colombia.
 6. FINKE, A.; Ward, Thomas B.; Smith, Steven M. (1995). «Creativity and the Mind: discovering the genius within». New York: Plenum Press.
 7. WORKSHOP (2012). «□Tapalandia zona de juegos: componentes de objeto, interacción y contexto. Asignatura Teoría de Diseño□□». [Tapalandia: playground object, interaction and context. Design Theory, Industrial Design Program]. Jorge Tadeo Lozano University, Colombia.

Other Sources:

- EL TIEMPO (2012). «Río + 20 por un mundo verde, limpio y próspero». [Río + 20 for a world green, clean and prosperous]. Sunday, June 17. Colombia.□
- RODRÍGUEZ, N. (2011). «□Re-utilizar con imaginación: modelo de acción participativo que permite a población vulnerable la creación de su cultura material a partir de la reutilización». [Re-use of imagination: participatory action model that enables the creation of vulnerable material culture from the reuse]. Jorge Tadeo Lozano University, Colombia.
- Illustration Picture: Tapalandia. Photo: Faculty Juan José Arango. Model Alejandro Pacheco, UJTL, 2012.
- Youtube [Tapalandia](#) (2012)
- Read in [Spanish](#) (2012)



ISSN 1851-5606

<https://foroalfa.org/en/articles/green-models-in-classroom>

