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edited by
Maria Antonia Barucco, Elti Cattaruzza, Rosa Chiesa

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POSTER

Glass-making workshop: fostering new design practices

SOFIA CRETAIO[A], CRISTINA MARINO[A], JOSEAN GARCIA DIAZ[B], PAOLO TAMBORRINI[A,C]

Bringing future designers closer to the professional world requires the right balance of theoretical and practical activities; parallel to the traditional ateliers offered in design schools, some institutions are experimenting with different educational models, such as workshops.
Contaminating, reinterpreting and experimenting are the keywords behind this activity, carried out in the Politecnico di Torino, in which glass has been one of the protagonists as a material with strong socio-cultural connotations. Because of its increasing application in technological fields, glass's artisanal identity is getting weaker and requires a shift of focus from technological innovations to social innovations. Therefore, the week-long workshop "Il soffio di vetro", offers the chance to envision glass as the meeting point between the knowledge of a local glass master and the design-creative skills of students. The experimental approach offered during the workshop enables students to understand the synergy between the glass's aesthetic possibilities and functional constraints. It also helps define a more substantial value of sustainability in the relationship between university and craftsmanship.
The workshop's goal is not to create a perfect final product but to bring students to understand the process and review it in a logic of innovation. It also helps to foster sustainable and creative approaches where the relationship between the designer and the material is direct, personal and supported by the local know-how.

POSTER ONLINE

A Polytechnic of Turin.
B Joga Glass.
C University of Parma.

KEYWORDS: WORKSHOP, GLASS MAKING, EXPERIENTAL LEARNING





Fig. 01 Joga Glass workshop. On the table, combinations of glass rods prepared to be heated and picked-up with the roll-up technique.
Fig. 02 Final modelling of the glass object.

GLASS-MAKING WORKSHOP: FOSTERING NEW DESIGN PRACTICES

Sofia Cretaio (1), Polytechnic of Turin / Cristina Marino (2), Polytechnic of Turin /
Josean Garcia Diaz (3), Joga Glass / Paolo Tamborrini (4), Polytechnic of Turin - University of Parma

WORKSHOP - GLASS MAKING - EXPERIENTIAL LEARNING

ITALY

Introduction
In a future of evolving professions, in which the distinction between physical and digital is fading, the designer's education needs to be enriched with practical activities, so that they are provided with the richness and immediacy that only the experience can produce.

The contribution analyses the role of educational workshops as practices to contaminate, experiment and reinterpret the designing process promoted in the academic field, through the cultural and artisan strength of the glass material.

Workshops as teaching activities
Students' education and training effectiveness for the working path has always been at the centre of the academic debate. Here, besides the theoretical approach, it is important to experiment in specialized laboratories, intended as professional courses, with techniques and skills from the production world (Russo, 2019). However, the design output of these labs, which last only a few months, is often abstract and distant from the technical-operational languages of the working world. For this reason, the workshop model has been integrated into the designer education for several years, combining a collaborative approach and involving actors from outside academia.

The term workshop, which formerly defines "a place where things are done" (Merrian-Webster, 2016), denote a type of collaboration where a group of students acquires new knowledge, improves their skills, and solves sector-specific issues with innovative and creative solutions.

The educational value of glass
Every year, the Polytechnic of Turin organize a workshop panel where particular attention is given to activities that do not only involve companies and startups, but also local realities focused on craftsmanship. The purpose is to allow students to apply their methodologies in processes of sustainable enhancement of local resources (Tamborrini, 2019).

A practical example is the one-week workshop *Il soffio di vetro*, in collaboration with the local laboratory Joga Glass. The lab was born as a creative exhibition space where glass blowing objects are created with the ancient Murano blowing techniques, revisited in a European approach (Joga Glass, 2022). In the lab, the artist is guided by his instinct to transform simple rods of coloured glass into decorative objects, glasses and jewellery. The innovative point of view is not given by the products proposed but by the experimental approach that lies behind it; the transformation of the raw material is triggered by a participatory process with the workshop's participants: not mere observers, but actual designers. From the modelling of their design ideas, to the use of the glass masters' tools, to the realization of their first creation in the furnace. The goal of the workshop is not to create a perfect final product, rather impossible in such a short time, but to bring students to understand the process and review it in a logic of innovation.

Furthermore, the active participation during the workshop allows the participants to immerse themselves in the role of the craftsman and his routine, with all the necessary actions and precautions. Glass, a material as malleable as fragile, requires a total immersion in the actions that take place: the use of certain instruments, the pressure that is applied to the molten matter and the temperatures of the furnace do not allow distractions. Transforming glass enables future designers to understand the synergy between its aesthetic possibilities and functional constraints.

Glass, Design and Sustainable Innovation
The material value of glass has persisted for centuries at a functional and decorative level. Like many raw materials, however, its industrialization has opened the door to several applications with a greater technological impact, weakening its artisan identity. The Italian territory can count on a strong connotation of glass manufacturing, but this is not enough in making the material inert to the pressure exerted by technical-productive changes. To decline the craftsman's work to the future, beyond any form of nostalgia of the past, it is necessary to abandon designers' obsession for technological innovation to focus on the social dimension of innovation (Busacca & Paladini, 2019).

Thinking of the innovation produced by the artisan enterprise as a result of social interaction based on open collaboration between artisans, communities and networks (Busacca & Paladini, 2019), the value of sustainability in the relationship emerges between university and craftsmanship. The enhancement of glass through an educational and experiential approach adds value to the academic mission of directing future generations of designers towards more sustainable approaches (Sparre-Petersen, 2017). These approaches face the environmental issues of glass production: the blowing technique, which has remained unchanged over time, involves the extraction and transport of raw materials as well as high energy consumption by the furnace. To this are added aesthetic needs that often put on a secondary level the material consumption. Continuous explorations of the practical and narrative possibilities of both disciplines, glass and its modes of use may therefore reveal new possibilities for aesthetic and material innovation.

Conclusion
The fragile identity of glass is twofold: on one side more material, linked to shapes and colours, and on the other more abstract, linked to the heritage attributed to the product as much as to the process. The case *Il soffio di vetro* offers some insights for the development of new practices that focus on enhancing the artisan value of this material: its multidimensional malleability fosters sustainable and creative approaches where the relationship between the designer and the material is direct, personal and supported by the local know-how. This mutual exchange support a new educational framework where students are more aware of the context in which they can act in an innovative and sustainable way.

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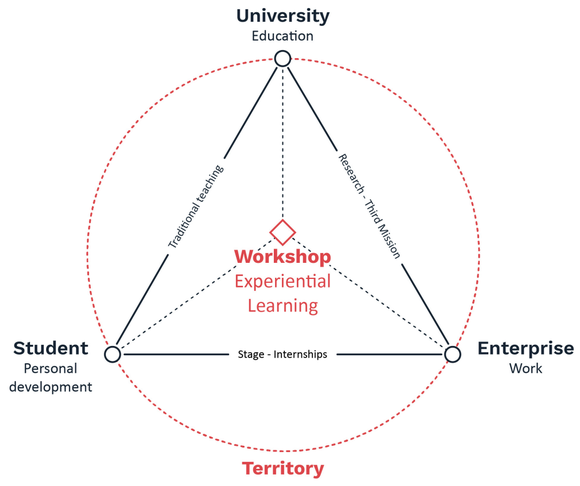

Figure 1. The local actors involved in the workshop development: student, university and enterprise.

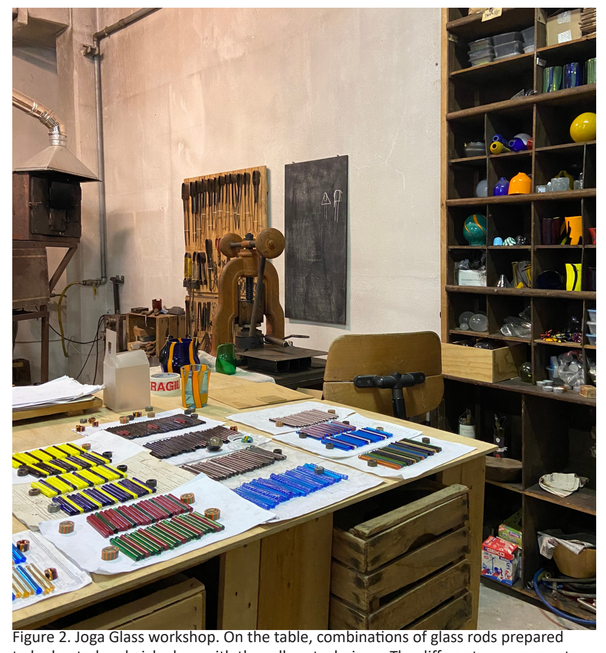

Figure 2. Joga Glass workshop. On the table, combinations of glass rods prepared to be heated and picked-up with the roll-up technique. The different arrangements of colours allow to obtain different chromatic effects. The combinations are almost infinite and the result is always different.

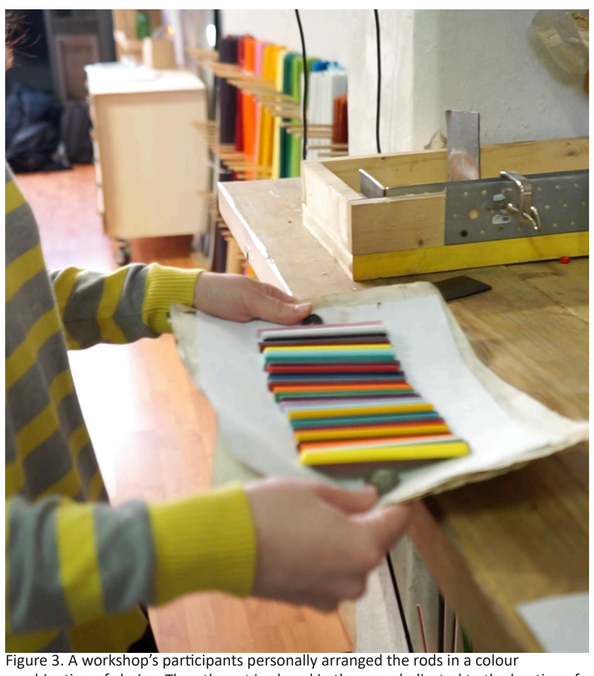

Figure 3. A workshop's participants personally arranged the rods in a colour combination of choice. Then the set is placed in the area dedicated to the heating of the glass.

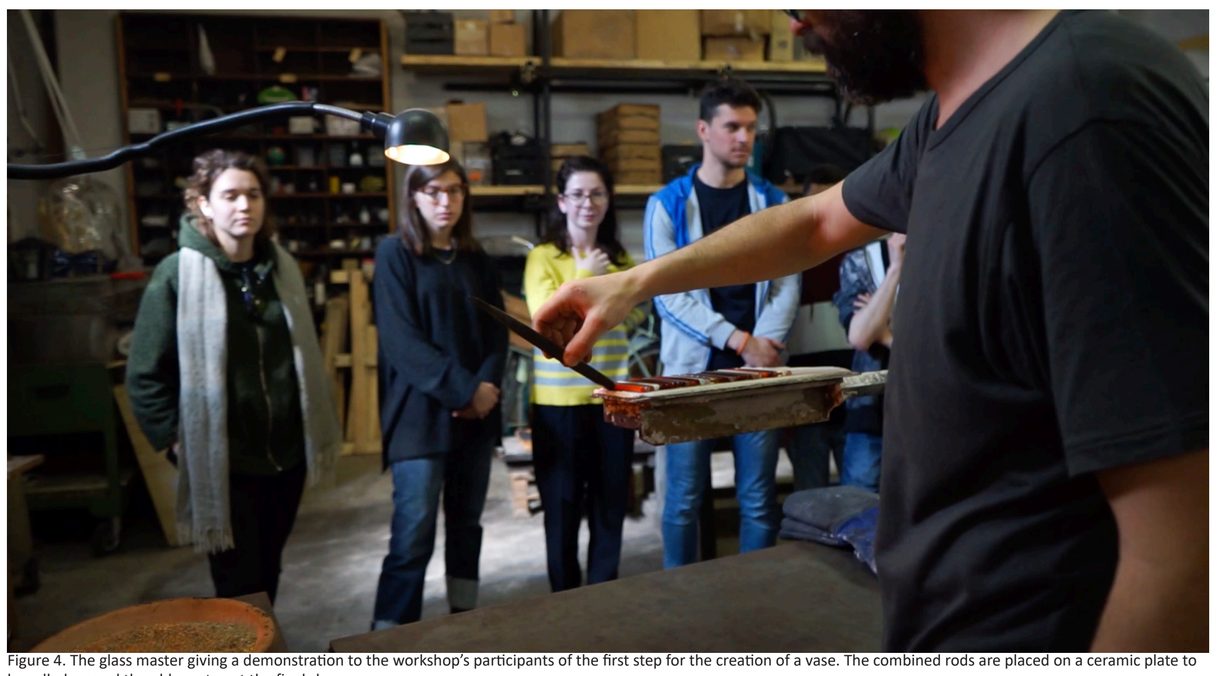

Figure 4. The glass master giving a demonstration to the workshop's participants of the first step for the creation of a vase. The combined rods are placed on a ceramic plate to be rolled-up and then blown to get the final shape.



Figure 5. Two students collaborating to remove the blown object from the mould. Particular precautions must be taken during this step as the material is still extremely hot and delicate.

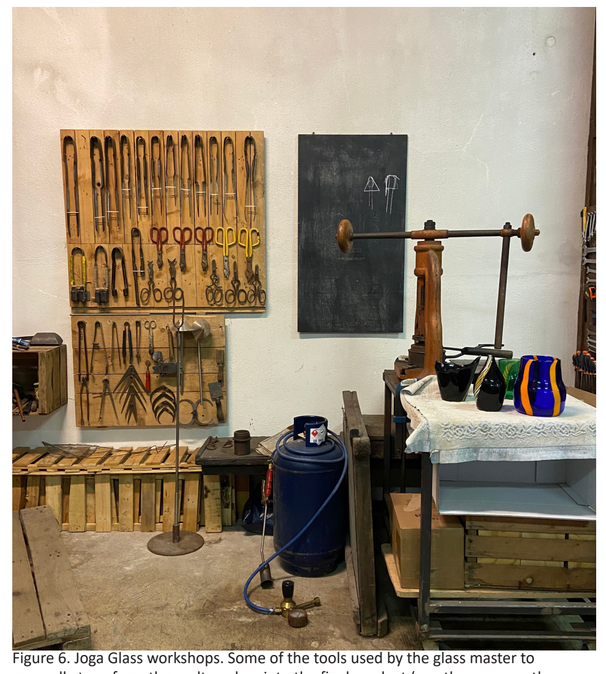

Figure 6. Joga Glass workshops. Some of the tools used by the glass master to manually transform the molten glass into the final product (e.g. the vases on the table).



Figure 7. Final modelling of the glass object. As in previous steps the glass master is using his manual ability and experience to define the shape. The starting rods are clearly visible but they have been twisted to create a unique pattern.

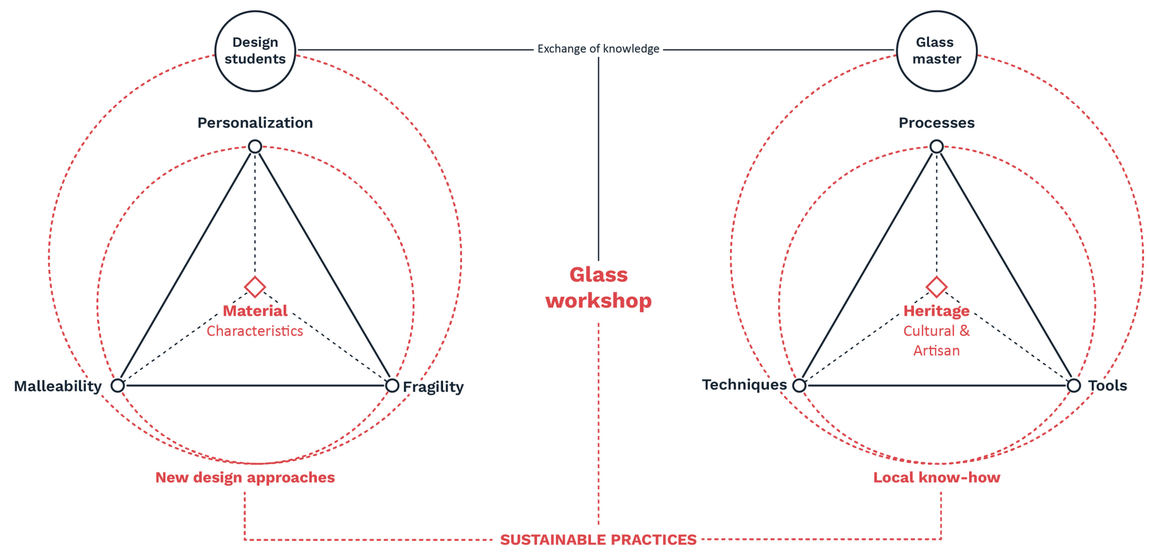

Figure 8. The twofold side of the glass emerging from the outcome of the workshop. The exchange of knowledge between the design students and the glass master allows the enhancement of the material characteristics and the cultural and artisan heritage of it. The combination of new design approaches in the formal-aesthetic characteristics of the glass with the local know-how has the potential to develop new sustainable practices.

GLASS is ANTIFRAGILE because, throughout history, it faces challenges, crises, and innovations. Glass, its design and its technologies are in a constant state of transformation by fulfilling different functions, affirming some of its characteristics and modifying others, adapting to changing contexts and demonstrating a capacity for innovation.

In the International Year of Glass, this book presents the work of researchers and scholars who highlight the differences and at the same time the commonalities between three different fields of study: Science, Design and Architecture.

The aim of this book is to share descriptions of the glass and its innate aptitude for innovation.

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