Education in Architectural Conservation:
New Models and Strategies

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Abstract

Presence of women in technical professions had over the last three decades a remarkable development however its incidence, especially in terms of ability to access to decision-making roles, still remains low. If you look then the range of niche expertise, you can note that within several specialist qualifications, women are still given a role relating to creativity and education, but less to technical-operative or strategic decision-making professions. The profession of architect and engineer, as well as that one of the skilled technician, are a good example; not a little part of woman architects prefers teaching, often she is not manager-referent of professional or technical office, if not in collaboration with men; finally her presence in highly specialized technical and operative roles, such as diagnostic investigations or infrastructural building sector is still today very poor and indeed. In fact on the total number of graduates in Architecture in Italy, women were 25.6% in 1992, 28.9% in 1999, 40.6% in 2010 they could become the absolute majority in 2027. National Council of Architects, 2011. In the university field in the 2003/04 academic year, women placed in the role of Italian professor at the Faculty of Architecture are 17% (on a percentage of the graduates 40.6%), 6% in engineering (on a percentage of the graduates 24.7%), while are 42.4% in English Language and Literature Foreign or 39.0% in Psychology. And again: on eighteen of Public Research Institutes (which see women on average a total estimated at 38.4%), only one is in 2006 chaired by a woman. Ministry of Labour, 2006. In this sense, compared to no more than a decade ago, this process seems to suffer an involution, that could be more difficult to be recovered than its primordial conquest. It is therefore a both horizontal occupational segregation, because it puts women's employment in a limited number of sectors and technical decision-making professions, and vertical, as it sees a particular concentration of women at the lower levels of hierarchy of technical roles, especially practical-operative ones; however, why are the restorer or interior decorator more widespread than woman-mason or woman-upholsterer? These operative and artisan professions in the construction field are very similar each others. It would appear a certain intellectualization of manual professions, when they are inflected in the feminine world; the feeling, to be better investigated, is that the dense policy statement of formal and substantive equality in training and professionalization, also in terms of compensation, has produced new kinds of gender segregation, adapting these professions to supposed female attitudes, with an impoverishment of their technical and practical content. Nevertheless, there are some good experiences, not surprisingly first of all in agriculture (social micro-housing, sustainable construction, restoration), where it was attempted a conversion of this trend through gender mainstreaming policies (in terms of integration and equity, not of facilitation) and capacity building (defined as participation in the building of human capital), proposing for instance micro-financing and woman cooperative credit tools, aimed at entrepreneurship, but even more at women technical and operative training.

1. Introduction

Cultural heritage, such as economy and environment, is a global issue and its impoverishment in a part of the world implies a reverberation on the whole humanity. If, however an economic crisis is a reversible process on the medium term, even in cyclical terms and environmental depletion is a difficult to reverse process and it is only on the long term, the loss of cultural heritage is rather irreversible. In this context, it becomes crucial issue of training of actors involved in preservation processes of heritage conservation. If for education/training we don't only mean knowledge but also skills and expertise, we could verify countries in the world where there is the highest rate of functional literacy (reading, writing, numeracy and to be able to apply it in daily life), at the same time suffer from a severe impoverishment of their degree of common technical expertise and practice [01], especially if linked to the world of traditional knowledge (understood as knowledge and skills), such as agriculture, handicrafts, construction - including primarily practices of conservation. Mass literacy of the twentieth century has led to an impoverishment of ability to mass broadcast of traditional technical and practical

culture, which has become subject of study and protection, but it has ceased to be an instrument of social development. From technique we went to technicism, the risk is to go to technocracy [02].

This awareness benefits today the poor countries, where the level of primary literacy is still very low, but when, on the contrary, their heritage of traditional knowledge is preserved, because it is transmitted continuously and through spontaneous models; this process is particularly evident in conservation practices for historical heritage, including architectural one. In conservation practice this impoverishment of traditional knowledge is a greater risk than induced natural disasters. The challenge is to propose multiliteracy models, able to combine traditional knowledge with functional literacy (UNESCO, Paris Charter, 2001, Article 14).

In tools for conservation practice an application of multiliteracy can be:

- informal training: in antiquity training agencies were not structured, so training took place in construction site, in the artisan laboratories, etc; working on the material products of this training model involves knowledge and new interpretations of its epistemological paradigms: 1. learning by doing 2. to learn also means learning to learn 3. learning may also involve learning to teach;
- subsidiarity: restoration and conservation cannot be only the field of interest for super-specialized, but also for super-experienced people;
- adaptive preservation: as well as in biology and in pedagogy, practice of conservation needs change/repair/accommodation/improvement/but also involution if necessary, taking into account the memory of their genesis; the difference between assimilation and adaptation in conservation practice is crucial;
- self-construction and associated self-construction (historical centers, building blocks) in traditional vernacular self-construction was declined even in self-maintenance, self-restoration, etc..; architecture without architects may also means preservation/restoration without conservators/restorers.

Self-construction can collimate with needs such as:

- use of local and traditional materials and construction techniques, also in terms of their innovative interpretation;
- attention to environmental problems: the 4R cycle (Reuse, Reconversion, Recovering, Recycling);
- ethical issues (self-construction for semi-sedentary and nomadic communities, emigrants, social housing);
- improving the resilience of communities in case of natural disasters (earthquake, twister, flood).

Self-construction is not to be confused with illegal construction and normative restrictions in many experiences are overcome by the application of self-subsidiary/associated models.

2. Technological training for multi-level security and mitigation of risk for architectural heritage

The training issues in cultural heritage is today confronted with a request for new skills, able to answer instances and due to changes in the contextual systems to cultural heritage, especially in terms of services, and due to new social needs, also in terms of social value. The identification and definition of heritage is therefore a process for choosing values. In this sense, the analysis of social values is useful to identify what is really heritage and what is not, without disregarding the importance of preservation of cultural diversity, which relies on the concept of heritage, seen as a major resource for dialogue between cultures.

As suggested by the Faro Convention-2011, heritage should be considered as a factor of social bonding and cohesion, that arouses a sense of belonging in the construction process of a society. Knowing the social values of a site, of an ancient building or of a landscape, allows therefore to identify the context, the know-how, the know-what and the know-why of their existence. Only from a depth knowledge of these elements will allow communities to be able to intervene effectively on heritage conservation, both in terms of tangible and intangible preservation. Among these social values, an implementation of the actions and strategy for limiting the risks related to the protection and preservation of assets has imposed in these years with a certain continuity [03].

These risks pertain to categories which are very diverse and often changing. Among these are, but not limited to, the risks for cultural and natural landscape as well as historical territory (eg. risks from environmental pollution, also connected to activity of criminal organizations, natural induced hazards, such as floods, landslides, etc.) and the risks affecting urban systems, anthropized settlements and monuments (natural ones, including in particular earthquakes, and anthropogenic ones, such as vandalism, theft, fire). Because of these risks are often interconnected, their mitigation may be more effective if addressed, both in terms of reduction and compensation, but above all in terms of prevention, through tools able to identify, classify and monitor these risks, associating them different networking levels (monument, city and landscape, also in correlation with their infrastructure systems); these tools must be able to allow real-time updates, warning systems, evacuation, first aid, management emergency, post-action planning.

The multi-purpose GIS technologies [04] for instance are already a good applications of these instances in fields such as large industrial structures, offshore, nuclear or major infrastructural networks, but the study-cases applied to heritage are today still rather poor. The functionality of multi-purpose GIS software, object of several study in recent decades, because of their ability to integrate the main heterogeneous digital data in common databases, providing an opportunity to deepen analytical scales, are extremely useful in the field of conservation of architectural and landscape heritage (for example the GRASS, Geographical Resources Analysis Support System), because of they allow to archive geospatial data, to build 3D models with always updating data (to monitor landslide risk, for example), to join and to compare data coming from different disciplines, such as geology, archeology, etc. All of this fits into the field of practice conservative, particularly with the concept of conservation planning, enabling an integrated management of complex information for every phase of a conservation project, from its knowledge to a post construction monitoring, being able to extend this practice to an even broader territorial system, but also only for knowledge of architectural heritage consistency. Yet an integration between multipurpose GIS technologies for risk management and tools for cultural mapping could be an interesting and sophisticated technological tool for an integrated management of the specific cultural heritage risks. In fact cultural mapping is in general terms a research method to identify, classify, describe and document tangible and intangible heritage of a place, combining it with its physical, social, anthropogenic and natural attitudes, in order to understand its characteristics and potentials. Among the most popular applications of this method, there is the global map of cultural diversity, promoted by UNESCO in 2002-2003 [05]. It is obvious that thinking new skills becomes central to able to interpret these new instances, however they belong to an issue, the technologies for cultural heritage, already very diffused in professional practice. Finally, we have to note that an implementation of strategies aimed to mitigate risks, especially in the field of cultural heritage, can be an effective tool to strengthen the sense of responsibility in communities for safeguarding and protecting heritage, that history entrusted to them.

3. Technical and practical training and gender equality

In this context is crucial to consider the gender matter in technical and practical training; for example, we remind that women architect or engineer, third level certified for the non-destructive investigation UNI EN 473, in 2010 were only 11 against 254 men. (Italian Association of Non-Destructive Testing-2012). is not superfluous to remind that capacity building strategies were codified in the final document of the United Nations Development Programme-1991, and regards implementation of tools for creation of a contex*t able to promote, through appropriate political and legal structures, an institutional development, which includes society participation and development of human resources.* In our applicative context it finds a peculiar definition in the final document of the United Nations Development Programme-2006, which reshapes this term as tool for *developing human resources, process that equips individuals with the skills, the ability to understand and access to information, knowledge and training opportunities, enabling them to operate effectively.* In the field of cultural heritage conservation capacity building shows the necessity to analyze the possibility of conceiving education and training in terms of integration into the broader context and a tool for a formation of consciences. Another strategy can be to propose micro-financing, that is a tool for obtaining particularly facilitated financial services and it meets two basic principles:

1. it has turned in favor of disadvantaged groups [06];
2. it is aimed at supporting economically development entrepreneurial initiatives, also with an indirect impact on enhancement of human capital (inclusiveness, social cohesion, health, learning by doing) .

Micro-financing and woman cooperative credit tools, aimed at entrepreneurship, but even more at women technical and operative training, to training models and strategies, these experiments have

better outcomes in countries with poor functional literacy [07].   Figg. 1-3. Some examples of women technical professional training activities:

Fig. 1: Post-earthquake emergency restoration, (S. Eusanio Forconese_Italy_2009).

Fig. 2: On site investigation training course, (Valencia_Spain_2008);

Fig. 3: Construction of a model timber house, (Reggio Calabra, Italy_2007);

4. Conclusions

We have to remind that in the field of conservation and restoration practices Italy has, in the international context, a tradition of really high relevance in its ability to combine research and experimentation, tradition and innovation, high artistic craftsmanship and intellectualization, theoretical-conceptual and technical-practice education. For these reasons the technical and artistic excellence of Italian craftsmanship in the field of restoration and conservation is unanimous recognition in the world and this tradition is today expressed by some authoritative training institutions in the field of restoration. Therefore the challenge, in this context, stands on two levels : the first one is the ability to deal with new issues, including, as described above, the technological tools today available to defend the heritage against new kinds of risks and the issue of gender equity in vocational and high technical education; the second aspect regards how to promotion and dissemination this educational practice in an international and transnational perspective, that could be implemented not only by applying some of the most effective tools today available (for instance e-learning and m-learning), but mostly through a structured theorization of this approach with the aim to define general models and related strategies.

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