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Exploring Models of Design Thinking in Egypt

Abstract

Whether it's an anxiety about identity loss, a fear of the speed of development of new technologies, or guilt over imperialist cultural influence, craft-based initiatives have been seen by many foreign aid providers as an appropriate way to support developing nations. This practice is based on many attempts at utilising conventional design practices, and trying to apply them to industrial activities where the purpose is the production of material objects, by improving the production quality of crafts through the direct involvement of designers.

New models continue to develop, aiming at introducing design practices to produce better quality material objects in developing countries. Handcraft sectors were the first targets of these models, but the model is being increasingly applied to other fields of industrial production and also service design. This process is empowered in some countries by a new paradigm of thinking that addresses the designer as a change-maker, postulating that 'design can help raise the quality of life within economic planning and that the designer can become an agent of progress' (Ahmedabad Declaration 1979).

Egypt is one of the unique examples of developing nations with a craft tradition that is deeply rooted in its socio-cultural and economic systems. This fact has supported Egypt in receiving design-oriented foreign development aid for decades. International and non-governmental organisations have promoted the value of providing assistance towards the enhanced development of the wider craft production sectors, and their contributions have followed in terms of monetary support through both foreign aid and local organisations.

This study will explore and analytically discuss this stream of design thinking in Egypt, with the intention to:

> Create a conceptual framework linking the many factors involved in addressing the role of design in this socio-cultural practice.
>
> Present a model of new practices initiated by a group of Egyptian product designers aiming at a better understanding of the role of design and designer in supporting this topic in Egypt.

1. Design in Egypt: Context and futuristic vision

1.1. Exploring design thinking in developing countries

Design thinking has been underutilised in many traditional attempts to achieve economic growth in developing countries. 'Design for Development' is concerned with constructing the discourse of design by drawing upon the development milieu of a specific context (the ways in which development programmes in 'developing countries' are enhanced by the application of design principles and strategies). As such, the practice of design may focus upon the economically weaker sections of society and look to propose product and service solutions to improve quality of life.

Wide attempts have involved utilising conventional design capacities and applying them to industrial activities such as the production of artificial objects, whilst targeting handcraft sectors and/or local low-technology and small industrial enterprises. This dominant logic of economic rationalism did not help design practices to become an energetic feature in the development policies of developing countries. Industrialisation was promoted as the only solution to prevailing social problems.

Within its historical context the social responsibility and what is required of designers in this area have dominated the 'Design for Development' movement since it first emerged after the Second World War (Figure 1). However, addressing major attempt to raise social concerns to a position of greater visibility within design for development was the Ahmedabad Declaration[1] in the late 1970s, which argued for the respectful maintenance of traditions[2] and the recognition of local knowledge to support

the process of implementing design practices within development strategies in developing countries. This was articulated in the form of a number of principles that developing countries were encouraged to engage with as they crafted their development policies.

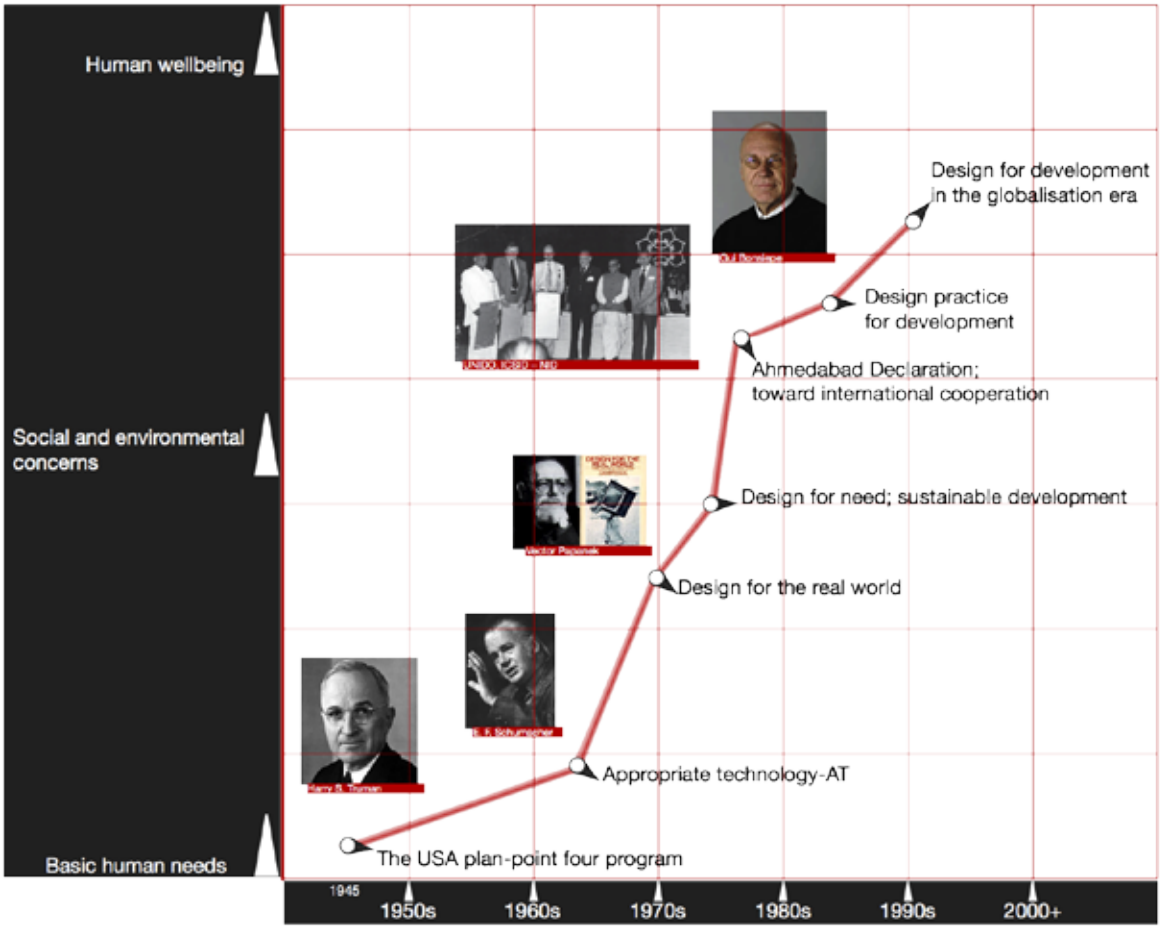

Figure 1. Mapping the history of 'Design for Development'

1.2. Design thinking and the paradigm of capability approaches

The human development report stated since the 1990s the shifting in the means of development from economic growth as a unified direction and ultimate goal into a human-led process, with the potential to empower people to live according to their needs and interests. The way to realise these goals is through 'building human capabilities – the range of things that people can do or be in life' (www.hdr.undp.org). These capabilities are wide-ranging, from the enjoyment of long healthy lives, to accessing resources that increase living standards and facilitate effective participation politically and socially in the life of the community. These capabilities enrich our experiences in dealing with choices and opportunities in our lives.

Practically, this framework evaluates the impact of social policies on people's capabilities, it asks about these policies' effectiveness in managing resources for society to enjoy good health, sufficient food, access to quality education, political participation and community integration. In such a context the philosophy of capability approaches differentiates between 'wellbeing' and 'welfare'. Welfare is the association between materiality and income, its level based on an evaluation of the utilitarian and excluding the non-utilitarian. For Sen, 'the non-utility information that is excluded by utilitarianism could

be a person's additional physical needs due to being physically disabled, but also social or moral issues such as the principle that men and women should be paid the same wage for the same work' (Robeyns 2005: 97).

Common practices of presenting the means of wellbeing in society take the form of making commodities available, structuring social and cultural institutions and so forth. No doubt, materiality requires addressing, and it relates to welfare instead of wellbeing. However, the capability approaches make a firm distinction between goods and services as means on the one side, and the functioning of those items on the other side. The functional properties are described as the main objective to achieve in the process of creating a design, like a communication device: the main function is to maintain communication between people over distances and around obstacles in a convenient and effective way. Robeyns identified the factors influencing the relationship between objects and their functions, and their roles in limiting the functioning of an object under specific circumstances. The factors are:

- The personal conversion factors (e.g. metabolism, physical condition, reading skills and intelligence); these factors influence the ability to utilise the functions of the object. In our example of a communication device, it's the effective communication channels.
- The social conversion factors (e.g. public policies, social norms, discriminating practices, gender roles, societal hierarchies or power relations).
- The environmental conversion factors (e.g. climate or geographical location).

What makes this theory of capability approaches interesting within this topic of design relates to the concept of wellbeing from the perspective of non-material things, which opposes the theory of welfare and materialism. In which case, should design discourse keep promoting design practices in the framework of welfare? Or should they follow the current design study focus on humans and promote wellbeing as their main objective? Answering these questions requires multidisciplinary thinking to find the right position between the objectives of economic competitiveness and the extended roles of cultural and social norms in the design process, to produce a new wave of human-centred design practices.

Design is the 'liberal art … a discipline of thinking that may be shared to some degree by all men and women in their daily lives' (Buchanan 1996: 6). Clearly this definition is empowering, incorporating artefacts, ideas and working hypotheses that aim to enrich human experience in various ways.

1.3. Design and social innovation

> A good society is one which allows people to be heard, to have a say in their future, and choices in life … [They] value an atmosphere of community responsibility and an environment of security. For them, social wellbeing includes that sense of belonging that affirms their dignity and identity and allows them to function in their everyday roles. (Ministry of Social Development 2008: P4)

Increasing awareness of the importance of sustainability in design has posed a challenge to commercial design activities driven by marketing. Proponents of sustainable practice have proposed new approaches that offer an enhanced role for design in social innovation. Paradoxically, the contemporary era of globalisation and mass communications has actually fostered a large degree of localisation, reshaping, transforming and strengthening the local practices of many societies in the developing world (Thompson 1996). These aspects dominate society's practices in many developing countries. Egypt is a great example of this wave of cultural influences. Egyptians are regional leaders in adapting these aspects and merging them with Arab contemporary culture.

Much contemporary design theory is focused on developing methods that enable creative platforms to arise from which design can target the needs and demands of society, particularly in the form of services and solutions to social problems. This movement in design studies represents an alternative path to the one often taken by designers, driven by market demands and dealing in physical products. Its proponents argue that designers should redirect their efforts towards social innovation, where demand is not created by consumers, 'but by an active decision on the part of a "social entrepreneur" to prototype a new way of being and doing' (McEoin 2009). Social and community groups can in fact play an effective role in the development of innovation, guiding their knowledge of what is required to make new systems work in their local contexts. Designers, in turn, may work with local communities as facilitators, and even as leaders of societal institutions utilising their

technical expertise and knowledge of how systems operate to create systems that function well. Achieving the goal of improving quality of life for the coming generations requires that designers turn their attention toward developing social systems such as education, health care and social security, as they will be the main industrial activities of the future. In order for this to be achieved, specific approaches must be developed for design in the context of social innovation that can facilitate the creation of socially responsible systems and networks. The transition to a sustainable world, however, will be a complex process – precisely the kind of ill-defined nature of social problems. As optimistically framed by Manzini, 'The transition towards sustainability will be very far from being a linear evolution … but human beings will learn to live in a sustainable way' (Manzini n.d.: 2).

1.4. Design thinking and social innovation

Social innovation is a fairly new concept in design thinking, consisting of the utilisation of multidisciplinary design approaches for finding solutions to social needs. These approaches are informed by an understanding of the many elements of social systems and their interconnections. The designer's role in this new context is 'new, different and fascinating', it requires that designers think in a creative, innovative way, 'generating ideas, visualising concepts, refining and creating scenarios for participatory engagement between design process and the users'. However, finding the final solution for the problem is not the sole responsibility of the designer. Rather, the designer will act as an 'operator who acts within a more complex network of actors' (Manzini 2005: 8).

The role of the socially innovative designer in detail identifies four major responsibilities, based on the following conceptual model:

- Explore: A thorough investigation of the social system's problems, to uncover priorities and system/s that will encourage initiation of the restructuring process.
- Create: Analysis, identification, and direction of strategies to be based on socio-cultural practices and heritage traditions, as well as the wider diversity in this society. This phase complements futuristic visions for better alternative systems.
- Interact: Collective co-operation and willingness to adjust. This covers a range of activities relating to the economy, society, the environment, technology and so forth.
- Support the structure: Encouraging people to adapt and to play a role in supporting the new systems.

In this conceptual model (Figure 2), design will play an active role in defining the purpose of this new system, and creating the media to present it. Such a role is based on design's nature as an appropriate intellectual and cultural practice which will lead the transitional process through:

1. Separating components, changing correlations, and producing new structures;
2. Visualising and communicating new structures.

Within this context, design will use its supremacy in analysis to rearrange the structure of functions in the existing system and create new structures. However, the designer will initiate this process based on their ability to synthesise and imagine new relationships between the components of social systems.

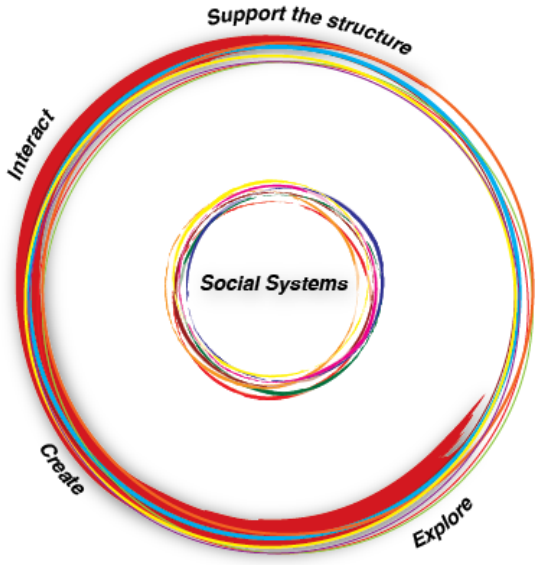

Figure 2. Conceptual model for design in social innovation

2. Design in Egypt: An overview of contexts and practices

2.1. Applied arts education in Egypt

The Faculty of Applied Arts[3] (FAA) was one of the first attempts in Egypt and the region to establish and accommodate a modern style in teaching Arts and Crafts at the higher education level in Egypt. The FAA promotes itself as the model of a design institution in the Arab region, offering fourteen different design disciplines through study programmes at both graduate and post-graduate levels, structured to utilise the rich local traditions of both 'Arts and Crafts' methods and applications in teaching and research practices. The main objective of FAA study programmes emphasises student skill development through practical applications and insights that strengthen the creation of visual objects that are designed to be aesthetically appealing through the application of elements and principles of surface treatments and local traditional style of ornamentations. The main objective is reviving and developing Egyptian craftsmanship and skills, through modern teaching practices of these local traditional methods and principles of making, to sustain the needs and fulfil the demands of new waves of modern educated makers. The FAA applies teaching methods developed through mixing the two main resources of local traditional skills and craftsmanship as well as the traditional Bauhaus methods of applied arts, crafts, and engineering.

FAA outcomes demonstrate student skills in visualisation and making of new objects. This important applied arts education institution keeps moving forward, neglecting the extreme changes in the context of design education that are occurring at local, regional, and international levels. Nevertheless, the FAA is still the main resource for many design schools in the Arab region, offering expertise and teaching faculty for the design higher education institutions in many of these countries. This fact demonstrates the reality behind the outdated position in design and design education contexts in many of these regional design institutions.

2.2. Design-based crafts

Egypt has been a recipient of foreign developmental aid programmes for decades. Organisations have continually seen the value of supporting the development of different industrial sectors within Egypt and their contributions have followed in terms of monetary support through foreign aid organisations and local organisations. The programmes listed below represent the most prominent and active initiatives. Among those who choose to promote their achievements are the USAID-funded Aid to Artisans programme, Yadawee, the Industry Modernisation Centre DEEP program and Menn Baladha.

Aid to Artisans (ATA) is a clear example of an international working group that aims to support low-income artisans to develop and strengthen their capabilities to generate income and support craft traditions. ATA programmes can be used to represent a class of developmental aid that focuses on external funding and expertise in design and marketing to produce products in a developing country with the aim of being sold in the country where the funding originated. ATA provides business development training, as well as foreign designer support, to give them the best shot at a sustainable global export business.

On dealing with the artisans that were involved in the ATA initiative, it is observed that the capability approach the programme aims to provide falls short of creating real change or sustainable development in the design and business skills of the craftspeople. One example from Egypt is the Abdeen Pottery Workshop in Old Cairo's Fustat district. After the Aid to Artisans intervention ended, Ashraf Abdeen, the owner, and his brother Mohamed Abdeen opted to leave the pottery business and work part time at a governmental institution. When asked about their decision, Ashraf states that he could have stayed full time at the workshop, but he would have had to let most of his staff go because there wouldn't have been enough business to keep them on his payroll. He reports that they had partnered with ATA for a job, which he had completed, and that was that.

At the conclusion of the programme that runs for three years in each country, the artisans were found to have returned to their government jobs because the orders had stopped and thus their income had diminished again to its earlier state.

The approach used by the ATA succeeded in providing them with short-term business that sustained them for a while (welfare focus), but failed to create sustainable change. The artisans returned to their previous state because they could not autonomously replicate the effect that the ATA foreign team had created. Moreover, the sharp fall in profit makes for inevitable disappointment on the part of the craftspeople, leading to a distrust and avoidance of foreign support providers and similar sounding initiatives altogether.

Another critical aspect of this focus is that it is based on export markets. Export markets are ephemeral; they don't last, and with them the viability of designing for export markets. In *Designers Meet Artisans* (2005), the author argues that the only way to create self-sufficient economies is if craftspeople could return to their original function of producing for local markets. This not only makes sense economically, because it eliminates shipping and transport costs and difficulties, but it could be argued that it also helps preserve the cultural values and traditions that would be lost in the process of translating traditional objects into more contemporary ones, that prove more desirable to European and American tastes.

2.3. Applications promoting craft-oriented design practices

2.3.1. Yadawee

In terms of foreign funding, Yadawee has the least, most infrequent, spare amount. It has developed a network of skilled craftspeople who work underneath its umbrella to produce a wide array of products which, if designed well, could act as a strong local market opportunity waiting to be tapped and introduced to design-conscious local and regional buyers.

Yadawee falls short of that goal for a few reasons:

> First: It has yet to acknowledge the possibility that a local market could be a sustainable future direction for its products, and thus it keeps targeting an already highly saturated and design-aware export market.
> Second: Yadawee is not interested in a design thinking approach, and thus they follow the model of their predecessors. Their products are designed not by a designer but by a design technician – thus the design portion of the process comes at the end of the product development process, not as an early exploratory function or practice.

The lack of exploration leads to very little creative interaction happening between Yadawee and its team of makers. The makers are not targeted by any developmental initiative; they do not benefit much beyond the extra income. On analysing Yadawee it would appear that it has a lot of opportunities and strengths that set it apart (it is locally based, it has a developed network and production process, it has experience in a variety of product sectors). However, its weakness is that its working model is not based on these strengths, but it is based on foreign developmental aid models that are short-term, externally focused with little exploration and little interest in the social wellbeing and capability building of their targets.

In conclusion, Yadawee is strongly rooted locally, with a trustworthy operations network, but it doesn't operate that way. Yadawee has many opportunities to differentiate itself from competitors, by hiring local designers, infiltrating the local and regional market, providing a range of useful and designed products as well as sustainably benefitting the makers that work with it, thus creating a bond of trust and loyalty. Yadawee could be targeting the wellbeing of its partners (craftspeople, designers, clients) but instead it is targeting their temporary welfare, thinking like a short-term service provider when it should be in it for the long haul.

2.3.1. The Industrial Modernisation Centre (IMC)

The IMC is an Egyptian organisation that aims to 'create an enabling environment in which the private sector can lead growth and make Egyptian industries leapfrog into global competitiveness' (www.imc-egypt.org). They are supported by foreign aid programmes from the EU and other developed countries. The IMC launched the Development of Ethic Egyptian Products (DEEP) 'to integrate Egyptian contemporary traditional arts and crafts in the international supply chain and develop branded consumable products' (www.imc-egypt.org). The IMC then organised a series of workshops, where they invited select designers to work with established crafts workshops on designing products. The products were then exhibited with the objective of attracting buyers from the export market. Potential buyers were invited and flown in to come and view the exhibition. Unfortunately, no orders were placed and that was the end of the project.

In a lecture on the crafts industry in Egypt, Hisham el Gazzar, founder of Yadawee, relates the cause of this failure to the mismanagement of the product development process. He posits that the project was unsuccessful because it wasn't planned well to begin with. El Gazzar contrasts the DEEP case with that of a similar Jordanian initiative. In the case of the Jordanian initiative, a realisation that they couldn't compete with the export market due to an unfavourable exchange rate led them to focus on the local market, which is made up of local businesses, hotels and restaurants. In El Gazzar's opinion, the Jordanian initiative did well

in heading to those local clients, and designing and producing what these businesses needed. It was successful because the product planning process was more holistic and methodological. El Gazzar also speculates that a similar product development process would have helped the DEEP project yield better outcomes. A holistic design process with an overview of the context we're designing in and the outcomes we are trying to achieve is thus advisable. Taking into account the production capacities of the craftspeople, searching for a viable target market, producing samples, packaging, a coherent business plan and a marketing plan could have resulted in more enthusiasm and initiative from the buyers' side and could have sustained the benefit to the craftspeople.

Through reading the description on the DEEP IMC website, one can see that the reasoning behind the initiative is well thought out and that a lot was done in terms of pre-project planning. However, from observing the process undertaken by the IMC in their DEEP project it would seem that the focus on the front end of the process has resulted in little follow through and no planning for sustainability. Clearly the concept that design could help craftspeople survive and thrive in a globalised world drove the development of the project and initiated a phase of reflection on what the project could become, but little was done to differentiate it from past attempts or learn from failed trials.

2.4. Scope of new practices

2.4.1. Menn Baladha

> Design problems will only be resolved in the local context, not by outsiders coming in for a stopover visit. (Fathers 2003)

Menn Baladha is a start-up design consultancy located in Cairo. It aims at 'introducing design to the crafts industry in the Egyptian market', promoting 'a designers' way of bringing attention to the craft industry'. They posit that nowadays the craftsperson neither understands nor associates with the customer; they don't speak the same language, literally or metaphorically. Menn Baladha bases its efforts on connecting craftspeople with their markets, by developing the craftsmanship, and changing the perception of craft production in the market. Their aim is to create a well-balanced and mutually beneficial long-term relationship between designer and artisan.

As a local business that employs local designers, Menn Baladha's initiatives are less transient and short lived. They have a long-term orientation and involvement. This set-up tends to be more productive and reliable for all parties involved. As a result of this long-term orientation, there is more trust between craftsperson and designer.

The communication gaps and problems are gradually reduced. The better the relationship between craftsperson and designer, the higher the tendency of the craftsperson to build and develop skill, capacity and experience, as the craftsperson is more open to the experience and approaches it with more flexibility and agility. This results in an enhanced feeling of ownership on both sides, a clearer vision about where the project is headed and a higher likelihood that problems will be resolved.

The major difference between Menn Baladha and existing market options is that the former are charity-oriented organisations, while Menn Baladha positions itself in the higher-end consumer products sector of the market. Menn Baladha's market offering is value in the form of aesthetically superior, thoughtful and user-centred design products. They use design methods to re-imagine the experience of buying crafts, including aesthetics, packaging, stories, function and any other experiential aspects they see as relevant.

Menn Baladha was started following an exploratory study of the Egyptian craft market, to make use of an observed need in the market, for quality, contemporary Egyptian-made products. They started out by exploring and observing the craftsperson's working context, trying to identify potential areas where design solutions could be developed. They then offered tools to develop precision, accuracy, or to enhance creativity and market viability. The Menn Baladha process is built heavily around the relationship between the designers and the craftsperson, to create a personal, long-term and sustainable commitment that's hard to copy.

2.4.3. Model

While the programmes mentioned above have achieved great strides and created a generation of business and design-aware class of craft workers, students and intellectuals, when it comes to certain developmental measures they remain unsatisfactory. From the previous attempts we can outline some evaluative criteria to be used as a measure and predictor of success in design-based developmental initiatives.

2.4.3.1. Sustainability

The first measure is how sustainable the development programs are. It makes sense that short interventions achieve short-term outcomes and that remote design results in unfavourable and unsustainable effects. Sustainability should be a focus in the design of developmental structures and system.

One way to achieve sustainability in design for development initiatives is to target local markets, by exploring their needs, designing with them in mind and marketing the products specifically to them. It should be kept in mind that most of the time these markets do not yet exist, or they don't present themselves as explicitly as other saturated and unsustainable ones, like export markets. In these cases, following exploratory study, the job of the designer would be to establish new markets, addressing issues like market trends and tastes, the perception of the origin of the craft as well as marketing, distribution chains and sales concerns.

Thus, a critical part of design intervention involves making the connections, encouraging the questioning of assumed notions of 'superior' and 'inferior', and of "modern' and 'traditional', studying the tastes and preferences of local people and encouraging the continued use of indigenous and local craft products

Another way to ensure a design initiative is sustainable is through utilising local designers. With no rush to return to their day jobs, these designers can focus on creating long-term change that supports their design careers and sustains the craftspeople's practices.

2.4.3.2. Exploration through interaction

To have a chance at successfully meeting its target market's needs, any sort of design activity must be informed by exploration and interaction with the stakeholders. Design in the development context is no different.

To avoid assumptions and imprecise expectations, designers in new and unfamiliar contexts should commit to exploration of the new context, through interacting with it, with the locals and with their environment. Exploring the context by interacting with it instead of exploration from afar protects designers from falling into the trap of an ill-defined problem. Ill-defined problems lead to redundant exploration and trials at solving the problem that conclude with the realisation that the problem wasn't framed properly to begin with. Interaction will sometimes lead to unanticipated discoveries that may turn the design process around. Designer exploration by interacting with the stakeholders also empowers stakeholders and makes them participants in the design and problem-solving process.

2.4.3.3. Welfare or wellbeing focus

> The job of the designer is to provide choices for people. (Papanek, 1995)

Design for development provides a great opportunity for human development by advancing the capabilities of a target group of people and expanding the range of options that they have in life. By focussing on wellbeing instead of welfare we can create long-term, sustainable change that money can't provide. Capability building, education and involvement of target groups in the development of their design solutions are good ways of boosting wellbeing in a community, as they achieve satisfaction, enhance one's internal locus of control and the sense of control over one's outcomes. Education also helps communities move away from harmful social mores and develop socially and economically.

If milestones are measured in terms of monetary profit achieved by a craftsperson, then the programme aims at ameliorating the craftsperson's welfare. If there are other developmental objectives or metrics (educating the target group, building skill or capacity, involvement of the targeted group, the target group's perceived locus of control and feedback from the targeted group, measuring impact following the intervention after a certain length of time), then the programme aims at improving the wellbeing of the target group.

2.5. Conclusion

2.5.1. The new model of social innovation

By synthesising these measures with the aforementioned social innovation model, we can construct a new model that supports the development and welfare of craftspeople specifically and developmental target groups in general. The new model of social innovation re-imagines the relationships between the steps in the old model and creates new ones that integrate the resultant criteria of sustainability, exploration through interaction and wellbeing focus into the existing model by introducing them at every step of the process (at the steps of exploration, creation and supporting the structure). It removes the 'interact' step from the cycle and instead makes interaction an integral part of each one of the steps.

2.5.2. Exploration through interaction

The first step integrates interaction by using it as a tool of gathering information and exploring a context that one is unfamiliar with. Exploring a community of craft workers in a specific area, for example, can be completed through heading to that specific area, meeting the craftspeople and spending time with them, observing and examining their activities and experiences. The interactive component here gives the designer a more thorough and realistic image of the subject's priorities and processes.

2.5.3. Create and interact

The second step integrates interaction in the creation step by reducing the barrier between the designers' work environment and that of the subject's. The designers build proposals based on their analyses, strategies and methods but do not proceed without the subject's input. Instead the designers should be prepared to go through rounds of show-and-tell with the subject, to make room for the subject's practices, methods and environmental nuances to take the place of the ambiguity inevitably created by the designers' uninformed proposals.

The craftsperson's workspace could see the designers adjust and realign their proposals through feedback from the craftsperson and their team of experts. The willingness to allow the subject to revisit certain issues is also integral to the success of the developmental project because it ensures the involvement of the subject, gives them a feeling of control over their outcomes and builds capacity and problem-solving skills by allowing them to participate in the intellectual activities that make up the design process.

2.5.4. Supporting the structure through feedback

The third step would see the subject's feedback support the structure. It is vital that the design for development process not stop at the creation step and that the designers do not move on before they have gathered feedback from the subject. Welfare-focused projects tend to cease contact with their subjects and their subject's environment immediately following the creation stage so the project could turn to focus on the way to commercialise the resultant design objects. With the focus turned to the subject's wellbeing, the feedback stage gains more importance as it becomes key to understanding whether or not the subject's wellbeing was affected or enhanced by the project. It encourages the subjects to assume more control over the design process. This ensures that mistakes in the process are not repeated in future projects and that assumptions about the methodology or the results do not carry through further. For the design process to yield sustainable results the feedback step has to be performed early and frequently.

Notes

1. The Ahmedabad Declaration resulted from a meeting of the United Nation Industrial Development Organization (UNIDO) and the International Council of Societies of Industrial Design experts at the National Institute of Design in India in January 1979. It stressed the 'urgent need' for 'industrial design activities' in planning national development plans for developing countries. The document was signed by twenty nations.

2. According to Thompson, 'tradition is an interpretive scheme, a framework for understanding the world' (Thompson 1996: 91).

3. Established in 1839 as a school for industrial and technical operations, it targeted graduate specialists in scientific and practical applications relating to materials and industrial productions.

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