CULTURAL DIVERSITY AND REFORMING SOCIAL BEHAVIOR:
A Participatory Design Approach to Design Pedagogy

Abeer A. Hasanin

Helwan University, Cairo, Egypt
Carleton University, Ottawa, Canada
abeerhasanin@gmail.com

Abstract
This paper presents a participatory design approach as an alternative model for design education. This is to show how implementing collaborative design affects the design process in comparison to the conventional design studio teaching methods and techniques. It also presents a literature review focused on the importance of integrating cultural diversity and social context within the design studio environment implementing the co-design. A review of traditional design studio teaching, cultural diversity, and social behavior issues, their effect on design decisions, and their implications on design outcomes is undertaken. The paper investigates two questions: 1. Does current design education achieve the skills, learning, and training necessary for the students to become successful professionals in design practice? 2. How can integrating the participatory design approach within the design studio affect the design output and understanding cultural differences?

Keywords: Cultural diversity; social behavior; participatory design; design pedagogy; design practices.

INTRODUCTION
As a result of complex social change and behavioral issues involved in the contemporary social context and since recently design is considered as an applied behavioral science, the role of the designer needs to be reshaped. This research is a presentation of different views of how design education can offer positive design-learning experience to train and educate designers to fulfill the need to balance between the rapid complex of social change and the human-environment interaction.

According to Salama (1995), design education is one of the fields that require innovative and creative skills and social responsibility that could be applied within two-dimensional and three-dimensional environments. Additionally, the major concern of designers is producing products that relate to human activities; that focus on one hand on balancing the human environment-interaction, socio-cultural behavior and awareness, and on the other hand, on balancing between the students’ faculties of searching, thinking, and other mental activities. This should be reflected in the design teaching process in a way that should be focusing more on balancing formal and socio-behavioral aspects and also students capability to conduct a socio-cultural design research.

According to Turgut, Salama, and Kellett (2008), most professional design and planning education programs do not provide enough time to explore and teach all relevant issues related to culture-design relationships. Recent literature indicates that deep understanding of the culture-design relationship is necessary. Thus, an important objective in this context is to overcome problems related to design practices and to present an approach to train new designers and design students to understand their changing role in contemporary society.

The paper presents a participatory approach for design students as a new design teaching mechanism within the design studio. It also aims to integrate new cultural diversity and
social change dimensions into design goals and social responsibilities. This literature review focuses on how integrating the participatory approach into the design learning environment and affects the nature of the design process toward more effective socio-behavioral change. Concomitantly, this paper aims to address noticeable problems in the profession of design, which starts at their roots, forming the very first step as design students in the current design education system. It is essential to face the problems of design studio teaching. These problems can be exemplified like this: on the one hand, the isolation of design students from the real socio-cultural situation, and on the other hand the designers’ ego that isolates the design professionals from interacting with the users during the design process which leads to a lack of understanding of human and cultural aspects, and in turn, to the failure to anticipate users’ needs.

CONVENTIONAL DESIGN PEDAGOGY
Design education, like other branches of education, conveys the values of the profession and society. Since design is created in the field of tension between reason, emotion, and intuition, the design education should be seen as a manifestation of the ability to visualize, coordinate and implement the idea of building or product rooted in the traditions of humanity. Design is an activity that focuses on identifying problems in order to achieve responsive solutions.

At the beginning of the founding schools of design, there was only one form of education: Beaux-Arts education in France, which emerged in response to the system and the needs of the state. With the change of the system of values appeared the only alternative approach to formal education before the First World War: Bauhaus education in Germany, which emerged as a result of technological change resulting from the Industrial Revolution. Although these approaches look different, they are in fact based on the same principles regarding the need for attention to the community and the needs of the user, where they focused on the formal aspects of design and architecture, manufacturing technology with little concern for cultural and social issues and values (Salama, 1999, 2009).

The Beaux-Arts
The Beaux-Arts was founded in France in 1648 by Cardinal Mazarin to educate the most talented students in drawing, painting, sculpture, engraving, architecture and other media. The instructors combined between teaching and professional practice. The evolution of the Beaux-Arts is divided into two periods: first, from founding the Royal Academy of Architecture in 1671 to the mid-nineteenth century. The second was from the mid-nineteenth century to 1968, where the school was reformed to add more technical training aspects into architecture offering two degrees: First is the diploma in architecture and second is the diploma of graduate studies in Architecture (Egbert, 1980).

The Beaux-Arts Educational System
The Beaux-Arts education system is based on three major stages that would lead to be qualification in architecture practice.
First, all students are required to join an “atelier”. The selection of this “atelier” depends on the following:
1. The person whose goal is to achieve “Grand Prix de Rome” would choose an atelier headed by members of the institution in charge of running this competition.
2. A person could have the interest to join an atelier because of its reputation.
The atelier was the main place to practice where all the design exercises are conducted. At the atelier, students get prepared for entering the competition. Second, after choosing the atelier students have to pass several design problems to be enrolled in the school. The first problem is to pass twelve hours of architectural design courses, while the second is to pass eight hours of drawing and decorative design elements. The third problem is to pass a set of examinations in scientific fields; one example is a two hours exercise in descriptive geometry.
After passing these steps with all the included courses and exams, the third stage takes place to prepare students to fulfill the requirements toward the degree (DPLG-Diploma Par le Government). According to Egbert (1980), this stage consists of the following:

1. Six Projects, from five weeks to three months, which include plans and normal presentation and sections and elevations.
2. Six sketch designs, each is a twelve-hour session to complete plan and perspective, presentation for a specific given structure.
3. Six exercises, each one is related to an aspect of architecture such as rendered drawings, planning, urban design issues, and addressing problems associated with landscape architecture.
4. The last exercise is for those who aim to develop futuristic, utopian or visionary ideas. The student should pass a minimum of six of the eighteen exercises to be qualified for the presentation of the final thesis. The thesis consists of oral examinations and the necessary drawings in the manner of working drawings as a complete presentation for a selected building; also specifications and estimated costs are to be submitted.

The Bauhaus

The Bauhaus was established in 1919 by Walter Gropius in Germany. Due to the political situation and change during that period, the Bauhaus was closed several times which was manifested into three stages of the Bauhaus: first was in Weimar from 1919 to 1923, the second was in Dessau from 1925 to 1931, and third was in Berlin in 1932 until Mies announced the closure of the Bauhaus. Ideas from all the advanced art and design movements were explored, combined, and applied to problems of functional design and machine production. Their philosophy was "the complete building is the ultimate aim of all the visual arts." They believe that every artist should reach proficiency in design. The unity between art craftsman and technology was their main goal. It was the logical consequence of German concern for upgrading design to reflect the new era of industrial society that began in the opening years of the century. Advanced ideas about form, color, and space were introduced and integrated into design vocabulary when Der Blaue Reiter painters Paul Klee and Wassily Kandinsky joined the teaching staff with Johannes Itten who has established the preliminary courses to release student creativity and to teach them the nature of the materials and fundamental principles of design and visual arts. De stijl was introduced by Lyonel Feininger on 1919 (Meggs, 1998).

Notably, The Bauhaus achieved and influenced the art and design movements. It created a modern design movement that was reflected on architecture, product design, and visual communication. Moholy Nagy contributed an important statement about typography. It developed the modern approach to visual education, which contributed to visual theory. By integrating fine and applied art, it also played a significant role in bringing art to a close relationship with life by using design as a tool for social change and cultural revitalization (Meggs, 1998).

The Bauhaus Educational System

The program’s goal was to develop the student’s personality by providing technical skills. The main concept of the Bauhaus is the integration between crafts and art and dealing with them as they are two varieties of the same activities. The teaching program started among a group of artists who were to give instructions about the effective use of color in a shape or form and composition, providing fundamentals of aesthetics in a new machine era using their artistic experiences to formulate a new grammar of design. The major concern was the relationship between production and design (Meggs, 1998).

The Bauhaus in the beginning stage was divided into three phases: a preliminary course, a general course, and architectural training. Lately it has changed to two phases only, which are the preliminary and the architectural training. The preliminary course was added by Lazlo Moholy Nagy. Lasting for three semesters, the course is based on form and composition, and includes practical training and workshops on the use of tools and materials and field visits to factories as a link to industries. The general course includes training workshops, lectures on theories and
training on a model building. The architectural course includes two categories: first is training in metal workshop, wall painting and in theoretical lectures in aesthetics. The second includes instructions on the factory settings and how it affects design. The third includes architectural design studio, interior design, training on model building, and lectures on theories of architecture. The student after passing these all would obtain the Bauhaus Diploma (Witford, 1984 and 1992).

CULTURAL DIVERSITY AND DESIGN PEDAGOGY
Turgut, Salama, and Kellett (2008) argue that the recent years have witnessed dramatic changes in the socio-physical environments of cities suggesting the presence of multiple diversities. This is exemplified by changes in the structure of contemporary societies, the emergence of informal settlements, housing problems, large structure and new building types, and the deterioration of the built heritage, while the complexity of the existing gap between environmental growth and rapid urbanization on one hand and the human behavior in the built environment on the other hand. This increasing gap is conceived as one of the problems that impact the way in which people perceive, read, and comprehend their environment. With these arising problems, demands for new types of knowledge and their application in design pedagogy are clearly on the rise (Turgut, Salama and Kellett, 2008).

Influence of Cultural Diversity on Conceptual Learning Output
With globalization and migration of people, cities become more multicultural. So a need to teach cultural aspects to design students, planning and design has emerged, even though design education have not fully incorporated cultural aspects into pedagogy. Since design is regarded as a problem-solving process based on creativity that fosters the upgrading of visual context and enhances individual behavior toward the physical environment. Uncertainty, uniqueness and conflicts are typical characteristics of the design problem solving process (Abdel-Hadi and Rashed, 2008).

Teaching cultural aspects can be done using a variety of techniques proposed. These include games and simulations – where role playing can be used to bring attention to cultural matters; library saturation – which involves in-depth library research; cultural encounter and experience – reflecting on experiences of encountering and living in another culture; naturalistic field research - going to the field, observing, participating, interviewing, seeking to understand culture physical environment relations; ethnography – abridged or unabridged search for learning the culture; exploring cultural concepts – seeking information on specific cultural concepts, such as world view, traditions, customs, etc. questioning embedded design values – interrogating how values permeate design; design programming – obtaining cultural physical requirements; and design problem solving - by designing for a community. Some of these techniques are more effective than others.

Aleya Abdel-Hadi and Tarek Rashed (2008) have tested the hypothesis that cultural diversity affects the students’ conceptual design output. The methodology used to obtain the result of this hypothesis relied on classification of the outcomes according to similarity, relating them to results obtained from in-depth structured interviews with some open ended questions with the students (80) that dealt with their sociocultural background: the main physical features they recall from their daily route. Data analysis revealed that landscape was experienced and interpreted in many different ways: nature, cultural activities, ideology/symbol, history/myths, location and aesthetics, with an influence of the cultural environment context on the perception interpretation processes (Abdel-Hadi and Rashed, 2008).

REVOLUTIONARY MODELS IN DESIGN PEDAGOGY
In response to the traditional design teaching models and the systematic design process of the late 1960s, design educators have developed and employed several teaching model alternatives as a result of the criticism of the traditional design education that reflects the inappropriateness to meet and fulfill the contemporary needs of society. The different models include the case problem
(experimental) model, the analogical model, the participatory model (community based design learning), the hidden curriculum model, the pattern language model, the concept-test model, the double layered model, the energy conscious model, the exploratory model, the interactional model (Salama, 1995, 2009).

Over the past six decades, designers have been moving closer and more open to approaches that define the design and the products based on the need of the future users of what they design. The advances is unified now in design practices and education, practiced user-centered design from an “expert perspective” in which trained researchers observe and interview users, whose contribution is to perform instructed tasks and to give their opinion about product or design concepts that were generated by others. The user-centered design approach has been primarily a US-driven phenomenon.

Since the 1970s, people have been given more influence and room for initiative in roles where they provide expertise and participate in the informing, ideating, activities in the early design phases. Figure 1 reflects an overview of the current state of the human-centered design landscape. As shown in the area of participatory design, the notions of co-creation and co-design have been growing. Co-design refers to the creativity of designers and people not trained in design working together in the design development process. Figure 2 shows a simple representation of the design process today and the growing emphasis on the front-end stage of the design process.

In search of alternative ways of developing collaborative design skills, Sander and Stappers have explored various forms of board games, because they can establish a frame for experimentation and learning about design collaboration. They also provide the students with a dynamic and creative environment. To achieve that, the exercises had to be carefully selected to be diversified enough and stimulate the creativity of students and the participants. One important aspect to consider in participatory design sessions is the organization of working groups and the choice of the exercises and working material. It is especially important to make sure that all users, regardless of their level of experience feel that their contributions are valued (Sanders & Stappers, 2008).
PARTICIPATORY MODEL IN DESIGN PEDAGOGY

Participatory design is a dynamic process that involves two major factors: first is student awareness of the term “cultural design”, which is a term used to indicate design that conscientiously attempts to make design suitable to the culture of the design perceiver, including helping students gaining the experience in understanding the various cultural components, and the need to incorporate cultural requirements. Second is the user participation during the design process taking place in design progress at early design process stage as an efficient tool of understanding the user needs and preferences (Hasanin, 1997).

In the late nineteenth century, participation has emerged when the development of the United Nation's popular participation programs started presenting the community participation theory as an approach to social development. Its main goal was to create the opportunity to all community members to be involved politically and be part of the development process. The community–based struggles in the 1960s were related to the beginning of the democracy movement in America and the start of the civil rights movement, and the challenges of alternative cultures. The new social movement developed by programs of social reform named “War on Poverty” the Community Action Program supporting the demand of improve the living condition of the poor. Davidoff, advocacy planner has presented on his article 1965 a new planning model. His belief is in expanding choices for all persons, and the recognition of the social responsibility and enabling all group and organizations representing low-income families (Sanoff, 2000).

Since the role of the designer is solving design problems, the design games focus on how users can participate in supporting the designer's decisions within the design process, usually, designers in this process usually faces major challenges in facilitating and linkage between the members of the participant group whose involved with the designer in the design process. One of the studies presented by Ehn and Sjogren (1991) emphasized PD work as play. They developed the participatory design concept both theoretically and methodologically. They created design games as a tool of 'designing-by-playing'. They involved participants by using games in the process of experiencing future work situations in fun and liberating ways. As Muller, Wildman and White (1994) presented through their research, games were helpful because they provide a familiar, relaxed and relatively egalitarian atmosphere within which the stakeholders combine their diverse backgrounds to develop new solutions and to meet one another's needs (Iveren & Buur, 2002).

Phases of Participatory Design Model

According to Sanoff (1994), consideration could be outright to participatory design as a system that contains various elements that can be represented with two of main types of key factors.

1. **Structural Factors:** Represent a set of considerations that affect the behavior of the people involved in the design process and outputs that will be obtained as a result of the design process those factors include the following major points:
- The nature of the participated group, which could be in small scale with harmonized thoughts and preferences, or it could be bigger scale groups that have multiple contradictory concerns.
- The aim of the participation depends on the nature of the design project, the type of the related problems and the social and cultural settings.
- The level of independency: Where to determine the extent to which participants can rely on available sources of information and tools in the workshops.
- Properties of the participant: participants can vary in terms of gender and educational status culture and socio-economic situation.
- Types and availability of resources of information:

  Apparently in the previous points emanating from the structural to participatory activities, they represent factors that have a great impact on the behavior of the participants and the final outcome of the participation process.

2. Behavioral Factors: In addition to structural factors, there are many behavioral factors that can be identified in the following points:
- The exchange of ideas and information: Where group members who are involved in the design workshop have different tendencies and trends and therefore do not guarantee the efficiency of exchanging information.
- Participatory process output: Through which to assess what has been achieved the goal of participation, which was specified in the initial preparation stages for participation.
- The type and sequence of interaction: Is there any interaction between participants in reaching for design ideas, and whether there is negative or positive cooperation, and whether those types of interactions between individuals involved changed over time since the beginning of the participatory process to end.
- Incentive and motivation: Where participants can varies on their level of incentive or motivation to be able to generate design ideas as a response to the design problem.
- Participant self-confidence: the believe level of the participant in their own creative ability and to behave accordingly (Hasanin, 1997).

According to Burns (1979) classification of the participatory design process which could be clarified in the following four categories:

1. **Awareness:** This experience includes discover or rediscover various facts about the situation and context design and the nature of the design problem in general so all individuals who take part in the process have the same language in terms of their experience, interests and same inquiries.

2. **Perception:** These include the transition from awareness of the situation to understanding in terms of the physical and cultural, social and economic divisions. At this stage subscription process occurs between individuals involved in the understanding of the situation and the objectives and design ideas to be reached and participants' expectations for the final product to the participatory process.

3. **Decision Making:** This phase focuses on determining the design situation. At this point participants can do put physical ideas on their own, based on their preferences as they can give their views to professionals to use it as resources to create alternatives and final plans.

4. **Implementation:** Some studies show that a lot of design processes proceed until the third phase which is the decision-making design, while other studies confirm the importance of presence of participants until the end of the implementation process of the design output
CONCLUSIONS AND DISCUSSION

By reviewing the literature and research comparing and contrasting the ways and methods of education, various conventional and revolutionary methods were reached that in addition to the factors like aesthetic, formalism and technological considerations, designers should take into account social and cultural values and needs of the user considerations.

According to Iveren and Buur (2002), traditionally, teaching design based on project-type design exercises focuses on students’ understanding of design theory – not to practice design. This way, students are unable to move beyond the basic enhancement of the methods being introduced to them in the design course. Also, the learning process in this type of exercises lacks the training that reflects the activities necessary for learning-inaction of design capability (Iversen and Buur, 2002). According to Hasanin (1997), the participatory design approach and design through the use of games represents a direct application of the collective creativity that offers users participation techniques within the design process, which also contribute to raising the awareness of the participants that there is a wide range of design alternatives and that there is no so-called best design solution to the problem. Also the individuals involved in the participatory design process they have a sufficient amount of design experience to achieve many of the foundations of the desired design in design ideas posed (Hasanin, 1997).

As Sanders and Stappers (2008) mentioned, the co-creation involvement in the design process will bring change on the way designer think and evaluate which will change how and what designer attempt to design and who designs, concomitantly this will affect the methods and tools used with in the design process and the training and education process as well. Hasanin (1997), has concluded an abstract presentation of the differences between traditional design process and the participatory design model, addressing properties that characterize the style of design has clarified in the following table:

<table>
<thead>
<tr>
<th>Participatory design</th>
<th>Conventional design</th>
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</thead>
<tbody>
<tr>
<td>1. Addresses a narrow range or small groups</td>
<td>Addresses wide scope and large groups</td>
</tr>
<tr>
<td>2. Local</td>
<td>National and international</td>
</tr>
<tr>
<td>3. Uses available technology</td>
<td>Uses advanced technology</td>
</tr>
<tr>
<td>4. Humane oriented</td>
<td>Political orientation</td>
</tr>
<tr>
<td>5. Takes into account the needs of the user</td>
<td>Takes into account the needs of the client and designer preferences</td>
</tr>
<tr>
<td>6. Design process and the final product oriented</td>
<td>Product oriented</td>
</tr>
<tr>
<td>7. Focuses on the meanings and cultural values and</td>
<td>Focuses only on the Formal considerations</td>
</tr>
</tbody>
</table>
In conclusion, design is part of human activities that affect the everyday experiences and actions. Antoniades (1992) noted that designers face a challenge to create environments that support and enhance human activities. And cities, buildings and environmental visual components are a result of cultural factors and social and economic development. In this regard, society gets the physical environment in which society wishes for. This requires designers to be responsible towards those factors that support the design of a responsive environment.

In response to the rapid change in the profession, three approaches have been introduced in the last two decades to promote social and ethical responsibility of design. They are programming and evaluating after use, and participation, referring to them as a basis for social and ethical approach to design and therefore it is characterized by three aspects can be summarized as follows (Salama, 1995):

1. Determine the human and social needs in the context of the environment in which they reflected the social and behavioral aspects, geographical, cultural, climatic, political and economic.
2. Assessment of the built environment is then the process of taking decisions and adjustments.
3. Involve people who are affected by the built environment in the decision-making process.

REFERENCES


**Author:**

**Abeer A. Hasanin**

*Helwan University, Cairo, Egypt*

*Carleton University, Ottawa, Canada*

abeerhasanin@gmail.com