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The Integration of Social Issues in Design Education as a Catalyst towards Social Sustainability

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Abstract
This research focuses on how to enforce the social pillar of sustainability through design education and more specifically through an assignment of a real-life project given to design students. This need derived from previous research, which suggests that 'change' towards social sustainability, should focus on two sectors: Education and industry. In this study, the suggestion will be realized through a proposed real-life project that aims at the promotion of literacy in a children's hospital environment. All students are involved in a creative design process starting with the problem analysis, which requires the identification of the nature and requirements of the task and the development of a plan of ideas and mechanisms, to answer the brief. Then they proceed with visual and textual research and conceptual development. Students generate concepts, produce rough ideas and explore a number of visual answers to the brief, which are analyzed in terms of project objectives. Project development is the next stage where ideas are further developed and explored implementing appropriate methods and techniques. The final stage of the process includes the final presentation, critique, feedback and then its realization. Through the above design process, the students acknowledged the needs of the community and how social issues can be assimilated in a design project to satisfy and enhance the social pillar of sustainability.

Keywords: Design; Education; Social Sustainability

1. Introduction

Previous research on an interdisciplinary educational approach to students' design projects on the sustainability of graphic and interior programs, showed that among the three pillars of sustainability, the social pillar was the one that was engaged the least.

As noted in the study, there is an emergent need to enforce the social pillar of sustainability through design education. The results showed the focus should concentrate on education and industry - from the student to the designer, the producer, and the client. All can be catalysts for a positive change. According to Ioannou and Kafaridou (2018), there is a need to work further on this issue. As suggested, the inclusion of interdisciplinary courses in the design education curriculum on design and sustainability should emerge, to empower the involvement of students in the social aspect of sustainability. Moreover, this can work well with a proposed real-life project that will target different groups of our society. This will offer a hands-on experience and a broader overview of the sustainability concept, as it is believed that design education has a major role to play in the delivery of sustainability in society today.

In this current study, students are involved in a real-life project with the aim to promote literacy within a hospital environment. The interest is to focus on a very sensitive target group of the community; the children, who are patients and visiting the local public

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hospital for treatments. Students were asked to work with a particular design process that required social inclusion at every stage of the process. At the finalization of the project, it has been observed that students employed specific design decisions that foster the inclusion of visitors, patients, and staff into a socially interactive environment.

2. Literature Review

2.1 Social Sustainability

Lapithis, Papadopoullou, Postekkis, Tsaousis, Chrysochos (2017) note the following:

Social sustainability is mainly concerned with the creation and maintenance of the quality of life of people within a society. It gives emphasis to the protection of the psychological and physical health of all people, it encourages social cohesion and provides education to people who in turn have the opportunity to contribute to society as a whole and develop relationships within it. Confronting individuals equally provides equal opportunities to all while giving more emphasis to those in need, encourages and educates the diversity and provides social cohesion between people with different status. Eventually, a quality of life which has to do with basic needs is cultivated on a personal, group and community level. (pp 9-10)

In agreement with the above in this study emphasis is given to the social sustainability through the engagement of children into activities, which target the patients' social inclusion to achieve the promotion of literacy, in the hospital environment.

2.2 Sustainable Design Education

As Kennedy states in the Icograda Design Education Manifesto (2011), design education should "imbue in students a sense of personal responsibility for the environmental and social impact of their practice" (p.10).

Design continuously evolves in the light of information revolution, technological, social, economic and environmental change. Consequently, design education needs to be redefined and escape from the traditional didactic systems, to embrace 'change' in all its aspects. It should lead to a new framework that is based on problem-solving, critical thinking and engagement, ethics, collaborations, to meet the needs of an increasing population. Triggs (2011), states that: "In education, courses are orienting themselves toward socially conscious design and, in a political climate where every academic discipline is being scrutinized for its 'usability', this seems especially apt" (p.126).

Considering the above, design education should be 'active' and adequately responsive to the unfolding changes of the era in which we live, that is flexible and pluralistic. Sustainable design education provides holistic design approaches that create balanced relationships between human activities and the environment. It is vital and necessary as it embraces the global culture, social and economic justices, and inclusion. It prepares designers that can think creatively and holistic, communicate, and facilitate within the society, in a positive manner. Additionally, as Nichols & Shorb (2007) quoted in Nichols and Adams (2011) note that teaching approach that merges the traditional boundaries of each discipline, promotes the community involvement and collaboration among stakeholders.

In 2009 Summit of the Designers Accord, during the discussion around the topic of design education and sustainability, it is noted that students should become active participants in real-world design situations and through education to empower them with the ability to create social connections to their design work. (Designers Accord, 2009)
In agreement with the above, we suggest that design curriculum should integrate the concept of sustainability, by creating cross-disciplinary environments, the inclusion of stakeholders and real-world systems.

2.3 The Enforcement of Social Pillar

In this study, the trigger to implement a real-life project in one of the Interior design courses was the result of the previous study. Students were involved in design projects that have been designed to challenge creativity towards the completion of innovative artifacts with minimum environmental impact. The aim was to integrate a vigorous approach to problem-solving, towards the satisfaction of three parameters; sustainability, function, and aesthetics. Following a case study approach, the research focused on the analysis of particular sustainable practices students employed in their proposals. This analysis led to taxonomy of those, and offered an insight view of how a designer can produce sustainable work. The students' cases showed evidence of various sustainable practices that were categorized according to the following three pillars of sustainability; social, economic and environmental. Results showed the sustainable practices under the three pillars were not distributed evenly; particularly the higher number of practices was under the environmental pillar, then the economic and finally, the pillar, which was the least engaged, was the social. The research on this interdisciplinary educational approach into efficient three-dimensional design suggested that through the inclusion of a real-life project in the design program, could promote further social sustainability issues (Ioannou & Kafaridou, 2018).
This view is also supported by Eizenberg and Jabareen as they write that there is a lack of theoretical and empirical studies regarding social sustainability. Furthermore, they note that the literature reveals that social pillar was incorporated late into discussions on sustainable development. (Eizenberg & Jabareen, 2017)

2.4 Design for Social Sustainability

Design for social sustainability creates a new role for the designer. A role that becomes more diverse as they do not only put themselves forward as experts or design specialists, but they have the role of the facilitator that collaborates within multidisciplinary teams that might consist of organizations, local and global institutions, local authorities, and people coming from different disciplines. (Jégou & Manzini, 2008). This is how we can move forward and achieve truly sustainable design environments.

Story, Mueller, and Mace (1998) in The Universal Design File: Designing for People of All Ages and Abilities, outlined seven principles of what has come to be known as "Universal Design" in North America, and "Inclusive Design" or "Design for All" in other parts of the world. Having evolved since the 1970s, this approach to design seeks to create environments that are "usable by all people to the greatest extent possible." According to Story et al, these spaces should encompass:

• Equitable use: The design is useful and marketable to people with diverse abilities.

• Flexibility in use: The design accommodates a wide range of individual preferences and abilities.
• Simple and intuitive use: Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.
• Perceptible information: The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.
• Tolerance for error: The design minimizes hazards and the adverse consequences of accidental or unintended actions.
• Low physical effort: The design can be used efficiently and comfortably, and with a minimum of fatigue.
• Size and space for approach and use: Appropriate size and space is provided for approach, reach, manipulation, and use, regardless of the user's body size, posture, or mobility.

The students of the Interior design program followed this approach on a project, in collaboration with the Pancyprian Organization for the Promotion of Literacy and the support of a local trading company. This enables them to heighten their design proposals with qualities that would not only be easier to use but would most likely increase productivity and social inclusion. The aim was to promote literacy in the environment of a children's hospital in Nicosia, Cyprus. Students were asked to prepare design proposals that will enhance and promote this issue among the children who are patients and visiting the public hospital for treatments. The requirements of the project submission included research, clients' profile, preliminary drawings, plans (scale 1:50), section (scale 1:50), interior elevation (scale 1:50) and 3D drawings.

3. Methodology

For the purpose of this research, the case study methodology is implemented. This allowed the collection of data through the analysis of students' projects and the assessment of the results. The total number of cases examined was eight. All were supervised by lecturers during the design process, by means of examining and monitoring the various perspectives of research that design students were investigating, at each stage. In mid-semester, all stakeholders were invited to view the students' visual suggestions and progress in a pin-up presentation. The purpose of this meeting was to get all involved – students, stakeholders and lecturers – into a dialogue on the various views of the students' proposals. The stakeholders gave their own input, identified inadequacies and gave feedback according to each one's expertise and point of view. This offered a beneficial and constructive discussion among all. Finally, at the end of the semester, students submitted their final proposals and based on the design process, were evaluated, and conclusions were drawn upon.

The methodology for collecting data derives from the stages of the design process where each stage was analyzed in terms of the parameters employed in the proposals that reflect social aspects of sustainability. Papanek, (2005) writes, "All that we do, almost all the time, is design, for design is basic to all human activity. The planning and patterning of any act toward a desired, foreseeable end constitutes the design process" (p.3). The design process is important in assisting the students to meet the requirements of the

brief. During the process the students analyse, research, collect data, experiment, design, and gain knowledge and skills on the subject matter. Within the design process we propose four stages:

- Problem analysis and research
- Conceptual development
- Project development
- Final presentation, critique, feedback and realization

In this study, the design process challenges the creativity of the students and offered them the opportunity to acknowledge the needs of the community and how social issues can be assimilated in a design project, to promote literacy among targeted groups in a hospital environment, by adopting appropriate design strategies.

3.1 Stage one: Problem Analysis and Research

An identification of the nature and requirements of the brief promotes a creative and experimental response. Students develop a plan on how to solve the problem, taking into account any limitations imposed by the brief. What is the message? What are the requirements? How the form will communicate the message? These are some requirements that students might have to consider. Both formation and atmosphere are important factors for the success of the public spaces of any establishment. Creating a strong identity is what sets a successful outcome and gives sensual and emotional cues to patients and visitors. Students got a very good understanding of the nature of the stakeholders through research and analysis of the specificities of each group: The Pancyprian Organization for the Promotion of Literacy - the initiator of the project, the trading company - the sponsor and the Makario children's hospital environment - where the project will be realised. Moreover, it was very important that students identified the demographics, psychographics and any needs and interests of the children visiting the hospital - the target audience of the project.

3.2 Stage two: Conceptual Development

According to Pile (1995), concept development is one way to design, that will rise beyond ordinariness. The creation of a strong concept, an idea, a theme, will guide thinking and bring all of the diverse parts of a design into a strong relationship.

The conceptual development is the stage of the design process that students draw on the research gathered, to assist creating concepts to guide all the design decisions that will be taken during the process until the completion of the final proposal. At this stage, students meet with representatives from all the groups of stakeholders to address the concept of the project and present the preliminary drawings

3.3 Stage three: Project Development

Following the meeting's discussion and feedback, students proceeded to the project development stage. Their design solutions are further refined and developed. These refer to all the elements of the space, from the equipment to the interior design of the space and its functionality, to the atmosphere and the specificities of the hospital space. The design of a hospital environment, both in and outside, is an important factor for the wellbeing of the patients and visitors.

3.4 Stage four: Final Presentation and Critique

In the classroom, a common form of evaluation is the studio criticism, Hokanson (2012) writes the following:

Design critique is a broad concept and has a variety of forms and descriptors. In general use, "critique" means a systematic and objective examination of an idea, phenomenon, or artifact. Within the design, use of the term also includes the evaluation of an idea as well as the act itself. (p.74)

4. Results

Students' proposals were analyzed under the four stages of the design process. Here below we present the visual outcomes, the significance of the project and the engagement of socially sustainable design at every stage of the process.

4.1 Problem Analysis and Research

During this stage, students worked towards the requirements of the project and presented their findings. In regard to the Pancyprian Organization for the Promotion of Literacy, students noted that is a local organization founded in 2012, aiming to "enlighten the public regarding the importance of literacy and the coordination of related events" (Grammatismos, n.d.). Students presented the visual identity of the organization and moments of their activities through a panel presentation. (Figure1). Concerning the trading company, students noted its corporate social sustainability and activities within the local community that reflect the involvement of the company in fair trade. (Figure 2)

Hospitals have specific operational procedures, codes, and regulations that should guarantee smooth and safe operations, which need to be investigated and applied. In regards to the Makario children's hospital environment, students gained first-hand experience of the space through a guided tour by the head-nurse. At this stage, students acknowledged the interior design elements of the space i.e.: layout and materials. During this initial contact, the students asked numerous questions to determine the function of the interior space, and the visitors' and employees' space needs. All these were visually documented and at a later stage, presented in class. (Figure 3)

Moreover, it was very important that students identified the demographics, psychographics and any needs of the target group of the project, the children. They were also informed that every day the waiting area hosts around 50 to 60 kids with their parents. As these kids are in pain or fear and as a hospital might refer to many negative aspects, including sadness, weakness, and suffering, they have the need to experience a positive environment. Students taking into consideration the above carried out research on various parameters including design elements like color, patterns, and form. Moreover, they investigated a variety of activities that could help towards the enhancement of the space positively, aiming to promote sensory play to provide visual, tactile, and auditory stimulation. (Figure 4)

Figure1: Visual research on the Pancyprian Organization for the Promotion of Literacy. UNIC student: Violaris A., Supervisor Ioannou K., Source Ioannou 2018

Figure 2: Visual research on the trading company. UNIC student: Violaris A., Supervisor Ioannou K., Source Ioannou 2018

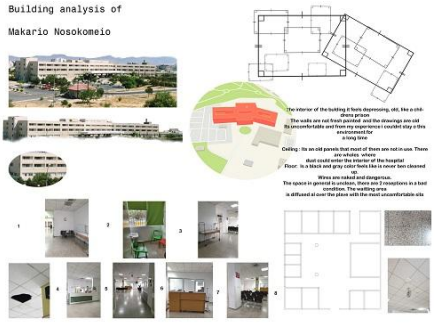

Figure 3: Site analysis of the current hospital environment. UNIC student: Violaris A., Supervisor Ioannou K., Source Ioannou 2018

Figure 4: Visual presentation of the target group and activities. UNIC student: Pashali C., Supervisor Ioannou K., Source Ioannou 2018

4.2 Conceptual Development

The students developed concepts inspired from various themes; nature, technology, contemporary street art, and character development. (Figure 5, 6). These themes are extracted from today's society matters or concerns and were chosen by the students in an attempt to create a stronger connection with the children's psychological world, consequently a beneficial and inviting environment for them. Moreover at this stage, students meet with representatives of all the groups of stakeholders to address the concept of the project and present the preliminary drawings. (Figure 7)

Figure 5: Visual presentation of concept. UNIC student: Violaris A., Supervisor Ioannou K., Source Ioannou 2018

Figure 6: Visual presentation of concept. UNIC student: Jahandar S., Supervisor Ioannou K., Source Ioannou 2018

Figure 7: Preliminary drawings presentation to the stakeholders. Source Ioannou 2018

4.3 Project Development

At this stage, the design proposals were developed and finalized. One proposal was based on an installation which allows the children to interact and create characters, various color schemes, stories, and fairytales. It was also suggested to equip the space with soft pieces of furniture for sitting both for children and their parents. (Figure 8). This decision does not exclude people with individual preferences and abilities, as the use of equipment of different scale was suggested. Another design proposal was based on a tree structure located in the middle of the space, surrounded by a sitting area to facilitate cyclical flow and easy circulation and interaction among the users. The structure also accommodated a number of mobile elements which 'house' activities for the young visitors. Similar elements appear in other proposals as well. (Figure 9).

Figure 8: Presentation of the proposed interior space (soft furniture arrangement). UNIC student: Pashali C., Source Ioannou 2018

Figure 9: Presentation of the proposed interior space (tree installation and mobile). UNIC student: Rashdan Y., Source Ioannou 2018

4.4 Final Presentation and Critique

The final design proposals of all students presented to the committee of the stakeholders for critique and feedback. The committee decided to proceed with the merging of particular elements from each proposal, as all were highly appreciated. Among others, the tree element to accommodate various books for kids of all ages; soft modular furniture for sitting and flexible arrangement and various interactive activities; were utilised. (Figure 10)

Figure 10: Final design proposal, Source Ioannou 2018

5. Discussion and Conclusions

Through the stages of the design process students gained knowledge on the major issue of social sustainability. Within this context the nature of the stakeholders and the hospital environment were acknowledged. Students developed particular strategies to address the issue of the promotion of literacy in the area of the hospital and achieved an enhancement of the general atmosphere that would not only be easier to use, but would most likely increase productivity and social inclusion.

The final design proposal complies with the "The Universal Design File: Designing for People of All Ages and Abilities," by Story, Mueller, and Mace (1998). The principle of 'equitable use' was satisfied with the employment of the tree element, which accommodates various books for kids of all ages and people with diverse abilities. Moreover, the design of soft modular furniture for sitting and flexible arrangement reflects the 'low physical effort', the 'tolerance for error' and 'size and space for approach and use' principles. Further, 'flexibility in use', 'simple and intuitive use' and 'perceptible information' principles are reflected through the various interactive activities the sensory-rich panel, which provides visual, tactile and auditory stimulation.

The employment of the particular design process was vital for creating an inclusive environment of all stakeholders and at the same time promoting literacy. Sustainable design education and responsible design can be the catalysts for social sustainability.

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