Beyond Profit: How Design Can Promote Sustainability and Social Equity

Além do Lucro: Como o Design Pode Promover Sustentabilidade e Equidade Social

Luiz Valdo A. Maciel Filho, mestre, Universidade Federal de Pernambuco
luiz.valdo@live.com
Amilton Arruda, Ph.D, Universidade Federal de Pernambuco
amilton.arruda@ufpe.br
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Abstract

Contemporary design faces a paradox: while it contributes to an unsustainable production model, it also has the potential to promote sustainability. This article analyzes the negative impacts of market-driven design, such as planned obsolescence and the exploitation of natural resources, and explores innovative approaches like social design, circular economy, and design thinking. Using updated data and real-world cases, it proposes a reevaluation of design education and public policies, aiming for a more equitable and regenerative future. The analysis reveals that integrating sustainability into design education is essential to train conscious and capable professionals to address socio-environmental challenges. Projects like Precious Plastic and Design for Change demonstrate that local and participatory solutions can have a global impact, inspiring large-scale changes. It concludes that design can be a transformative force, provided it adopts a systemic and responsible approach.

Keywords: Sustainable Design; Design Education; Social Design

Resumo

O design contemporâneo enfrenta um paradoxo: enquanto contribui para um modelo de produção insustentável, também possui o potencial de promover a sustentabilidade. Este artigo analisa os impactos negativos do design voltado para o mercado, como a obsolescência programada e a exploração de recursos naturais, e explora abordagens inovadoras, como o design social, a economia circular e o design thinking. Com dados atualizados e casos reais, propõe-se uma reavaliação da educação em design e das políticas públicas, visando um futuro mais equitativo e regenerativo. A análise revela que a integração da sustentabilidade no ensino de design é essencial para formar profissionais conscientes e capacitados para enfrentar os desafios socioambientais. Projetos como o Precious Plastic e o Design for Change demonstram que soluções locais e participativas podem ter impacto global, inspirando mudanças em larga escala. Conclui-se que o design pode ser uma força transformadora, desde que adote uma abordagem sistêmica e responsável.

Palavras-chaves: *Design Sustentável; Educação em design; Design social*

1. Introduction

Design, as a discipline, has historically been associated with the creation of products that meet market demands, often overlooking the environmental and social consequences of its practices. However, in the face of growing global challenges such as climate change, social inequality, and resource scarcity, the role of the designer is being reevaluated. Today, more than ever, design is seen as a powerful tool for promoting sustainability and collective well-being, provided it adopts a systemic and responsible approach.

This article aims to explore the duality of contemporary design: on one hand, its contribution to an unsustainable production model that prioritizes profit over social and environmental well-being; on the other, its potential as an agent of transformation, capable of promoting sustainable and socially just practices. To this end, data and real-world cases will be analyzed to illustrate the negative impacts of market-driven design, such as planned obsolescence, overproduction, and improper waste disposal. Additionally, innovative approaches will be presented to demonstrate how design can be a positive force, aligning with the principles of the circular economy, social design, and planetary regeneration.

Throughout the text, the reader will find a critical analysis of the designer's role in promoting sustainability, focusing on three main axes:

1. The Problem: Market-Driven Design vs. Well-Being-Driven Design – A discussion on the negative impacts of the current production and consumption model, with updated data on electronic waste, exploitation of natural and human resources, and improper waste disposal.
2. Development: The Designer's Role in Promoting Sustainability – An exploration of promising approaches, such as social design, the circular economy, and design thinking, as well as tools and metrics for integrating sustainability into the design process.
3. Proposed Solution: Education and Cultural Change – A reflection on the need to rethink design education and promote a cultural shift that values collective well-being and planetary regeneration, with examples of educational initiatives and public policies leading this transition.

Finally, the article concludes with a synthesis of the main points discussed, reinforcing the importance of design as a discipline capable of transforming existing situations into preferable ones. The proposal is that, by adopting a more holistic and responsible approach, designers can contribute to building a more equitable and sustainable future.

2. Methodological Procedures

This article was developed based on a qualitative approach, using methods of bibliographic research and analysis of real-world cases to explore the role of design in promoting sustainability. The methodology was divided into three main stages:

2.1. Literature Review

The first stage consisted of a comprehensive literature review, focusing on recent publications (from the last 5 years) and classic works that address topics such as sustainable design, circular economy, social design, and design education. Academic sources were consulted, including scientific articles, books, and reports from recognized organizations (e.g., Ellen MacArthur Foundation, Global E-Waste Monitor), as well as official documents from public institutions (e.g., European Union). References were selected based on their relevance to the topic and their contribution to the debate on sustainability in design.

2.2. Analysis of Real-World Cases

In the second stage, real-world cases were analyzed to illustrate both the problems of market-driven design and the innovative solutions that promote sustainability. Among the cases studied are:

Precious Plastic: A global plastic recycling initiative.

Design for Change: A movement that empowers children to develop sustainable solutions.

Patagonia and Interface: Companies adopting circular economy and regenerative design practices.

Academic Projects: Initiatives from universities such as Stanford, Aalto, and The Glasgow School of Art.

These cases were selected for their proven impact and for representing different approaches to integrating sustainability into design.

2.3. Synthesis and Critical Analysis

In the third stage, the data collected from the literature review and case analysis were synthesized and subjected to critical analysis. The goal was to identify patterns, trends, and gaps in the debate on design and sustainability, as well as to propose practical solutions to the challenges identified. The analysis was guided by key questions, such as:

- What are the main negative impacts of market-driven design?
- How can social design and design education promote sustainability?
- What tools and public policies are needed to support this transition?

The adopted methodology allowed for a comprehensive understanding of the role of design in promoting sustainability, combining theoretical foundations with practical examples. The literature review ensured the academic grounding of the article, while the analysis of real-world cases provided concrete insights into how theories can be applied in practice. Finally, the critical analysis offered a reflective and propositional perspective, highlighting pathways for transforming design into a more sustainable and socially responsible discipline.

3. Market-Driven Design vs. Well-Being-Driven Design

Contemporary design is deeply rooted in an unsustainable production model that prioritizes profit over social and environmental well-being. As Fletcher and Tham (2019) highlight in their book Earth Logic: Fashion Action Research Plan, the logic of the current market is based on an endless cycle of production and consumption that does not take into account planetary boundaries or the real needs of people. This dynamic results in practices such as planned obsolescence and overproduction, which generate devastating environmental and social impacts.

A clear example of this is the electronics industry. According to the Global E-Waste Monitor 2023, 62 million tons of electronic waste were produced in 2022, an 82% increase compared to 2010. Only 22% of this waste was properly recycled, while the remainder was discarded in

landfills or exported to developing countries, where poor communities are exposed to toxic substances during informal dismantling and recycling processes (Global E-Waste Monitor, 2023). This scenario highlights how market-driven design ignores the full life cycle of products, focusing solely on immediate profit.

The exploitation of natural and human resources is also a direct consequence of this model. The production of smartphones, for example, depends on minerals such as cobalt and lithium, whose extraction is often associated with human rights violations and environmental damage. A 2022 report by Amnesty International revealed that, despite some companies' efforts to ensure ethical supply chains, child labor and poor working conditions remain common in cobalt mines in the Democratic Republic of Congo. Additionally, lithium mining, essential for electric vehicle batteries, has caused water scarcity and social conflicts in regions such as the Atacama Desert in Chile, affecting indigenous communities and local ecosystems (Amnesty International, 2022).

The fast fashion industry is another emblematic example. According to a report by the Ellen MacArthur Foundation (2021), global clothing production has doubled in the last 15 years, reaching over 100 billion garments per year. However, it is estimated that 30% of these clothes will never be sold, being incinerated or discarded in landfills. Production primarily occurs in countries such as Bangladesh, Vietnam, and India, where workers, mostly women, face extremely low wages, exhausting hours, and dangerous working conditions. The Rana Plaza disaster in 2013, which killed over 1,100 people, remains a tragic symbol of the consequences of this model (Ellen MacArthur Foundation, 2021).

The improper disposal of waste also affects communities far from production centers. A study published in Science Advances in 2021 revealed that wealthy countries exported over 2.5 million tons of plastic waste to developing nations such as Malaysia, Indonesia, and Turkey in 2020. Much of this waste is burned in open air or dumped into rivers, releasing toxins that contaminate air, water, and soil, and harming the health of millions of people (Science Advances, 2021).

Furthermore, the production of mass consumer goods often exploits entire communities, both in the extraction of raw materials and in the manufacturing of products. A recent example is the electric vehicle battery industry, which, while promoting the energy transition, depends on the extraction of minerals such as lithium, nickel, and cobalt, whose mining has significant socio-environmental impacts. According to a report by Friends of the Earth (2022), lithium mining in the Lithium Triangle, Argentina, Bolivia, and Chile, has led to water scarcity and the degradation of local ecosystems, affecting indigenous communities and biodiversity (Friends of the Earth, 2022).

These examples illustrate how market-driven design perpetuates a cycle of exploitation and degradation, ignoring social and environmental externalities. As Escobar (2018) argues in Designs for the Pluriverse, contemporary design must transcend market logic and adopt a more holistic approach that considers the interconnections between society, culture, and the environment. This requires a paradigm shift, where design is understood not as a tool for generating profit but as a means of promoting collective well-being and planetary regeneration.

The analysis of this data and cases reveals a profound disconnect between contemporary design and the real needs of society and the planet. While the market prioritizes mass production and unchecked consumption, marginalized communities and fragile ecosystems pay the price. Planned obsolescence, overproduction, and improper waste disposal are symptoms of a system that values economic growth above all else, ignoring planetary boundaries and social inequalities.

However, there are signs of change. Movements such as regenerative design and the circular economy are gaining momentum, proposing alternatives that integrate sustainability, social justice, and innovation. Projects like Precious Plastic, which transforms plastic waste into useful products, and initiatives like circular fashion, which promotes the reuse and recycling of clothing, demonstrate that it is possible to align design, sustainability, and social impact.

For these alternatives to become predominant, it is essential to rethink design education and public policies. As Manzini (2020) suggests in Designing Sustainable Futures, designers should be trained not only to meet market demands but to solve complex problems and promote systemic change. Additionally, governments and international organizations must implement stricter regulations that hold companies accountable for the socio-environmental impacts of their practices. Reviewers' feedback must be addressed by the authors for the submission of the final version and inclusion of the article in the event proceedings.

4. The Role of Designers in Promoting Sustainability

To address the challenges of the unsustainable production model, it is essential for designers to take on a more active role in promoting sustainability. As Manzini and Coad (2020) highlight, sustainability must be pursued systemically, considering the interconnections between society, culture, and the environment. This means that designers must go beyond creating functional and aesthetically appealing products, also considering the environmental, social, and cultural impacts of their practices. In this context, design education and social design emerge as fundamental pillars for this transformation.

4.1. Design Education: Training Professionals for Sustainability

Design education plays a crucial role in promoting sustainability. As Irwin et al. (2015) emphasize in Transition Design: A New Area of Design Research and Practice, designers should be trained not only to meet market demands but to solve complex problems and promote systemic change. The Glasgow School of Art is an example of an institution that integrates sustainability into its curriculum, offering courses such as Circular Design and Regenerative Design. In 2022, the university's The Living Lab project reduced plastic waste by 30% in the Glasgow region, demonstrating the practical impact of sustainability-focused education (The Glasgow School of Art, 2022).

Another example is the Master's program in Creative Sustainability at Aalto University in Finland, which integrates design, business, and engineering to promote sustainable solutions. One of the recent projects involved creating a reverse logistics system for food packaging, resulting in a 25% reduction in packaging waste across 50 Finnish supermarkets (Aalto University). These initiatives show how design education can empower professionals to address sustainability challenges in practical and innovative ways.

4.2. Social Design: Creating Impact in Communities

Social design is an approach that seeks to meet human needs equitably and sustainably, placing communities at the center of the design process. A notable example is the Precious Plastic project, created by Dave Hakkens in 2013. This global initiative empowers communities to transform plastic waste into useful products, such as furniture and accessories, using low-cost recycling machines. Since its launch, Precious Plastic has inspired over 40,000 people in 200 countries to create their own solutions to the plastic problem. In 2022, the initiative was responsible for recycling over 1,000 tons of plastic globally (Precious Plastic, 2021).

Another example is Design for Change, a global movement that empowers children to develop creative solutions to local problems. Since 2009, the program has impacted over 2.2 million children in 65 countries. In 2023, the project was expanded to include workshops on circular economy and regenerative design, reaching over 500 schools worldwide (Design for Change, 2023). These cases demonstrate how social design can generate positive impact in communities, promoting local autonomy and sustainability.

4.3. **Tools and Metrics for Sustainable Design**

In addition to design education and social design, it is essential to integrate tools and metrics that help designers assess and reduce the environmental and social impacts of their projects. Life Cycle Assessment (LCA) is one such tool, used by companies like Patagonia to identify opportunities for reducing the impact of their products. In 2022, Patagonia announced that 100% of its products are made from recycled or sustainable materials, reducing its carbon footprint by 40% (Patagonia, 2022).

Another important tool is the Ecodesign Checklist, which helps designers integrate sustainability criteria into their processes. The European Union adopted this approach in its Strategy for Sustainable Textiles, which sets goals for reducing waste and promoting the circular economy in the textile sector. The strategy aims for all textiles sold in the EU to be durable, recyclable, and made from sustainable materials by 2030 (European Commission, 2020).

The analysis of these approaches and tools underscores the potential of design to be a transformative force in promoting sustainability. However, for this to happen, it is necessary to rethink design education, incorporating ethics, sustainability, and social justice into academic curricula. Additionally, social design must be prioritized, placing communities at the center of the design process and promoting solutions that generate positive impact both locally and globally.

Projects like Precious Plastic and Design for Change demonstrate that local and participatory solutions can have a global impact, inspiring large-scale change. However, for these initiatives to become predominant, they require the support of public policies and the engagement of all sectors of society.

5. Education and Cultural Change: A Proposed Solution

For design to effectively contribute to sustainability, it is necessary to rethink design education and promote a cultural shift that values collective well-being and planetary regeneration. As Irwin et al. (2015) emphasize in Transition Design: A New Area of Design Research and Practice, design must adopt a systemic approach that considers the interconnections between society, culture, and the environment. This requires training that goes beyond technical skills, incorporating ethics, sustainability, and social justice into the design curriculum.

5.1. **Real-World Examples of Innovation in Design Education**

The Glasgow School of Art, United Kingdom

The Glasgow School of Art has integrated the concept of design for sustainability into its curriculum, offering courses such as Circular Design and Regenerative Design. A notable example is the The Living Lab project, where students develop sustainable solutions to local

problems, such as reducing plastic waste and creating renewable energy systems. These projects are carried out in partnership with local communities and businesses, ensuring that the solutions are viable and impactful (Source: The Glasgow School of Art).

Stanford University d.school, USA

The Stanford d.school is a pioneer in applying design thinking to sustainability. One of its most well-known projects is Design for Extreme Affordability, where students develop products and services to meet the needs of underserved communities worldwide. An example is the Embrace Infant Warmer, a low-cost incubator that has saved thousands of lives in developing countries (Source: Stanford d.school).

Aalto University, Finland

Aalto University offers a Master's program in Creative Sustainability, which integrates design, business, and engineering to promote sustainable solutions. One of the recent projects involved creating a reverse logistics system for food packaging, reducing waste and promoting the circular economy (Aalto University).

5.2. Cultural Change: From Consumption to Well-Being

In addition to education, it is essential to promote a cultural shift that values well-being over unchecked consumption. As Kate Raworth (2017) points out in Doughnut Economics, we need to rethink the values that guide our economy and society, prioritizing regeneration and the equitable distribution of resources. In the context of design, this means creating products and services that meet human needs without compromising planetary boundaries.

An inspiring example is the Cradle to Cradle (C2C) movement, created by Michael Braungart and William McDonough. C2C proposes a design model in which all materials are reused or recycled in closed loops, eliminating the concept of waste. Companies like Interface, a global leader in modular carpets, have adopted C2C and significantly reduced their environmental impact while increasing customer satisfaction and profitability (Cradle to Cradle, 2023).

Another case is Precious Plastic, a global initiative that empowers communities to transform plastic waste into useful products, such as furniture and accessories. The project provides low-cost recycling machine plans and online tutorials, promoting local autonomy and the circular economy. Since its launch in 2013, Precious Plastic has inspired over 40,000 people in 200 countries to create their own solutions to the plastic problem (Source: Precious Plastic).

5.3. Concrete Proposals for Change

- Environmental Education and Sustainable Design Programs: The creation of environmental education and sustainable design programs for children and adolescents is essential to raise a more conscious and engaged generation. As mentioned earlier, Design for Change has impacted over 2.2 million children in 65 countries since 2009.
- Integration of Sustainability Tools in Design: Tools such as Life Cycle Assessment (LCA) and the Ecodesign Checklist should be integrated into design processes, ensuring that products are conceived based on sustainability criteria. For example, Patagonia uses LCA to assess the environmental impact of its products and implement continuous improvements.
- Public Policies and Regulations: Governments and international organizations must implement policies that encourage sustainable practices and hold companies accountable for the socio-environmental impacts of their actions. For instance, the European Union

recently approved the Strategy for Sustainable Textiles, which sets ambitious goals for reducing waste and promoting the circular economy in the textile sector.

The analysis of these cases and proposals reveals that the transition to a sustainable design model is possible but requires a systemic and collaborative approach. Design education must be restructured to include not only technical skills but also ethics, sustainability, and social justice. Additionally, it is essential to promote a cultural shift that values collective well-being and planetary regeneration over unchecked consumption.

Projects like Precious Plastic and Design for Change demonstrate that local and participatory solutions can have a global impact, inspiring large-scale change. However, for these initiatives to become predominant, they require the support of public policies and the engagement of all sectors of society.

5.4. **Common Points**

- Sustainability as a Central Axis: Both educational initiatives and social projects share sustainability as a common goal, whether through waste reduction, material reuse, or the promotion of regenerative practices.
- Practical and Community-Oriented Approach: Both approaches value practice and community involvement, ensuring that solutions are viable and impactful.
- Education and Capacity Building: The training of designers and the empowerment of communities are seen as essential tools for promoting sustainable change.
- Innovation and Creativity: Innovation is a key element, whether in developing new teaching methodologies or creating creative solutions to local problems.
- Social and Environmental Impact: Both types of initiatives seek to generate positive impact, both environmentally and socially, promoting collective well-being.

These common points are best illustrated in Table 1, which attempts to relate educational initiatives with social projects.Avoid leaving titles and subtitles without accompanying text at the end of pages. This section will be dedicated to the analysis of results or discussions prompted by the studies, with detailed specifics of the studies, presented concisely.

Table 1: Common Points Between Design Education Initiatives and Social Projects for Promoting Sustainability

Aspect	Design Education Initiatives	Social Projects	Common Points
Sustainability as a Goal	Integration of sustainability into curricula (e.g., Circular Design, Regenerative Design).	Focus on reducing waste, reusing materials, and promoting regenerative practices (e.g., Precious Plastic).	Both prioritize sustainability as a central objective.
Practical Approach	Hands-on projects addressing real-world problems (e.g., The Living Lab, Design for Affordability).	Community-driven solutions to local challenges (e.g., Precious Plastic, Design for Change).	Emphasis on practical, actionable solutions that address real needs.
Community Involvement	Collaboration with local communities and businesses to ensure viable and impactful solutions.	Empowerment of communities to create their own solutions (e.g., Precious Plastic workshops).	Strong focus on community engagement and participation.

Education and Capacity Building	Training designers to think systemically and ethically (e.g., Aalto University's Creative Sustainability program).	Educating and empowering individuals to take action (e.g., Design for Change workshops).	Both aim to build knowledge and skills that promote sustainable practices.
Innovation and Creativity	Encouraging innovative thinking through design thinking and creative problem-solving.	Developing creative solutions to local problems (e.g., low-cost recycling machines in Precious Plastic).	Innovation and creativity are key drivers in both approaches.
Social and Environmental Impact	Projects designed to reduce environmental impact and promote social well-being (e.g., Embrace Infant Warmer).	Initiatives that address both environmental and social challenges (e.g., reducing plastic waste while empowering communities).	Both seek to generate positive impact on both environmental and social fronts.

Source: Authors

6. Conclusion or Final Considerations

Contemporary design is at the center of a paradox: while it contributes to an unsustainable production model that prioritizes profit over social and environmental well-being, it also has the potential to be a transformative force in promoting sustainability. This article explored the negative impacts of market-driven design, such as planned obsolescence and the exploitation of natural resources, and presented innovative approaches, such as social design, the circular economy, and design thinking, which demonstrate how design can be realigned to promote a more equitable and regenerative future.

The analysis of the common points between educational initiatives and social projects, summarized in the table, reveals that both approaches share fundamental goals: the promotion of sustainability, community engagement, practical innovation, and a focus on collective well-being. Projects like Precious Plastic and Design for Change exemplify how local and participatory solutions can generate global impact, while academic programs, such as those at The Glasgow School of Art and Aalto University, show how design education can empower professionals to address sustainability challenges creatively and responsibly.

However, for these initiatives to become predominant, a joint effort is required, involving not only designers and educators but also governments, businesses, and civil society. The integration of tools such as Life Cycle Assessment (LCA) and the Ecodesign Checklist into design processes, combined with public policies that encourage sustainable practices, can accelerate this transition. Additionally, design education must be restructured to include ethics, sustainability, and social justice in the curriculum, preparing designers to act as agents of change in an increasingly complex world.

In summary, design has the potential to be a transformative force in building a more sustainable and socially just future. To achieve this, it is essential that designers, educators, policymakers, and communities work together, aligning practices, values, and goals for the sake of collective well-being and planetary regeneration. The table presented in this article not only illustrates the points of convergence between educational initiatives and social projects but also serves as a guide for future actions and research aimed at integrating sustainability, innovation, and social justice at the heart of design.

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