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Systemic Design Lens for Social Innovation: Reflections from design education

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Across literature, design thinking has been acknowledged as an effective tool to address social innovation, this paper takes a closer look at systemic design framework to establish the need to go beyond the conventional design approaches by emphasising the interdependencies within systems and encouraging students to think critically about the multicausal nature of societal problems. The paper studies classroom project systemic design at NID HARYANA , finds overlap between social innovation and systemic design. While social innovation is a tool to achieve impact and desired change, systemic design is proposed as an effective tool to address the complexities that social innovation aims to address. The cases of project analysed demonstrate the wholistic nature of solutions irrespective of the SDG addressed unlike the perceived notion that few sdgs are directly aligned to social innovation. It is noted that best cases of social innovation addressed one or the other societal issues as an important vertical in addition to economical and ecological aspects of the chosen system. The paper demonstrates that Design education is at a critical juncture, demanding a shift towards addressing complex social challenges through innovative and sustainable solutions and demonstrates systemic design is an effective tool.

KEYWORDS: social innovation, systemic design, 17 SDGS

RSD TOPIC(S): Cases & Practice, Health & Well-Being, Learning & Education, Methods & Methodology, Society & Culture.

Introduction

Why teach systemic design in design education to achieve desired impact ?

Design education is at a critical juncture, demanding a shift towards addressing complex social challenges through innovative and sustainable solutions. Across literature, design thinking has been acknowledged as an effective tool to address social innovation (Chick, 2012), however, this paper takes a closer look at the systemic design framework to establish the need to go beyond conventional design approaches by emphasising the interdependencies within systems and encouraging students to think critically about the root causes of societal problems (Bijl-Brouwer & Malcolm, 2020). Systemic design stresses the need to move away from siloed thinking and encourages interdisciplinary approaches. The question arises: can it offer more than just a promise? Is social innovation always embedded within every systemic design solution? As Rizzo, Deserti, and Cobanli point out, social innovation faces many challenges due to the complexity of stakeholders and ecological systems (Rizzo et al., 2018). Design education needs to introduce systemic design and a larger vision to train and equip future leaders for change through social innovation and addressing the 17 SDGs (García-Flores & Palma Martos, 2023). García-Flores and Martos note that social innovation is an essential tool for decision-makers to achieve the SDGs and advance sustainable development (García-Flores & Palma Martos, 2023).

Why social innovation for desired change and impact ?

Social innovation, especially as discussed by Ezio Manzini, has gained significant traction in recent years. Literature reveals a growing recognition of the role design can play in social innovation (Chick, 2012; Kang et al., 2024). As Kang, Liu, and Liu note, social innovation design has emerged to trigger positive social changes, responding to the limitations of traditional models in addressing complex problems (Kang et al., 2024). Typically, the following approaches have found recognition from the design fraternity worldwide:

- **Participatory Design**: Participatory design practices are increasingly being used to address complex social issues and design for "people's purposes," indicating a move towards design for social innovation. Chick emphasises the importance of active participation from users/citizens and stakeholders to ensure that the final solution meets actual needs and requirements (Chick, 2012).
- **Systems Thinking**: There is a growing interest in applying systems thinking to social practices and sustainable models, providing an opportunity to frame and organise design activities for a deeper understanding of social innovation (Chon, 2020). Van der Bijl-Brouwer and Malcolm highlight that design is inherently systemic and that designers must be systemic in everything they do and make (Bijl-Brouwer & Malcolm, 2020).
- **Victor Papanek's Call:** As early as thirty-five years ago, Victor Papanek pointed out the designers' responsibilities with respect to major social and environmental needs (Papanek & Fuller, 1972).

Social innovation distinguishes itself from other forms of innovation and often necessitates unique processes, metrics, models, and methods (Mulgan, 2010).

Why is social innovation aligned with the theme?

Through this paper, the key question is can systemic design framework be employed to address and help achieve social innovation? The above questions rely on findings from the classroom projects at NID HARYANA , Bachelor of Design , Systems design project in semester 7. While there are other modules leading to social innovation, the same is not included in order to have a methodology focused on systemic design inputs. At the onset, the module's objective is to introduce systems thinking and be able to apply the same. The brief given to students is 17 SDG'S and Agenda 2030 and their localization in the Indian context. As the students addressed 17 SDGS using systemic design framework, did we discover potential for social change, social innovation and what is the probable arc of impact? Is the key question that this paper explores. The theme Arcs of Impact is addressed and understood through social innovation leading to desired social change. 17 SDG's and the tools used to understand and address the complex challenges, strategy and solutions that emerged from the deep dive into 17th SDGS in the Indian context formulate the research and insights.

Research Methodology

What is the data and approach to formulating insights.

Based on the Sustainable Development Goals Report 2021, industrial design students at the National Institute of Design Haryana were given a project brief on localisation of SDGs. The project brief was to identify opportunity areas and propose a systemic design. To generate insights and discover effectiveness of systemic design framework, the emphasis is on the strategy, interventions and systemic solutions to map its coordinates with social innovation and does not discuss the solutions or approach in detail. The students through primary research identified and developed an holistic understanding of the SDGs theme in the local context and followed systemic design toolkit (Systemic Design Toolkit, 2021) in below mentioned sequence :-

The students were encouraged to select a cluster of themes and understand the inter-connections amongst chosen theme cluster. In doing so, the students mapped inter dependencies within this cluster theme and further understand the relationships as reinforcing or balancing loops.

With this mapping and understanding, students were encouraged to conduct primary research and define the boundary of the problem they would like to address and focus on. On finalising a theme, based on interest and relevance in the local context, the students were guided through the tools : -

- **Framing the system**: secondary research and primary research, tools like mapping, modelling, interviews, existing state policies and schemes launched by the government aligned with sdgs.
- **Listening to the system** : and understanding the experiences of people and how interactions lead to the system's behaviour, this is parallel to theoretical inputs on systems thinking.

- **Strategic foresight** : a combination of stakeholders, resources, leverage points, drivers of change and level of intervention ranging from local village panchayat to international organisations, leading to clear direction.
- **Systemic design and Solutions** : as products, services, product service systems, and organisations.

From a total of 42 students design projects , the analysis and findings are mapped to arrive at 10 best projects that demonstrate social innovation and would be presented to discuss the insights.

Discussion and insights

Is there a Co relation between social innovation and systemic design?

Social innovation at the core is about a positive social change, and the same is possible when certain impact has been realised on ground. With the theme as ARCS OF IMPACT , the paper discusses relevance of systemic design framework, tools employed in the educational setting and its contribution in achieving intended impact as desired system. Design for social change (Rizzo et al., 2018), design justice, social design have been some of the recent expansion of design and conscious efforts to expand the scope as designers to address societal issues. Larger intent is to add new knowledge to systemic design and social innovation approaches for educators and practitioners as an outcome of this ongoing work.

While social innovation is relevant to all 17 Sustainable Development Goals, some SDGs are more directly aligned to addressing social challenges. These include goals focused on 1) poverty reduction, 2) food security, 3) health and well-being, 4) quality education, 5) gender equality, 10) reduced inequalities , 11) sustainable cities and communities . The lack of these, directly and indirectly lead to societal challenges and inequalities. Examples of some of the solutions that are promising social innovation and not directly perceived as social challenges, stemmed from the same SDG 15 Life on Land are elaborated below :-

- **Integrated Aqua Phonic System for rural India**, with key actant as farmer. The solution combines environment and ecological concerns to reduce impact of human consumption on biodiversity and life under water. It also enhances

economic conditions for the farmers and rural water body owners at the village scale. The solution focussed on economic, social and ecological aspect.

- **Pashu(cattle) Pension Scheme**: the solution takes an empathetic view on the spent animals, unintended consequences of these and proposes an insurance policy for cattle's. The solution through the scheme addresses the issue of land grazing and through the pension scheme enforce better conditions for all cattles. The solution is significant for rural population and applicable to 70 % of the rural population of the country. A social enterprise is proposed to address the same.

Another SDG 14, Quality Education directly aligned with social innovation addressed concerns and proposed solutions as discussed below: -

- Enhancing School Education through Gaming service: To encourage multidisciplinary thinking in children, gaming is proposed as in approach to assess and evaluate the application of the education principles being taught in class.
- To groom school children towards taking independent and informed choices, the service Cartolyf is proposed to learn about career choices by various means. The service helps in smooth transition to the preferred career.
- Udaan is a service that integrates industry feedback into skill education colleges and provides training to students to be better prepared. Including other examples to make the education more inclusive and affordable to, conducive for neurodivergent children.

Other social innovation examples expand to address Clean Energy, Sustainable Cities and Communities, Health, Water and Sanitation.

What did we learn about the efficacy of systemic design framework ?

Systemic design framework has allowed students for a wholistic, integrated approach , acting as a tool to address 17 SDGS . The solutions ranged from products, services, product service systems, strategy, behaviour change strategy and policy interventions. The research and the project did not initially focus on identifying SDGs under the lens of social challenges or social innovation. However, the proposed solutions have emerged as social innovation and have been mapped for the purpose of this study. Key

difference in SDGS aligned with social innovation, have society /social inequalities at the core, while other SDGs expand to address concerns of environment and economics. It is interesting to notice that SDGS which focus on biodiversity, ecology shift the focus beyond societal issues and challenges. Should the human be the key beneficiary of social innovation or expand to include ecology is an interesting tension that emerges and further challenges the current theoretical framework of social innovation. To have an overarching impact, the ubiquitous nature of the problem is what leads to impactful change! Each of the solutions presented could take the form of social innovation to implement, monitor, and map the desired changes.

Conclusion

Social innovation offers a valuable approach to implementing change, particularly by influencing behaviour through innovative product-service systems. Social enterprises are well-positioned to monitor and evaluate the impact of their initiatives, enabling them to shape governance, influence policy, and advocate for societal shifts. When the Sustainable Development Goals are viewed as a framework for achieving desired social change, social innovation provides a means to measure progress towards holistic change, balancing social, economic, and ecological factors. Social innovation has become a valuable tool for achieving impactful and positive change (García-Flores & Palma Martos, 2023)

The systemic design approach shows promise, as solutions developed through this approach have demonstrated a direct or indirect impact on addressing social issues. While much of the discussion has focused on education and learning tools, further exploration of scale and impact beyond the classroom is warranted. Social innovation prioritises the well-being of humans and society, considering the structural hierarchies embedded within society. When aligned with the SDGs, the health and well-being of the planet are also considered, recognising the intrinsic link between human and planetary well-being.

The importance of social innovation as a critical enabler of sustainable development cannot be overstated (Millard, n.d.). It highlights the need for collaborative, multi-sector approaches to addressing complex global challenges. Social innovation, though often unrecognized, is a key enabler and driver of global sustainable development. While

sustainable development initiatives have long employed social innovation principles, the explicit recognition of and engagement with social innovation networks and concepts is a more recent and mutually beneficial phenomenon.

Social innovation supports the achievement of the SDGs, and the systemic design framework enables an integrated approach, further ensuring the mitigation of negative societal changes. Systemic design offers a framework for understanding and addressing the complexities inherent in social innovation, while social innovation provides a context for applying systemic design principles to create positive social change.

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