

A STRATEGIC DESIGN LOOK AT EDUCATION CHALLENGES IN A PANDEMIC BRAZILIAN CONTEXT

UM OLHAR DO DESIGN ESTRATÉGICO PARA OS DESAFIOS DA EDUCAÇÃO NO CONTEXTO PANDÊMICO BRASILEIRO

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ABSTRACT

By increasing the social gap between students in private and public schools, the pandemic crisis has aggravated existing social problems, exposing the inequalities in Brazilian society and revealing that their consequences do not affect everyone in the same manner. Therefore, this study aims to discuss the relevance of Strategic Design as an agent of transformation through seeding strategy, envisioning social innovation in education. The research ensues from an inductive approach of exploratory nature, the collection of secondary data on the impacts of the COVID-19 pandemic on education, and the works of Ezio Manzini, Anna Meroni, and Francesco Zurlo. It also analyzes solutions already in place, referring to social projects aimed at equity in vulnerable communities. To conclude, this study presents four axes that can be the starting point to disseminate social innovation seeds aiming at constructing innovative models of social work that may reflect on a fairer and more inclusive world.

KEYWORDS: Strategic Design. Seeding. Education. COVID-19.

RESUMO

Ao aumentar o abismo social entre estudantes de escolas particulares e públicas, a crise pandêmica agravou problemas sociais existentes, escancarando as desigualdades brasileiras e revelando que suas consequências não atingem a todos da mesma forma. Diante disso, o objetivo deste estudo é dissertar sobre a relevância do Design Estratégico como agente propulsor de transformação, por meio da estratégia de sementeira, vislumbrando a inovação social na educação. O desenvolvimento se dá por meio de uma abordagem indutiva, de natureza exploratória, pela coleta de dados secundários sobre o impacto da pandemia de COVID-19 na educação, e através das obras de Ezio Manzini, Anna Meroni e Francesco Zurlo. Também se dá pela análise de soluções já existentes através de referências a projetos sociais desenvolvidos visando à equidade em comunidades vulneráveis. Para finalizar, este estudo apresenta quatro eixos que podem ser o ponto de partida para disseminar sementes de inovação social, visando à construção de modelos de serviços sociais inovadores que possam refletir em um mundo mais justo e inclusivo.

PALAVRAS CHAVE: Design Estratégico. Sementeira. Educação. COVID-19.



1. INTRODUCTION

Once we acknowledge that the world faces a crisis caused by the COVID-19 pandemic and that the keys for a better future lie in education, it is up to the entire society to engage in a broader reflection on the relationship between teachers and students, experts and knowledge, and not only through the diversity and amount of information available, but also by the processes of building and rebuilding knowledge. This new reality brings challenges that prompt researchers, educators, and communities to look to the future and glimpse new ways of operating. Fullan and Quinn (2021) - experts in new pedagogies for deep learning - corroborate this view, stressing that this incitement demands new attitudes and new behaviors. The authors emphasize the importance of a win-win proposition that offers a new purpose and a new system of public education as an instrument of transformation and social equality.

Moved by these themes, the authors sought to raise discussions on the strategic aspect of design - in the context of the global pandemic - through social projects that emerged during the pandemic, or initiatives that needed to be reformulated before the pandemic crisis. The discussions provoked in this article hope to pave the way for new perspectives on ways of operating the education system - especially in vulnerable communities - in the context of the COVID-19 situation. Thus, the raised question is: how can social innovation and seed dissemination contribute to the creation of new opportunities in the educational systems of vulnerable communities? The objective is to discuss how strategic design methodologies can contribute to transformation in ways of being, acting, thinking, and educating.

To respond to the question as well as to the objective, the article is structured in four parts: first, we talk about education in the pandemic context, about the concepts of strategic design, social innovation, and seeding; we also present the social projects we studied. In the second part, we expose the methodology; in the third one, we analyze the collected results and indicate possibilities for the dissemination of seeds; in the fourth and last part, the final considerations are listed. As a result, we observe the need and urgency of an emerging culture for a new stance from society, the government, and companies, which

may arise through the dissemination of seeds of social innovation driven by strategic design.

2. SOCIAL INNOVATION CENTERED ON EDUCATION

2.1 Education in a pandemic context

The new reality the pandemic context imposed contributed to further aggravate problems of the educational system, forcing society to seek alternatives for the maintenance of education in a situation of social distancing. The answer was remote teaching. The Annual Follow-up Report of Educação Já [Education Now] (2021) demonstrates that despite the efforts of public state and municipal networks to provide remote teaching, the challenges and drawbacks to children's and adolescents' learning have been immense. Among the challenges indicated in the report, the following are highlighted: (a) the different levels of family support in the process of teaching and learning; (b) the lack of access to equipment and internet to keep up with the remote classes (61% of Brazilian households do not have a computer and 28% do not have internet access); (c) young children's low autonomy to keep track of the remote activities, especially in Educação Infantil [early childhood education] and the initial years of Ensino Fundamental [elementary school]; and (d) the weaknesses of the education systems and teachers' implementation (PORTAL, the EDUCATION, 2021).

According to data from Agência Senado [Senate Agency] (2021), 35% (19.5 million) out of the 56 million students enrolled in basic and higher education in Brazil had their classes suspended due to the pandemic, while 58% (32.4 million) began to take remote classes. In the public system, 26% of students who are taking online classes do not have internet access. In the same perspective, the study "Retratos da educação no contexto da pandemia do coronavírus" [Portraits of education in the context of the coronavirus pandemic] (2020) points out that 83% of public school students in Brazil live in families that receive up to 1 minimum wage per capita. Thus, it can be said that the Brazilian public education system has uncovered social inequalities and exposed how challenges brought by the pandemic to the maintenance of classes via online teaching have more seriously impacted the vulnerable population.

In this scenario, the question of social impact on the lives of young people who have been deprived

of Education emerges. To measure the possible dimensions of this loss, a survey conducted by Inesper, alongside Roberto Marinho Foundation, projects that the country loses R\$ 214 billion a year by allowing that 17.5% of young people do not finish high school. This means that the country currently has 575 thousand 16-year-olds who will not complete basic education if nothing changes. The calculation takes into account changes in the labor market, with the fall in employability and remuneration of young people, the effects of this lower-income on society, and the shorter lifespan. The study analyzes four dimensions that summarize a significant portion of the impacts of education, in the individual lives of young people (employability and remuneration; lifespan and quality of life), as well as social impacts (economic externalities and the attainment of a culture of peace). (INSAPER, 2020).

Other countries and nations have already shown that education can decrease social inequalities, improve economic growth, combat poverty, decrease violence and ensure social, economic, and cultural development. Therefore, investing in the education sector, providing the most vulnerable with access to quality education, is fundamental for a future transformation of the whole society. Given this reality, it is important to bring to light the four foundational pillars listed by Fullan and Quinn (2021): well-being and learning, social intelligence, monetary investment, and well-run systems. The authors state that interrelated, these pillars can propel changes in the educational system.

"Well-being and learning" occur in the connection between students, teachers, and communities that work together seeking new ways to learn. "Social intelligence" is the ability to develop collective projects with communities and business partners. "Monetary investment" refers to a new monetary economy that seeks new prosperity across all social levels. Finally, "well-run systems" reclaims the need to set well-executed systems through new leadership, partnerships, and co-determination across all levels. In this context, social innovation and seeding strategies oriented by Strategic Design prove valuable since their purpose is to identify new social seeds aimed at solving problems or creating opportunities for communities (MANZINI, 2017).

2.2 Strategic Design

Before we approach the concept of innovation and design-oriented seeding strategies, we must present the concept of Strategic Design.

The evolution and natural progress of societies bring along increasingly complex issues. At that, design - which emerged as a project activity, linked

to the industrial process of mass production - ends up gaining space in processes of co-creation and taking on new challenges to tackle social problems.

Zurlo (1999) states that the collective and interactive process guided by a strategic action generates a cause and an effect that may modify reality. Therefore, each action of strategic acting will generate a reaction that will lead to another action, to a doing, to a reaction of the actors involved. This reaction will also be related to the environment and the group to which they belong. Thus, the strategies will lead to a model, a way of designing that will build new responses taking into account the environment and the people who live there. For the author, strategic design makes this model explicit, indicating a direction that operates in collective contexts, through a project process aimed at defining an environment endowed with meaning and values that will guide communities to a better future with new purposes and possibilities for all of those involved in the process. It can be said then that strategic design is about collaboration, about people and their different points of view, about finding new paths, understanding new ways of life, new ways of doing and thinking things.

In Meroni's (2008) perspective, strategic design creates a system of rules, beliefs, values, and tools that collaborate so that the different actors can deal with the external world and the context of uncertainties in which they live, thus enabling the emergence of new types of solutions and organizations in society. Then, it is possible to focus on processes and experiences to evolve, create and maintain an identity, as well as influence and change the environment in which one lives. According to Meroni (2008), strategic design engenders evolution, an advance, a discontinuity in the system from the value generated by experience. This evolution is the process of adaptation to the environment, a process of trial and error, of continuous innovation, followed by the selection of the best solution to that specific problem that will involve eco-sufficient strategies and changes to social behavior.

Manzini (2008) corroborates this view by saying that strategic designers come up as agents of transformation. For the author, design promotes learning that will lead to a transition to a networked and sustainable society. In this sense, strategic design can propose systems of products, services, communication, and whatever else is necessary to reinvent everyday life. But for society to develop by improving the quality of the social and physical environment, a systemic discontinuity towards sustainability is necessary.

Therefore, the designer must operate at the level of strategies through a process of social learning

and propose radical changes on a local scale. In other words, it can be said that the designer looks at society as a "laboratory of sociotechnical experimentation" to create "new ways of being and of doing things". Manzini (2017, p.68). Still, according to Manzini (2017), strategic design comes from the context in which it is inserted to identify appropriate groups of partners with whom to develop common values and convergent interests, that is, the designer acts as a catalyst agent who creates new meanings and values for those involved in the process.

Given the above, it can be asserted that strategic design operates at an intangible level through processes and strategies towards a sustainable solution. For Bentz and Franzato (2016) the nature of design does not specifically focus on results, but rather on critical-reflective and heuristic processes, which are of a metadesign nature. According to the authors, the design action is driven by the study of design strategies involving the system as a whole. Consequently, to develop processes and methodologies of strategic design projects, it is essential to consider the relationships generated in the design action.

According to Vassão (2010), the metadesign action views the project as a question through which it begins to change its perspective on a certain theme, acknowledging complexity as an opportunity for experimentation. Metadesign is a work of reflexive nature that has a free architecture - "the field of action, the project space, the context in which and how the project may occur" (Ibid., p. 94). We may say that through a critical and reflexive analysis that allows the visualization of every variable and actor involved, the focus of the metadesign step is to analyze the contextual and non-contextual contents to understand the aspects of the problem as well as the different factors that influence the context to contribute to the definition of new solutions.

It may be argued that a project does not end, that a problem can be reinterpreted and re-signified, and that the role of the designer is to inquiry, offer other possibilities and questions, which may cause an endless circular relationship. Van Onck (1965) corroborates this view by believing that metadesign provides several formal variations, allowing a designer to repeat the action and communicate it differently, that is, the provisional is accepted and there is no desire for something definitive. The author warns us about the continuous transformation and about the possibility of a designer reaching different results out of a system-product-service through the formal variations that are always evolving.

Bentz and Franzato (2016) corroborate this view by stating that the metadesign nature of strategic

design allows it to reconfigure society, transcending the singular product and considering all the values involved, the structures, cultures, or rather, the entire system. To this end, the designer should promote dialogue and collective construction by making the strategies defined by the different actors involved visible, therefore generating the desired effects of meaning. Hence, it is clear that strategic design opens up the designer's eyes to different possibilities, making dialogue easier and seeking the best possible solution to complex realities. It is observable that in a non-symmetric and non-linear way, the operations of strategic design at the metadesign level approach complexity in different contexts to induce transformations in several areas.

In this context, one notices that the metadesign is open, accessible, endless, and interactive. Therefore, it is essential to "reflect, recognize, situate, problematize" (Morin, 1999, p.28) acting, thus, at different levels of knowledge since there cannot be "no knowledge without knowledge of knowledge" (Ibid., p. 28). This diffusion of knowledge might be associated with social learning processes leveraged by design.

2.3 Social Innovation and Design-oriented seeding strategies

We often relate the word innovation to electronic devices and forget that it can also represent transformations that are not connected to technology. Therefore, the question that guides the discussion in this section is: how can the concept of social innovation and seeding strategy be interpreted from the perspective of strategic design?

For Meroni (2008) design has become an alternative for the development of innovation in different contexts because the designer can understand the whole system and see different possibilities while seeking the best possible solution to the problem. For Zurlo (2010), strategic design provides the designer with the ability to see different aspects of a given context and its system; to predict future critiques; to "make see" the fields that are open to cultural and ecosystem changes for the sake of social innovation. For the author, this means designing beyond a one-time solution since it provides the "cause of an effect of meaning, which is the dimension of value for someone, materializing this result in a supply system more than in one-time solutions, a product-service more than a simple product, which is the visible representation of the strategy".

In this context, it is worth mentioning that Ouden (2012) affirms that social innovation occurs when

the proposed solutions generate social value, that is, when the developed initiatives are beneficial to all those involved, creating a more meaningful life and promoting collective well-being. Consequently, such resolutions may transform patterns of behavior by providing more sustainable ways of living. By engaging people in the development of social innovation solutions, it will be possible to improve the quality of the contexts of life. Therefore, communities should be seen as a group of people endowed with capacities that can promote collective well-being, thus strengthening the social fabric (Manzini, 2008). On the same line of thought, Zurlo (2010) remarks that, through strategic design, social innovation guides communities towards a better future by bringing new meanings, new possibilities, new effects of meaning, and building new responses.

Manzini (2017, p.25) describes social innovation as “new ideas (products, services, and models) that meet social needs and at the same time create new social relationships or collaborations”. The author also addresses that social innovation may be the “creative recombination of existing resources (from social capital, historical heritage, from traditional skills to advanced and accessible technology), to achieve socially recognized goals in a new way”. Mulgan et al. (2007) corroborate this view by saying that innovation arises when someone - usually individuals or groups solving their own problems - proposes an idea to solve a need that has not yet been met, but that these can be recombinations and reconfigurations of existing processes and practices. The authors also state that social innovation has a social purpose, that is, it seeks to mobilize and solve problems that emerge from society's needs. It can be said that social innovation is based on collective, social, and environmental values that can produce a behavior change, promoting social well-being and creating value for the collective through the combination of efforts between government, private enterprises, non-governmental organizations, and civil society.

If social Innovation seeks to solve problems through new practices and new ways of acting generating a social transformation through new sustainable solutions from collaborative arrangements it is necessary to strengthen collective above individual thinking, to engage small positive attitudes, which bring about a virtuous cycle of change.

In this sense, it is important to shed light on innovative ideas or social projects that emerge through bottom-up initiatives, that is, actions that arise from communities. Put another way, the promoters of solutions must have a “local” relationship, as well as the end-users. Understanding that the concept of locality can be relativized, it is important to point out that the

DESIS (Design for Social Innovation and Sustainability) Network considers an initiative “local” when the promoters - such as the communities listed in this study - operate on the scale of neighborhoods and/or cities.

That being said, Manzini (2014, p. 61-62) complements that bottom-up innovations occur when a group of people tries to solve problems in unconventional ways, designing and improving new ways of thinking and doing “to this end, they should: (1) (re) discover the power of co-operation; (2) recombine, in a creative way, products, services, places, knowledge, skills, and traditions that are already in place; and (3) rely on their own resources, with no expectation of general changes in politics, economy, or the institutional and infrastructural assets of the system.”

Sharing this perspective, Freire (2021) considers that a bottom-up social innovation can respond to the needs of today's society, generate lasting changes and improve broad social problems through changes in the social fabric and reorganization of the existing one. According to the author, people who are interested in participating in the process are also empowered by it, thus allowing the redistribution of the decision-making power of society. Therefore, when considering the context of everyday life, social innovations are innovations that have the potential to allow a community to solve a problem and create new opportunities through a new organization of local resources.

Thus, assuming that social innovation occurs when an idea has the potential to be cultivated-through replication and/or adaptation - and that a bottom-up innovation becomes important not only for the local relevance of the action but also for the dissemination of the initiative, it is relevant to approach the dissemination of seeds, which under the prism of strategic Design emerges with the concept of seeding.

Although this concept is yet little explored, Fuentefria (2021) - when carrying out a systematic review of the literature - points out that for the areas of design and computing, seeding relates to the process of dissemination of innovation. Thus, we follow this current that sees seeding as a strategy to solve complex and singular social problems. Corroborating with this thought, Basso, Franzato, and Del Gaudio (2017, p. 102) affirm that seeding “implies the infiltration of the system with seeds of hope, ideas, codes and knowledge that propose new formats, methods, connections, and that wait for the right moment, the propitious context, to surface”. Fuentefria (2021) further complements that the term seeding, when associated with strategic design, operates in the “creation of sociotechnical environments for the

development of communities capable of generating social impacts”.

Approaching seeding to the context of communities makes it possible to look at seeding as a dynamic that disseminates innovative ideas. And that they are thus practiced, reinterpreted, transformed, and renewed so that they can finally be implemented in various contexts (OLIVEIRA; FRANZATO; DEL GAUDIO, 2017). In this perspective, communities have the potential to propose solutions to the most varied social problems. To seed, however, they need to be designed in such a way as to contain guidelines for their evolution, that is, mechanisms to foster interaction and collaboration” (MICHELIN; FRANZATO; DEL GAUDIO; 2016). In this context, the technical skills of the designer listed by Zurlo (2010) - to see, to predict, and to make see - have the potential to promote dialogue between the different actors involved in the seeding process, aiming at “more effective, attractive, lasting and potentially replicable solutions” (MANZINI, 2017, P. 72).

Corroborating this premise, Michelin et al. (2016) point out that a characteristic of designing by the logic of seeding it is that at the moment of the project, the designers do not create closed solutions, but rather open environments that can be modified through collaborative processes during the course of their use. In addition, the authors emphasize that the relationships define the system and its exchanges with the context in which it is inserted. Therefore, the seeding design needs to “foster the interactions that will take place after its “germination”, that is, its catalysis in a certain context. In short, seeds are embryos that carry

partial codes for the development of open systems; that need to evolve through the creation of relationships between their actors and their context, thus fostering collaboration; and that, within society, may carry the potential for subversive social innovations concerning existing dynamics” (MICHELIN et al., 2016 p.2107).

Given this scenario, we see the relevance of social innovation driven by strategic design as an agent of transformation in the dissemination of seeds aimed at education, in a pandemic context.

2.4 Social projects: what has the education sector done during the pandemic?

To respond to the objectives of this article, we chose to analyze some social projects that were created and/or adapted during the pandemic. Through data collection, we sought to understand the new behaviors and solutions that emerged during the crisis, their relevance to communities, and the feasibility of their implementation. They were chosen based on the regard of the community towards community, that is, we sought projects that stemmed from society's desire to help, in a moment of urgency, the most vulnerable population. In other words, following Manzini (2014)'s suggestion, we studied cases of *bottom-up* innovations. For the presentation of the cases studied we created Table 1, which shows a connection between them and the three abilities of the designer listed by Zurlo - “to see”, “to predict” and “to make see”.

Table 1. Cases of social initiatives focused on education that arose during the pandemic. Source: elaborated by the authors.

Table 1: Cases of social initiatives focused on education that arose during the pandemic.			
Project	Ability to see	Ability to predict	Ability to make see
Escola vem de barco [School comes by boat] Tenente (2021)	People without internet connection are have no access to education.	If they received education in another way, it would be possible to reduce the rate of illiteracy and, consequently, social inequality.	School teachers go by boat to the homes of students from riverside communities, explain the activities and provide the materials for study.
Conecta Panorama [Connect Panorama]. Mendes (2020)	Communities without digital inclusion, without connectivity due to lack of income.	If digital citizenship was promoted, it would be possible to avoid social and economic inequality.	Distribution of 4G modems to more than 300 families with schoolchildren. In addition, the funds raised helped the Coletivo de Mulheres do Jardim Panorama [Panorama Garden Women's Collective] to develop a center for innovation and education in the community, empowering community leaders.
Cultura da Caixa - Espaço Pinheirinho [Caixa Culture - Pinheirinho Space]. Nascimento (2021)	Children with no educational development or connection to school/education.	If there was any contact with the students, it would be possible to maintain educational development and connection.	Monthly distribution of boxes with handcrafted educational games and books.
Associação Voz Ativa. Tenente (2021)	Families without money to meet their basic needs.	If there was community collaboration it would be possible to guarantee the livelihood of the families.	Community mobilization for the donation of 600 basic food baskets.

3. METHODOLOGICAL PROCEDURES

The research followed an inductive approach of exploratory nature, through a case study. Based on the theoretical foundation - elaborated by the collection of secondary data - the objective was to discuss the relevance of Strategic Design as an agent of transformation, through seeding strategies, envisioning social innovation in education. We then sought social projects that were created and/or adapted during the pandemic. To define the choice of cases, an initial mapping of projects implemented in Brazil was carried out and the selection criteria for the study were that they: must have emerged from the communities - in a *bottom-up* logic of innovation - and have had a positive impact on the educational scenario regarding the pandemic context.

To analyze the design guidelines, this study proposes a correlation between the social projects studied and the three elements that, according to Zurlo (2010), characterize the three abilities of a designer: "to see", "to predict" and "to make see". From this correlation, we present four axes that contemplate possibilities for the dissemination of seeds in education. The article's problem was guided by the following question: "How can

Strategic Design, through seeding strategy, become an agent of transformation, contemplating social innovation in education?". The results and the analysis were developed from four stances: analyzed theory, analyzed social projects related to the three competencies of the designer cited by Zurlo (2010), and the four foundational pillars listed by Fullan and Quinn (2021). From these sources of information, it was possible to identify the four axes, which, according to the authors, will be propelling agents for the dissemination of seeds envisioning social innovation in education.

4. RESULTS AND ANALYSIS

The analysis of social projects and also the data listed in the first topic of this work - which portrayed education in a pandemic context - allowed us to identify that vulnerable communities were forced into reinvention to ensure the minimum requirements of subsistence; often being unable to provide the basic needs for their families.

Moved by this context, the authors analyzed the main challenges faced by vulnerable communities

and proposed a correlation with the four pillars listed by Fullan and Quinn (2021). From this correlation, four guiding axes emerged, as follows:

- **Axis 01: attention to students:** it exposes the weaknesses of the education system and warns about the numerous changes that have unexpectedly occurred in the students' lives.
- **Axis 02 - Access to digital technologies:** it highlights the inequality of vulnerable communities concerning technology.
- **Axis 03 - Cultural and environmental learning practices:** it showed the need for a change in traditional teaching methods, directing attention to the need for (re)adaptation to teaching and learning.
- **Axis 04 - Support network for vulnerable families:** it demonstrates the need to develop collective projects with communities and partners to ensure the livelihood of families in vulnerable communities.

The authors further classified the analyzed projects within the axes and realized that they are seeds that feed social innovation. Hence, it is believed that through the Axes and the understanding of the context of people's lives it is possible to near the theoretical contributions of strategic design and create new ideas that make sense, value, and offer solutions to vulnerable communities. That being said, Table 2 was developed to inspire new seeding strategies aimed at education, beyond conventional modes of teaching. Therefore, a connection was made between the analyzed projects, the four axes presented and the three characteristics of the designer listed by Zurlo (2010) - "to see", "to predict" and "to make see". It is expected, therefore, that the axes pointed out in this table can promote discussions that may be a starting point for the dissemination of seeds in this pandemic and vulnerable educational context.

In general, it can be said that all the cases we studied and all the possibilities we proposed require a designer that considers the community and its context; who can observe latent needs and henceforth act to make actions for the benefit of collective well-being possible. In other words, the designer needs to be able to "see", "predict" and "make see" the community needs (ZURLO, 2010).

Table 2. Seeds that feed Social Innovation with a focus on education. Source: elaborated by the authors.

Table 2: Seeds that feed Social Innovation with a focus on education.			
Axes and analyzed projects	Ability to see	Ability to predict	Ability to make see
Axis 01: Attention to students Project: Escola vem de barco [School comes by boat] Tenente (2021)	Provide all children and adolescents with access to quality education.	Reduce the illiteracy rate and, consequently, social inequality.	Rethink the education system, through unconventional means, providing students from vulnerable communities with quality education.
Axis 02: Access to digital technologies Project: Conecta Panorama [Connect Panorama]. Mendes (2020)	Promote access to digital tools that enable education processes.	Decrease Brazilian social and economic inequality by providing greater digital equity.	Carry out actions aimed at investment in technology and training through solutions built in partnership, not just ready-made solutions delivered by governments.
Axis 03: Cultural practices and learning spaces Project: Cultura da Caixa - Espaço Pinheirinho [Caixa Culture - Pinheirinho Space]. Nascimento (2021)	Allow children to feel like they belong to the spaces in which they learn and provide more autonomy for teaching and learning.	Value local practices and promote learning spaces permeated by art and culture.	Seek community spaces that surpass the teacher-student classroom logic and offer opportunities to learn through projects for the benefit of the communities and cultural practices of that environment.
Axis 04: Support network for vulnerable families Project: Associação Voz Ativa [Active Voice Association]. Tenente (2021)	Ensure the livelihood of families.	Food has a fundamental role in the quality of mental health, in learning, memorization, assimilation and reasoning.	Carry out actions aimed at distributing food to vulnerable communities.

It was also identified that all the projects emerged from the community towards the community, that is, they were *bottom-up* innovations carried out through unconventional forms. These projects were carried out through cooperation between different actors who creatively rethought and adapted existing services through their own resources, in other words, without the need for government aid or political change (MANZINI, 2014).

5. CONCLUSIONS

If on the one hand the COVID-19 situation further aggravated the problems of Brazilian education, on the other hand, the pandemic revealed transformative skills that emerged from communities, evidencing the power of social innovation (MANZINI, 2008).

The social projects listed in this study - even if created or adapted to meet different needs - had at their core the intention of providing the livelihood of families or promoting education - even in adverse situations. Initiatives like these, which emerge from communities, have been gaining more and more space and involving *stakeholders* able to give voice and visibility to mobilizations that prove to be agents of change, able of impacting the "way in which individuals or communities act to solve their problems or create opportunities" (MANZINI, 2008, p.61).

This article sought to highlight the importance of such actions that arise in communities, as well as propose themes that may inspire the dissemination of seeds of social Innovation. This study contributes therefore by correlating the analyzed projects that emerged from the communities, the axes proposed by the authors, and the essential characteristics of the designer theorized by Zurlo (2010) - "to see", "to predict" and "to make see".

Then, by listing the seeds for social innovation in education, it is possible to think of four paths that can incite discussions and social movements for the creation and development of future projects. The first concerns social inequality aggravated by illiteracy. The second point stresses the issue of digital equity, concerning access to digital tools - which have taken a central role in the context of the pandemic. The next theme is the valuation of local practices and the promotion of learning spaces permeated by art and culture. The last point of the discussion addresses a sensitive topic and concerns the maintenance of basic meals for all children since food has a crucial role in well-being and learning.

Further inquiry into these four issues will allow for the proposal of this study to become an alternative to disseminating seeds of social innovation focused on education. On the outer surface of the possibilities, we can think that "maybe, rather than unleashing concrete proposals for actions, the seed, once thrown into the network of the global context, may provoke debate, questioning and

reflection on the present moment and the paths that lead us to the future, perhaps to build a more just and egalitarian society” (MICHELIN *et al.*, 2016 p. 2109).

Finally, it is important to point out that this article did not mean to exhaust the topic, nor to provide a ready-made solution to profound educational problems. But rather, shed a light on the discussion about the possibilities that design offers through social innovation. Therefore, it is expected that this study will serve as inspiration for new perspectives and for the design of new project guidelines that may orient discussions and the creation of opportunities in the educational systems of vulnerable communities.

REFERENCE

- BASSO, C. M.; FRANZATO, C.; GAUDIO, C. Del. Seeds of social innovation as alternatives to hegemony. *Design and Social Innovation*, p. 33-50, 2017.
- BENTZ, I.; FRANZATO, C. Metaproject at the design levels. P&D Design - Brazilian Congress of Research and Development in Design, *Proceedings of the 12th Brazilian Congress of Research and Development in Design*, Belo Horizonte, 2016. Available at: <http://www.proceedings.blucher.com.br/article-details/o-metaproject-on-design-levels-24356>
- BRAZIL - Senate Agency. **DataSenado: almost 20 million students missed classes during the pandemic.** (2020) Available at: <https://www12.senado.leg.br/noticias/materias/2020/08/12/datasenado-quase-20-milhoes-de-alunos-deixaram-de-ter-aulas-durante-pandemia>. Accessed: 18.05.2021
- DESIS - **Design for Social Innovation and Sustainability** - Available at: <https://www.desisnetwork.org/>. Accessed on: 18.07.2021
- INSPER - **Consequences of the Violation of the Right to Education.** (2020) Available at: <https://frm.org.br/sem-categoria/indicadores-de-consequencia/>. Accessed on: 18.05.2021
- FREIRE, K.M. Strategic Design for Social Innovation. In: FREIRE, K.M. (Org.) **Strategic design for cultural and social innovation [electronic book]** Porto Alegre 2021.
- FUENTEFRIA, L. D. **Strategic design processes and seeding for the evolution of social innovations.** Dissertation (master's degree) Universidade do Vale do Rio dos Sinos - Programa de Pós Graduação em Design. 2021. Available at <http://repositorio.jesuita.org.br/handle/UNISINOS/9757>. Accessed 08/19/2021
- FULLAN, M.; QUINN, J. Young People Have a Desire to Save Their World. How Can We Help? **Education Week [online]**. 2021. Available at: <https://www.edweek.org/leadership/opinion-young-people-have-a-desire-to-save-their-world-how-can-we-help/2021/05>. Accessed on: 03.06.2021
- MANZINI, E.; Jégou, F. Design dos cenários. In: BERTOLA, P.; MANZINI, E. **Design Multiverse.** Notes on design phenomenology. Milano: Edizioni POLI.design, 2006, pp. 189-207.
- MANZINI, E. **Design para inovação social e sustentabilidade: comunidades creativas, organizações colaborativas e novas redes projetuais.** Rio de Janeiro: E-Papers, 2008 (Cadernos do Grupo de Altos Estudos; v. 1).
- MANZINI, E. Making Things Happen: Social Innovation and Design. Massachusetts Institute of Technology. *DesignIssues*: v. 30, n. 1, p. 57-66. 2014.
- MANZINI, E. **Design: when everyone does design - an introduction to design for social innovation.** São Leopoldo, RS: Ed. Unisinos, 2017.
- MERONI, A. Strategic design: where are we now? Reflection around the foundations of a recent discipline. *Strategic Design Research Journal*, [S.l.]. v. 1, n. 1, Dec 1, p.31-38. 2008a.
- MENDES, T. **This young man created a digital inclusion project in a poor community during the pandemic.** Available at: <https://www.napratuca.org.br/prep-guilherme-coube-projeto-inclusao-digital/>. Accessed on: 18.06.2021
- MICHELIN, C.; FRANZATO, C.; GAUDIO, C. Del. Seeding and Seeding on the Net: **The Metadesigner and the Possibilities of Subversion for Social Innovation**, p. 2101-2110, 2016.
- MORIN, E. **The method 3.** The knowledge of knowledge. Porto Alegre: Sulina, 1999.
- MULGAN, Geoff. Design in public and social innovation - what works, and what could work better, 2014.
- NASCIMENTO, B. Social projects try to survive and adapt to the pandemic in Greater SP. **Agência Mural [online]** 2021. Available at: <https://www.agenciamural.org.br/projetos-sociais-tentam-sobreviver-e-se-adaptar-a-pandemia-na-grande-sp/>. Accessed on: 03.06.2021
- OLIVEIRA, A. J. de; FRANZATO, C.; DEL GAUDIO, C. Redes de projeto: formas de organização do design contemporâneo em direção à sustentabilidade. 102. In: **Projectual Ecovisions: research in design**

and sustainability in Brazil [electronic book] / organized by Alfredo Jefferson de Oliveira, Carlo Franzato, Chiara Del Gaudio. São Paulo: Blucher, 2017.

OUDEM, E. **Innovation Design: Creating value for people, organizations and society.** New York: Springer, 2012.

PORTAL EDUCAÇÃO: **Annual Monitoring Report Education Now.** Available at: https://todos.pela.educa.org.br/wordpress/wp-content/uploads/2021/02/2o-Relatório-Anual-de-Acompanhamento-do-Educacao-Ja_final.pdf. Accessed on 18.05.2022

TENENTE, L. **Teacher drives app car to raise funds to keep students away from trafficking.** Available at: <https://g1.globo.com/educacao/noticia/2021/03/23/na-pandemia-projetos-sociais-levam-material-escolar-cestas-basicas-e-computadores-para-alunos.shtml>. Accessed on 18.06.2021

ZURLO, F. **Un modello di lettura per il Design Strategico. La relazione tra design e strategia nell'impresa contemporanea.** Dottorato di Ricerca in Disegno Industriale - XI ciclo. Politecnico di Milano, Milano, 1999. 247 p.

ZURLO, F. **Design Strategico.** In: XXI Secolo, vol. IV, Glispazi e learti. Rome: Enciclopedia Treccani, 2010.

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JFC: Funding acquisition, Conceptualization, Investigation, Resources, Writing - review & editing, Formal analysis, Project administration, Visualization

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