

## **Creative sustainability: gamifying the creative process and creating new possibilities for forgotten materials**

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#### **ABSTRACT**

Through the present paper, it is intended to share a synthesis of the elaboration, execution and results of the “Virtual Workshop of Creative Sustainability”, which was developed monthly through the social network Instagram, during eight (08) months of the year 2021. The workshop happened virtually due to the Covid-19 seclusion during the critical period of the pandemic. Aiming to expose and teach, in a simple, practical and objective way, the possible paths for transforming alternative materials, which would be discarded, into new possibilities for creation of decorative objects, furniture and other pieces with multiple purposes, created by the participants themselves, by encouragement of the use of creativity. The application methodology was through a challenging format and aimed to explore the potential of creations through a simple, intuitive and unique question, as a starting point to use the imagination in the most abstract way, questioning what could be done with the respective unused materials. At the end, it was handed to the participants files in multiple formats, in order to enable the inclusion of those who do not use civil construction creation software, to demonstrate the possibility of their projects becoming real. As the expected results of the experiment revealed, after the workshop, a rich perception of the possibility of the usage of creativity as a way to recycle materials, positively impacting the pillars of sustainability. The results contribute positively to the field of architecture and urbanism, with an innovative teaching typology and community of practice for students, families and community as a whole.

**KEYWORDS:** Workshop. Virtual project. Combinativity.

## **1 INTRODUCTION**

Through the centuries, the human being believed that nature was a source of infinite resources. It was only during the 1970's that nature started to show, by natural disasters, that the species have been wrong all along. Acidic rain, rivers and lakes drying and thermal inversion were enough for the global population to question the beliefs of inexhaustibility (UNITED NATIONS WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, 1991).

Beyond that, during the same period, the first excursions to outer space happened, making it possible for us to have a more complete understanding of our planet and opening eyes and minds to the physical dimensions of our universe in relation to earth. The discovery of the size of our planet in relation to others and in relation to the whole universe amused people, and it was a decisive factor in making many astronauts rethink the opposition between the scarcity so many humans lived in and the abundance of beauty there was in our planet (JUNQUEIRA, 2019).

In parallel to the beliefs that natural resources were infinite, the relationship between humans and nature was neglect for years because of the progress of industrialization. Through the years, environmental degradation grew and natural disasters got more intense. It was at that time that the topic of Ecology became largely discussed with the goal to protect the planet and its natural resources. The pioneer in this discussions was the “United Nation Conference on Environment and Development”, that happened in Stolckholm in 1972, opening the doors for an improvement plan that all nations were supposed to follow (SOUZA, 2021).

Along each conference held to discuss the theme, the improvement plan got bigger and better and in 1987 emerges a new word. “Sustainable Development” is described in the report “Our Common Future” as the “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (UNITED NATIONS WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, 1991). This expression is used to describe a balance among the environmental preservation and social economic, political and cultural development.

According to the report, for the sustainable development to work, it is need that basic

needs, such as health, housing, nutrition and education to be met. This way, in order for this needs to be met, strategical goals were elaborated through the conferences. Such goals work as a manual so that nations are able to reach the sustainable development.

At first, during the year 2000, the “Millennium Development Goals” (MDG’s) (Picture 1) that were eight (08) great global goals taken by UN’s member countries, that helped making the world progress quickly to the deletion of extreme poverty and hunger, factors that affect mainly the most vulnerable populations of least developed countries. MG D’s were supposed to be reached till 2015.

Picture 1 - Objetivos do Milênio



Source: ONU, 2020.

In 2002 the term “sustainability” became popular because of a conference named “Rio+10”. This conference happened in Jonesburg, with the presence of 189 countries delegates, among some non-government organization (NGO’s), and there were discussed the goals that worked towards solving, beyond the environmental issues, the economic and social ones too, such as biodiversity, energetic and basic sanitation.

Sustainability is reached by the balance of three key elements: environmental, social and economic, also known as the “sustainability tripod”. The environmental column represents the nature preservation, standing by the usage without causing shortage or harm. The social face implies people being active in decision-taking process of the improvement propositions though to reach sustainable development, while the economic column recognizes the relevance of less expensive activities done in coordinating and executing the actions (BRASIL, 1992).

In 2015, after a meeting with world leaders in New York to create a plan to eradicate poverty once for all and reach other goals, UN made public a document with “17 Goals of Sustainable Development” (GSD) (Picture 2), that worked as an amplified version of the MDG’s known so far. The GSD involved all the concepts discussed in the conferences held up to that point and the adoption plan believed that all the nations would be able to reach the goals till 2030, making sustainable development real.

Picture 2 - Objetivos de Desenvolvimento Sustentável



Source: ONU, 2015.

GSD try to assure human rights, end poverty and fight inequality and injustice. Among their goals are reach gender equality, empower girls and women, act against the climate changes, among other measurements to combat our time challenges (ONU, 2015).

The biggest issue that arrives, facing the need and urgency of the care towards our planet, is if there is something that everybody can do for the environment and how to make that action true. It is urgent and of big importance that sustainability becomes something reachable by everyone, no matter their professional field. It is possible to apply GSD's goals in all sector, and it would not be different with civil construction. For years' architecture and design were executed following only aesthetic values. However, it is trifle to change this stereotyped paradigm, since the biggest role for both fields is to bring comfort and functionality to consumers. For this to be real it is needed that even more creativity is used to solve this issues in simple and sustainable way.

## 2 METHODOLOGICAL PROCESS

At the beginning of the pandemic one of the authors of this article took part in the building of a national volunteer-a-thon that aimed to help socially vulnerable people, the "Operation Antivirus X". Combining the need to remain inside and the desire to help others, was built a game in which competitors could do voluntary work, of many species, creating leagues to support causes and go through with projects, without leaving their houses.

Over the months this game grew and became the biggest online volunteer-a-thon up to date, the "10x10 challenge", in which various celebrities compete to see who was able to make the most people invested in collecting food and hygiene supplies for many Brazilian families for months.

A big name that took part in the game was the panelist, creativity teacher and founder of the "Keep Learning School", Murilo Gun, that on the first few months of the pandemic gave free access to all his courses on the school platform. His courses allowed great learning and perspective to the experiment presented by this article.

Inspired by the operation, a desire to build a project that could be done by anybody, anywhere, just using materials they had within a reachable distance emerged. It was wished to show that, with creative strength, being sustainable is a rather easy task, possible to be done by everybody and that, even in a micro scale, could have great purposes, just like the actions applied in macro scales.

Among questionings and concerns, it was settle as strategy the creation and implementation of a virtual workshop that included the problems previously described. This workshop was done monthly online through the Instagram social network, which allowed the execution during the social reclusion and the simultaneous experience exchange. The goal was to touch people over the topic of the sustainability in a creative way, allowing learning experiences through a hands-on approach of completing simple tasks.

Like taught in one of Murilo Gun's courses, the "Combinativity" is a technic for creativity exercise in which, through the combination of two distinct ideas, something innovative is born. In the "Virtual Workshop of Creative Sustainability" the combinativity was the chosen method to allow the combination among creativity and sustainability. This way, the methodology base itself in two steps. To the conception of this work shop were adopted the following methodological process:

- (i) Exploratory research about the topic of sustainability. In order to do it the searches were oriented by the appearance of key words in newspapers, documents, researches and other materials that could sustain the considerations. This way, it was possible to work the theme in a simple way, allowing the discovery of gamification data to improve the process;
- (ii) Research in primary documental sources about which creativity technics can help the creative process and problem solving in reality;
- (iii) The discovery of possibilities to inclusive online workshops with good accession of multiple people in a voluntary way.

To the methodological process of innovation, being it architecture, urbanism or other areas related to educational practices, the gamification of process and methods can be quoted as an application tool. According to Marques, et al. (2020), the gamification is a way to build activities as if they were games, with the usage of systems and mechanisms that make it feel like you are playing, without actually being, narrowing the distance between practical and theoretical worlds, using activities both appealing and challenging to players.

In order to do so, the initial proposition of executing the workshops was to present them as games in a challenge format, with monthly occurrences, with the only purpose of making it clear that a ludic, inclusive and intuitive tool is important. This approach would be able to bring to light the capacity of participants using creativity to create opportunity and to help on the building process of a project creation, without the need to be professionals of the field, what highlights the inclusive character of the project.

Through a dynamic in social media, on the Instagram platform, the participants were questioned about the materials that allowed the reuse or recycling. From the answers was built a list of materials that came to be used in the workshop assignments. This way, in May of 2021, the "Virtual Workshop of Creative Sustainability" was founded with the goal of initiate discussions related with sustainability, encourage creativity and take innovative ideas to everybody.

To perform the workshop, Instagram was the chosen tool, due to the fact that this is a free app, that can be access through phone and is used by almost everyone, what would possibly

increase the adhesion. For each monthly task the participants had 24 hours to make the researches and suggestions, without limitation of participations or suggestions. Over those 24 hours the participants' answers were collected, listed in a table in order to group similar ideas and, using them, a project was built. As a reward for the task completed the participants received a 3D model of a room project with their suggestions, featuring the furniture or objects created by them. At the end, the participants received the 3D file of the planned room, as mentioned, along with the rendering and images, to be consulted in the execution of future projects or as reference of creation. There were also social media posts to publish the monthly task results and the update of an eBook (Picture 3) with the projects of the workshop and some extra practical lessons. The eBook was the final material produced by the workshop, and it has all the projects done during monthly tasks, with some bonuses done by the mentor. To date were held seven editions of the workshop, with seven different alternative materials.

Picture 3 - The cover of the eBook built during workshop



Source: Personal files.

It can be highlighted that, during this moment, we lived, all around the world, the COVID-19 crises, a moment in which the environmental matter became very popular in the media. It was in this context that multiple people became aware of concepts such as sustainability and related areas, those being presented as the solutions to the over usage of our planet's resources. This ideology makes us agents of change of this setting we find ourselves in, and it is from changes in the way we interact with the environment that we can find solutions. Therefore, the workshop works with the construction of simplistic critical view and puts us to rethink the development model adopted by our society.

### **3 EXPERIENCE REPORT**

#### **3.1 D From participants of the workshop**

According to an architect that took part in the workshop, through the project she was stimulated to think critically and allowed to enrich hers, and other participant's, personal repertoires because of the concepts that were approached. Despite of having previous knowledge of the subjects, the participant saw the workshop as an opportunity to deepen her ideas about sustainability through practice, besides learning new concepts such as "Biophilia" and themes related with "neourbanism" and "neuroarchitecture".

It was also mentioned that the exchanges with other participants enriched the experience, given that many ideas emerged because of each person's experience and, in middle of so many possibilities, it was noticed that any material can have potential to become an architectural or decorative object. A participant highlighted that she was surprised by the possibility of paper rolls becoming a bed frame or a type of door with fix grid and glass that allows ventilation without giving up on security.

According to another participant that is a physiotherapist, meaning that decoration is no his full-time job, the workshop allowed him the awakening to make changes in his residence. To him, the challenges arrived at the right moment, since he was about to throw away some materials like the ones later used in the workshop, what made him think how much he would spend to buy objects that he could make with his own hands. He mentioned feeling good about being able to go through this processes.

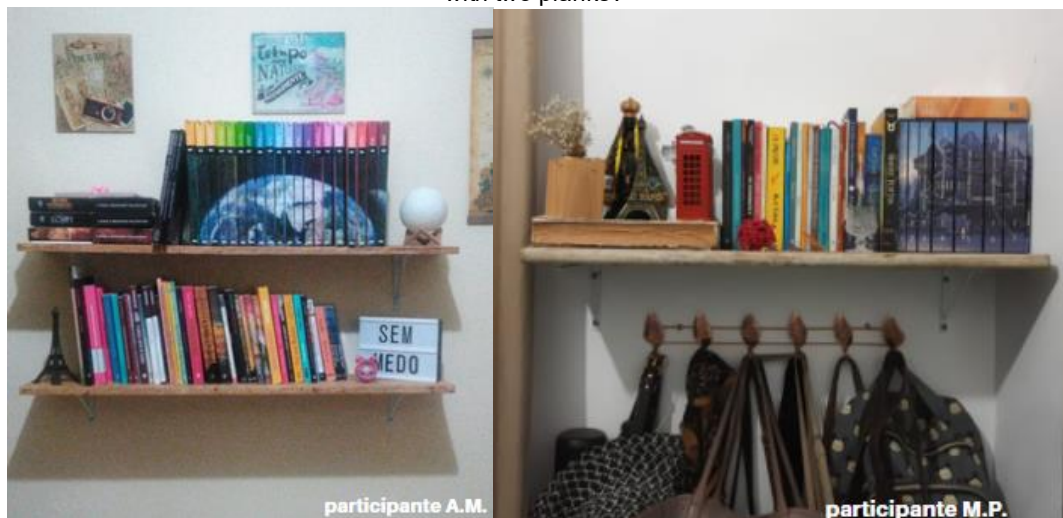
### **3.2 From creators of the workshop**

Em 2020 uma das autoras, mentora da oficina, criou uma conta na rede social In 2020 one of the authors, and mentor of the workshop, created an Instagram account amidst the pandemic. The goal was to share some contents about sustainability. In May of 2021, during the content creation for Instagram, it was asked to the audience what could they possibly do with two 1,6m wood planks. As soon as the question was asked, it was noticed that many people were interested in the subject, and suggestions started being made, including suggestions about other materials that could be figuring following posts. From that moment, the workshop became a monthly task, and, for each meeting, multiple materials were selected by the participants.

Through the workshops, unconsciously, the participants used the concept of sustainability and created projects with materials that would otherwise become trash. And, even though some participants were not in the project business, it was noticed that they had the same abilities in applying the concepts of sustainability, demonstrating that creativity and critical thinking is something natural to human beings, it only needs to be exercised. Beyond the creation, some projects were executed by participants, as seen in pictures 4 and 5.



Pictures 4 and 5 - Project executed by 2 participants after the first workshop “what would you do with two planks?”



Source: Personal archives.

#### 4 RESULTS AND DISCUSSION

In 2021, after the first online workshop in May, more than 20 people, from this specific area and others, participated per workshop meeting. During that year, 5 workshops were held and more than 50 projects were completed, all proposed by participants. From the first experiences of the first month of workshop, some improvement points were notices, being it:

(i) Files – Some adaptation was need to suit the type of files and the participants profile, such as switch to older versions of software so nobody would have problems accessing it. It was crucial to generate accessible pre-formatted files for rendering, as well as having a file adapted so the ones who are not from the construction field could also size and execute their projects. This step asked sensibility of the project creators to understand in which cases was necessary to introduce extra files or simply openly dialogue with the participants.

(ii) Workshops schedule – Given the fact that initially there was not a predefined number for the workshop nor a schedule to be followed, it was noticed that there was a need to determine when meetings were to happen, so that participants could prepare themselves to check the social media on the previously scheduled dates.

(iii) The choice of the workshop materials – The initial choice for the workshop materials was made because of materials already used by the authors in other projects, but it was noticed later that the workshop could become more interactive if the participants were to choose the materials.

(iv) Closure and eBook adjustments - The eBook “Aplicando Sustentabilidade Criativa” (“Creative Sustainability in Practice”) was made to answer a question left after the workshop: how to make people notice that sustainability is easy and within the reach of our hands?

This activity made the dialogue and the teaching of creative sustainability easier since, in the eBook, some illustrated schemes of the projects were inserted, a way of making what was taught reverberate beyond the platform where the workshop was held. It is highlighted that the commitment of the participants was essential for the activities described above to be developed, improved and executed.



Being almost one semester long, it was possible to gain a lot of new knowledge from the workshop and participants, who also helped developing new actions inside the project and expanded our academic training. The reflex of this is the concretization of a simple, collaborative, sustainable and high quality idea. The project is adaptable to any house, commercial establishment or other places, and can be though and executed by anybody.

## **5 FINAL REMARKS**

Despite the worrying discussions around the environmental being over 30 years' old , it is still noticeable how embryonary the direct and indirect action plans for sustainable paths are. So much have been done in the civil construction field about sustainability, like sustainable certifications that exist and can be apply to companies that follow certain procedures. But it is still noticeable that in our society little is done about individual or collective sustainable actions beyond those more common ones, such as trading disposable bags for reusable ones, reduce the consumption of single use plastic, not polluting the environment or disposing waste consciously.

It is paramount to look for more information and to take that information to everyone in an inclusive way to show that there are many creative possibilities of taking care of our planet. This way, it is need to male more explicit the simpler ways in which people and companies can think together about the environmental cause.

The results presented here bring some possibility of solution for the problem approached in this research by enlightening the possible ways in which we can deal with recycling or reusing diverse materials. It is highlighted that this tasks can be done by people, as extra money source, or companies, that can expand their products using materials that would otherwise go to waste.

Besides that, the eBook made from the workshop can contribute to the environmental education in any school grade, as well as in other subjects of the national education plan as a way of inserting the concept of sustainability from an early age.

To do so, the workshops can keep the online characteristic, what allows flexibility and diversity of audience, what possibly brings more repertoire from the participants. However, this does not forbid the meets to become live, as part of a bigger event on the education or research field.

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