







Received:  
March 22, 2023

Accepted:  
April 03, 2023

Published:  
April 30, 2023

## Vagão Sustentável: the environmental education and social actions during the Covid-19 pandemic

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### Abstract

Environmental education has been constantly discussed in our daily lives and is fundamental for the development of society. In view of this, the present article aims to present actions of environmental education and of a social nature of the extension project of the Federal University of the Jequitinhonha and Mucuri Valleys (UFVJM), entitled Sustainable Wagon: Environmental Education in Schools of Teófilo Otoni- MG and Public awareness. For the present work, a case study was carried out, where data were obtained directly from the project's social media, and recorded in its monthly reports, during the pandemic period. The analysis of information was carried out through descriptive research in a quali-quantitative approach of previously programmed actions. During the covid-19 pandemic, environmental education activities were carried out in the distance modality (online actions) and social actions that took place in accordance with the health protocols to combat covid-19.

**Keywords:** Environmental Education, Social Media, Pandemic, Sustainability.

## 1. Introduction

Environmental education, which is the scientific basis for sustainability, has been constantly discussed in our daily lives, at universities, schools, in the media or even during conversations during a family lunch. According to Roos and Becker (2012), this type of education is essential to form and educate society permanently, because it helps in the active development of the public, makes the educational system more relevant, realistic and interdependent. When it comes to the relationship between the system, the natural and social environment, the aim is the increasing well-being of human communities.

In this perspective, the extension project of UFVJM, the "Vagão Sustentável: Educação Ambiental em Escolas de Teófilo Otoni – MG e Conscientização Pública", is composed of

university professors and students, in addition to external volunteers linked to partner institutions, which aims to comply with the National Environmental Education Policy (PNEA).

With this objective, the project seeks to promote actions of a socio-environmental nature and public awareness in schools in the city of Teófilo Otoni – MG, as well as the entire community, in a playful, clear and relaxed way through lectures. Social actions, games, workshops and theaters are carried out so that people of any age and level of education can understand them.

Faced with the proliferation of covid-19, in March 2020 here in Brazil, the activities of the Vagão Sustentável project needed to be modified to adapt to socio-environmental demands. It was necessary to comply with the protocol adopted by the educational institution, in view of isolation,

social distancing and/or use of personal protective equipment (masks and 70° alcohol).

This article shows how environmental and social education actions were developed by the Vagão Sustentável Project during the covid-19 pandemic. The aim was to provide knowledge and motivate changes in behavior in the community in favor of sustainability.

### 1.1. Literature Review

Numerous extension works were produced throughout the pandemic in order to verify possible actions for the continuation of contact between the university and society. The work by Mélo et al. (2021) reported the institutions' ways of adapting existing extension actions, in order to consider the pandemic period. The work was based on documentary, descriptive, qualitative and quantitative research on academic extension during the pandemic. The work highlighted that the continuity of extension activities made it possible to carry out several actions aimed at coping with Covid-19, and contributed to minimizing the impacts of the pandemic (Mélo et al. 2021).

The work by Huss et al. (2021) evaluated the remote experience of the extension activities of the Sorriso Saudável project, from the Department of Dentistry at the State University of Maringá. The authors used electronic means to produce informative digital material, collected and passed on donations, managed social networks to publicize their extension activities and produced scientific content. The authors concluded that, even if remote actions do not replace face-to-face actions, the new project format has become effective, dynamic and beneficial for the entire community, due to its potential coverage.

The work by Ferreira et al. (2021) highlighted the importance of extension projects in the face of the Covid-19 pandemic. The researchers evaluated the literature articles qualitatively and verified the high relevance of the extension projects used against the Pandemic. The authors also concluded that the extension projects developed during the pandemic were crucial tools for transmitting knowledge and were effective in managing numerous diseases in the most needy areas.

## 2. Methodology

For the present work, a case study was carried out, where the data were obtained, directly from the

social media of the Vagão Sustentável, during the pandemic period. The analysis of the information was carried out through descriptive research in a qualitative and quantitative approach on the following previously scheduled activities:

### 2.1. Remote environmental education and public awareness

Through Google Forms, a form was prepared and sent via email to the various institutions in the Vale do Jequitinhonha e Mucuri region, with the aim of forming a network of collaborators for the continuous exchange of information on socio-environmental issues and coping with the covid-19. This form contained a brief presentation of the project and the purpose of obtaining the data described below:

- a) Name of the Institution;
- b) Category (public power, private initiative or organized civil society), location (municipality and region), Scope (national, state, municipal, regional or local)
- c) Does it have a communication sector? (yes or no);
- d) Contacts for communication, specific to the sector, if applicable (telephone and e-mail);
- e) Digital media (Youtube Channel, Facebook, Instagram, Website, Blog or others) and corresponding links.

After filling out the form, by the institutions, a contact sheet of employees was prepared, in addition to searches on digital platforms and specific social networks. The requested and searched information was related to the following specificities, within the themes of a socio-environmental nature and coping with covid-19:

- Presentation of projects and their actions;
- Results of programs, projects and actions carried out;
- Commemorative and important dates;
- Sustainable tips;
- Urgent notices;
- Newsletters;
- Scientific data;
- Problematic;
- Potentialities
- Events;
- Curiosities;
- Among others that the responsible group needed.

As soon as the aforementioned information was obtained, it was disclosed. In this way, the actions of Environmental Education (EE) and public awareness were carried out remotely (Figure 1) using the project's digital communication media, which are listed below:

- Instagram: @vagaosustentavel ;
- Facebook: Sustainable Wagon;
- E-mail: vagaosustentavelmg@gmail.com;
- Blog: www.vagaosustentavel.blogspot.com;
- WhatsApp group.

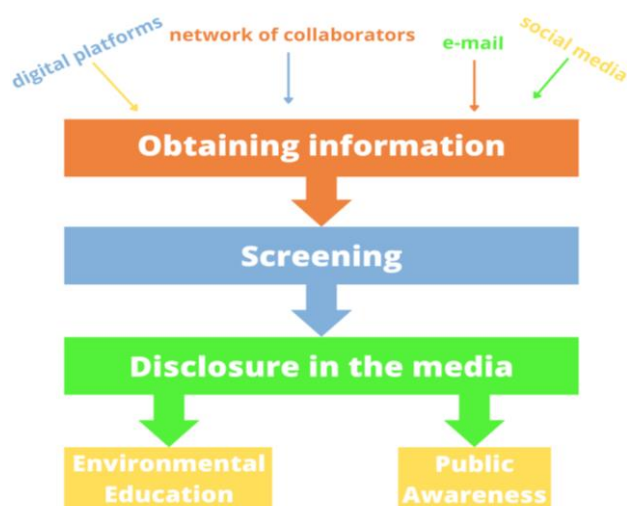


Figure 1 – Process of carrying out the EE and public awareness remotely.

## 2.2. Conducting and supporting online events of a socio-environmental nature and related to COVID 19

Online events were proposed using as standard an event script model designed to organize activities. These contained the following information: persons responsible; mediators; action theme; target Audience; month/year; date and time; duration; enrollment period; general presentation; timeline; speaker's name, mini-resume, telephone and e-mail; event platform; Streaming activity proposal and references.

The information obtained was important, as it was used for the other stages of the activities, which were divided between Courses and/or mini-courses online; Online workshop; Online seminars; Online lectures; Meetups and/or Live Streams; Lives; Webinars.

When online events were planned, organized and executed by third parties, mobilization and dissemination took place using the previously mentioned digital communication media.

## 2.3. Campaigns for collections and donations of products, materials and/or equipment

The covid-19 pandemic produced not only biomedical and epidemiological repercussions on a global scale, but also social, economic, political, cultural and historical repercussions and impacts, unprecedented in the country's recent history.

In this sense, in order to meet some social demands, the project carried out collection campaigns and donations of products, materials and/or equipment, according to the needs of the region's population.

Campaign planning was carried out in three stages (Figure 2). The data were established by completing the prepared campaign organization script.

First, it was of fundamental importance to define the type and destination of the elaborated campaigns. Then, for dissemination and mobilization, the arts of the digital pamphlets were prepared, and a form for listing people who requested the donation, where contacts, addresses, and collections were collected. These were carried out through the donation of money, using the Vaquinha Online platform (<https://www.vakinha.com.br/>) as a tool, for the purchase of the product, material and/or equipment. Except in cases where the donor opted for the delivery of the donation, where the place and time of delivery were defined. Analogously, it happened when the action was sponsored by a partner.

For the distribution of donations, it was important to organize the delivery by defining: calendar, mapping, team and transport. Always respecting the necessary measures to prevent contamination with the SARS-CoV-2 virus.



Figure 2 – Planning for carrying out the campaigns.

### 3. Results and discussion

Due to social isolation during the covid-19 pandemic, it was necessary to restructure the project's work methodology, where face-to-face activities were migrated to online activities (with the exception of social actions that took place in accordance with health protocols combating covid-19). The working modalities at this time are presented below:

#### 3.1. On-line Actions

In the Online modality, digital tools were used to practice environmental education through actions on the project's social media, as well as Youtube, Streamyard and Google meet to carry out lives, lectures, workshops and short courses. Instagram, Facebook and blogger for posting texts, arts and videos with themes relevant to the environment (environmental events), offered by the project, the university and also by the project partners. Since the choice to use these means of communication for activities during the pandemic was due to the number of people who consumed the project's social media, Instagram was the network with the highest number of people reached (Figure 3).

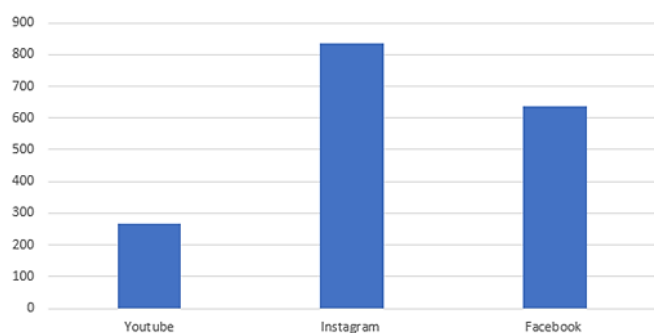


Figure 3 – Relationship between the number of followers and social networks of the project during the pandemic.

A total of 16 events were held in the distance modality (streamed lives). For the best development, the elaboration of these events took place according to the following stages: organization, marketing, registration and transmission.

#### 3.1.1 Organization

The first step in the preparation of actions was the choice of theme. Surveys were carried out on themes related to sustainability, such as the theme “Conscious consumption and selective collection: I

take care of my square”, so that scripts for the actions that took place could be prepared.

Based on each theme, the type of activity was defined: lectures, short courses, round tables, social action (donation campaigns), following the standard script used in the project where the information obtained from it was used in the other stages of the organization.

#### 3.1.2 Marketing

After the action script confection, information as: theme, date, time, location, information about the panelist; are used to create the images and propagation in the project social media: Instagram and Facebook; (Figure 4).

Moreover, the project participants share in their personal social media, in order to reach a bigger audience number.



Figure 4 – Art model for disclosing project actions.

#### 3.1.3 Subscriptions

Within about 15 days before the scheduled activity, at the management platform, CEVIBRA, were created pages with all the informations of each event where the participant could make its own subscription and, when the event was finished, receive the participation certificate, in the same platform, in a simple and effective way, because all the informations as: presentation, timeline, local, speakers and mediators information are disponsible in the platform. This methodology was used in all the Vagão Sustentável events throughout the

pandemic, to thereby facilitate the participants subscriptions and audience reached management.

### 3.1.4 Transmision

Utilizing the web tool, Stramyard, the events transmissions occurred live at YouTube Vagão Sustentável channel, and posteriorly, were still disponibile to the public in the channel. Worth mentioning some lectures occurred through google meet; they were recorded and later on posted on the YouTube channel. With the actions methodology being on a on-line format it was possible to divide the 16 live stream in the following manner: 11 lectures, 4 short courses, 1 round table talk within the theme, in chronological order:

- Knowing the ONG Movimento Pró Rio Todos os Santos e Mucuri;
- Familiar agriculture amid pandemic;
- Orthography, communication, writing ans texts improvement tips;
- Risk analysis in hydraulic equipments and dispositives;
- The importance of training and security management in work risks and accidents preventions in civil construction site;
- Mental health amid pandemic;
- Introduction to StreamYard;
- Implementation of charging for use of water resources- mechanisms and charging values;
- The economic, political, social, and cultural formation of Mucuri valley;
- Introduction to Blogger;
- Agribusiness - Occupations and Professions;
- Charging instruments for solid waste collection and challenges for municipal management;
- Conscious consumption and sorted waste collect: I take care of my own space;
- The urban mobility importance in Teófilo Otoni and the environmental impacts;
- Knowing UFVJM;
- Introduction to handmade beer.

Knowing that sustainability is based in three principles: social, environmental and economic, it can be stated that was possible to expand the thematics throughout the project actions during the pandemic, because, they approached diversas themes embrace the 17 Sustainable Development

Goals (SDGs) - global goals established by United Nations General Assembly. The date's choice arose from demands that were most framed in the moment to be realized. As an example, the live stream “Mental health amid pandemic”, was of major importance to the moment in question.

Is worth mentioning that, all the live streams were transmitted and/or posted in the project YouTube channel, and it was possible to evaluate and measure the lives reach (Figure 5) that totalized 2517 views on the platform.

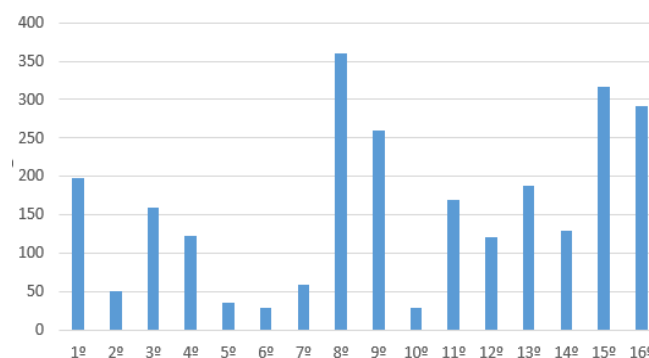


Figure 5 – Reach of events on Youtube.

Within these results it is possible to affirm that the project Vagão Sustentável digital platforms have a significant reachment and enables the sustainability propagation, through environmental education, to diverse public and diverse ages, since on YouTube there are all ages users.

Santos et al. (2022) developed Environmental Education on remote format to public schools students, creating dialogue spaces through active methodology approaching the thematic of behavior change about recycling residues. Concluding that there are no limits to Environmental Education happens, because even in remote format it was verified the involvement and the receptivity from the young people that participated in the actions through the Project-Based Learning methodology.

Santos et al. (2021) Presented an article with the reports about the Extension Project experiences “Environmental Education in Communities”, from Catholic University Dom Bosco (UCDB). According to the authors, the project realized actions aimed at environmental and solid residues waste questions, using audiovisual means, technology and communication tools, suited to the communities reality. Such changes allowed the conclusion that the extension performed in an effective and innovative manner, bringing important information and hope to the communities and institutions attended - the same happened to Vagão Sustentável.

### 3.2 Social Actions

The project Vagão Sustentável, in its essence, realizes actions that aim to meet the Sustainable Development Goals (SDGs), being social health and life quality between the 17 established goals; beyond the on-line events, during the pandemic, the project elaborated 3 social campaigns as coping measurement against Coronavirus: masks donation campaign, 70% alcohol donation and food donation; they followed the same elaboration and marketing methodology as the on-line activities and were realized in a in person form, from compliance with the necessary measures to prevent the contamination by SARS-CoV-2 virus. Following the results of the campaigns that happened during the pandemic are presented:

#### 3.2.1. Campaign “Take care, use mask”

The campaign “Take care, use mask” was concretized in the days October 15th and 21st 2020, in partnership with the Extension, Culture, Community and Students Affairs (DECACE) and Pro Rector of Community and Students Affairs (PROEXC), where were donated 410 facial protection masks, to intuitions of social vulnerability, in Teófilo Otoni-MG. (Figure 6). The institutions attended were: Association of Recyclable Materials Collectors Nova Vida (ASCANOVI); the Association of Eucalipto Residents; the Association of Teófilo Rocha Neighborhood Residents (ASCOMBATER) and the Saint Vicente de Paulo Society.



Figure 6 – Delivery of masks from the “take care, wear a mask” campaign.

#### 3.2.2. Campaign “Use alcohol, save lives”

The campaign “Use alcohol, save lives”, was realized at Tiradentes Square, at the center of Teófilo Otoni - MG, where the distribution of at maximum 1 liter of alcohol per person. The donated alcohol was produced at UFVJM - Mucuri Campus, through the project called “Ethanol 70° INPM preparation designated to the public hospital network of Teófilo Otoni - MG and region, from ethanol with concentrations higher than 90° INPM”, result of the partnership between scientific and Multidisciplinary Technical Committee (CTCM) to face the Coronavirus, from the UFVJM, the Public Defender's Office of the State of Minas Gerais, the Non-Governmental Organization Movimento Pró-Rio Todo os Santos e Mucuri (MPRTSM), and Cervejaria Platônica that filed the material support. The action of the distribution of the alcohol counted on the help of students and teachers from the project and other collaborators (Figure 7).

By this campaign was possible to distribute 1,000 (one thousand) liters of 70% alcohol (INPM), in the order to incentivize and enable the 70% gel alcohol use to the population, because, for the confrontation of the pandemic, as a pandemic preventive measure, as a preventive measure to minimize the contagion of the Covid-19 (SARS-COV-2 virus) and the transmission of the disease, the social distancing and the use of the 70% ethyl alcohol, gel form, according to the World Health Organization.



Figure 7 – Delivery of 70% alcohol from the “use alcohol, save lives” campaign.

### 3.2.3 Campaign “Donate food”

In the hard moment occasionally by the pandemic that intensification the difficulties faced by middle to low class families, in 2020 the Vagão Sustentável project had the initiative of levy non perishable food to make basic food supplies kits and donate them to needy families in Teófilo Otoni, in order to fulfill the second Sustainable Development Goal: zero hungry and sustainable agriculture.

In that regard, in this campaign the levy was realized from money donation, using the platform Vaquinha Online as the tool to receive the money, so that it was possible to buy the food supplies. After the kits were built, they were destined to the families subscribed in the campaign, once the preventive measure was being taken, the delivery happened through two members from the project, the coordinator, Teacher Izabel Cristina Marques and the student and member from the project, Tatiane Burmam (Figure 8).

Post it was possible to help, with food supplies, more then 30 families in food insecurity and hunger. Problems that worsen during the pandemic because, according to United Nations Organisation report, there was a drastic increase in the world hunger in 2020, most likely due to the Covid-19 pandemic consequences. Therefore, the pandemic scenery was marked by the world hunger increase. It is necessary a tremendous effort to honor the promise of hunger eradication until 2030.



Figure 8 – Delivery of basic baskets from the donate food campaign.

The aid provided to the community reinforces the idea from Nunes, Pereira and Pinho (2017), which shows that the social changes demand new action from the universities. Such actions favor the

citizens through social earnings (Silva and Souza, 2013).

The Actions presented in this research corroborate with the results obtained by SILVA et al (2021) that considers similar actions as public enterprises, for not making a profit and for focusing on the results that will be generated to the society. Those actions also can be framed into two perspectives of social entrepreneurship, that consists in the innovative resolutions to the social demands and no profit withdrawal.

Nunes et al (2021) in a experiences report about the challenges and adaptation of the university extension in pandemic times, concluded that despite initial timeline planning difficulties, addressed themes and the target public reach, could restructure the project well to the new format and amaze with the posts reach and the capacity to positively influence people’s lives, seeking bring relevant subjects and with scientific basement, to thereby, even remotely, try to better the population well-being.

Moreover, it was possible to verify the university population approximation with the society, through diverse assistance promoted in this period, in which the importance of the university extension stands out.

## 4. Conclusion

In total, 16 events were realized in remote format during the pandemic. The digital tools used for environmental education were the project social media: Youtube, Streamyard and Google meet for fulfillment of live streams, lectures, workshops and short courses. Instagram, Facebook and blogger were used for posts in texts, images and videos formats within thematics relevant to the environment and socioenvironmental related events propagation.

Furthermore, 3 social campaigns were realized: self protection masks donations, when were donated 410 masks to 4 Teófilo Otoni- MG associations; the 70% alcohol donation, that promoted the distribution of one thousand liters to the population; and the food donation, when basic food supplies were destined to 30 families indexed in the campaign; one of the principals of sustainability sanding out: social justice, witch is fundamental to a just and fraternal social environment.

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