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POLAR ROUTE: THE EXPERIENCE OF SAILING ONLINE

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Abstract: This article seeks to record the process of reinventing project classes in the Design Course during the COVID-19 pandemic, where in-person classes entered the 100% EAD modality. The adoption of teaching and learning strategies sought to establish new connections, maintain student motivation by encouraging them to participate in creative dynamics and carry out innovative projects on collaborative platforms. We proposed a project that stimulated participation, research, the development of socio-emotional skills and that the Internet became the window to the world in order to allow the expansion of the universe of references from the communicational point of view, the visual languages of films and television series were also incorporated in order to allow greater interaction between all the actors in this process. In addition to the narratives and poetics so necessary for this difficult time, especially for young people, far beyond the adventure series in this proposal the protagonist is real: the sailor Beto Pandiani. He performed seven ocean crossings on a catamaran without a cabin. The Polar Route will be his eighth expedition to take place in 2022. Pandiani competed in catamaran regattas for many years and became American champion in 1989. His first ocean crossing was from Miami-USA to Ilhabela-SP. It has already crossed the Pacific and Atlantic oceans, carried out the Drake Passage and carried out the New York - Greenland route, among others. In the Polar Route expedition, he intends to create a documentary about climate change. The fact of bringing a real case to the discipline was accepted with great enthusiasm by the students. The online sailing experience provided innovative projects that will be incorporated into the Polar Route catamaran. Having your project come to fruition is every young designer's dream.

Keywords: Experience Design, online teaching, Design Thinking, Emotional Design.

INTRODUCTION

Since the beginning of the COVID-19 pandemic period, the great challenge for educators at different levels of education has been to create creative teaching and learning situations. From mid-March, schools in the State of São Paulo had to adopt restrictive measures in view of the progression of the number of infected and dead by the Coronavirus. In two weeks, academic activities were restarted in technology-mediated environments. The most important questions were debated: *how to involve the student of the face-to-face course in the distance learning modality for the development of projects, where the student-student and student-teacher relationship is intense?*

According to Figueiredo (2019), in any teaching-learning process, what matters is the quality of the mediation process and not the physical and real distance between the teacher and the student. The concept of digital competence described by the author emphasizes that the teacher can take advantage of the student's familiarity to direct their attention to training actions. So what mechanisms could be adopted to create engagement?

Although the environment provided by the institution is not immersive like the historic *Second Life*, we built concepts inspired by the lessons of Christopher Dede, professor at Harvard School of Education. Dede (2021), in her recent studies, confirms that it is essential to research how students think in educational contexts. We studied the different perspectives of the students, their narratives, dreams and needs and made a map showing socio-emotional situations, preferred communication channels, social networks and created resources that could guarantee

effectiveness in the teaching-learning process. With this, we believe that the project proposal must be equally challenging and different from face-to-face moments.

Challenge, adventure, overcoming, confinement, self-knowledge and survival were keywords recorded during the research. With this, we also came to the conclusion that an adventure setting that worked with cross-cutting sustainability (17 Sustainable Development Goals - SDGs - UN) would be an important way to support the relevance of the work.

PLANNING AND OBJECTIVES

The didactic-pedagogical planning and organization are directly linked to the creation of strategies that allow effectiveness in the teaching-learning process. In the pandemic, training resources were rethought since the quarantine decreed would prevent any access to the library, mockup laboratories and still, would not allow technical visits to companies. Another aspect is that ethnography applied to design had to be transformed into netnography. We followed the concepts and methodologies proposed by KozinetS (2014).

Adapting concepts from the *TfU methodology - Teaching for Understand*¹, and with reference to the work of Blythe (2006), we start with the following analysis:

- Choose topics that arouse the student's interest in order to readily connect to the subjects covered;
- Establish goals consistent with the student's profile;
- Create activities that develop and demonstrate students' understanding of challenges;
- Elaboration of resources to provide continuous *feedback* to students.

1. Teaching for Understand – TfU is a methodology applied by Harvard University, encouraged and disseminated in Project Zero.

With this issue, we started for Instructional Design, indicating ways of planning, organizing and creating strategies. One of the most important aspects implemented in the development of the teaching-learning environment was the application of the *Metaphor concept* Metaphors create situational elements that help the acclimatization process in technology-mediated environments. With this, the project development process must involve students in a series of expressive, varied and creative activities and adopt systematics in their registration of concept and evolution of ideas allowing constant *feedbacks*. Therefore, design challenges are a means of promoting curiosity and broadening the questioning spirit of the university student, so necessary in specific areas of design. We envision resources and implementations for creative expansion. In view of the context and the result of the reflections, we proposed the objectives of the discipline as follows:

- Present real situations and problems that need creative and viable solutions;
- Provide moments of discovery and investigation designed by matrix paths;
- Allow spaces for reflection, production and argumentation;
- Involve external professionals in the specialties to be addressed;
- Develop basic and essential skills for project development;

THE VIRTUAL LEARNING ENVIRONMENT

The institutional Virtual Learning Environment was *Moodlerooms*. We did a thorough study on the behavior and preferences of this young university student. We created a virtual environment that replicated metaphors of the *campus* ' points of

interest, meeting points, cultural visits and as strategic resources we used quick interaction activities between students and theme through social networks.

The virtual environment – due to its flexibility – allowed the creation of a design studio, modeling workshops, a library, group meeting rooms, a classroom, a central auditorium (with a link to videoconferencing platforms), an art gallery and a café.

BETO PANDIANI AND THE POLAR ROUTE

Our preference was for the eighth oceanic expedition by Beto Pandiani called the Polar Route. Roberto Dias Pandiani, known as Beto Pandiani, is a sailor, writer and speaker. The Polar Route, known as the “Northwest Passage”, is the ocean route from Alaska to Greenland. In the last 20 years, with climate change in the Arctic, the polar ice cap is thawing. This trip will last 100 days and cover 5,200 kilometers. To carry out the Polar Route, Beto Pandiani invited Igor Bely, a companion of other ocean crossings, engineer and navigator very experienced in icy routes. Pandiani is inclined towards literature and photography. He has written eight books, one of which is an autobiography entitled “The sea is my land”. During his travels, he writes articles in his diary that are later turned into books, rich in images and inspiring texts. He talks about trust, friendship, solidarity and important values for building the character of young people. This trip will touch on very important topics: climate change, global warming and the importance of environmental education. In articles, Pandiani also quotes how he overcame situations of confinement in the ocean, fear and anxiety, recurring subjects at this time of pandemic. Lars Grael, Amyr Klink and Robert Scheid, sailors, Olympic medalists and record holders were invited to speak

about the Polar Route. In the documentary, they demonstrate the respect and admiration they have for Beto Pandiani, his ability to plan expeditions, optimize resources and his competence in risk management. Pandiani accepted to participate in our project and made himself totally available to help. Along with Pandiani, Cardoso also supported the idea, as he will be responsible for building the boat.

The Polar Route had the necessary characteristics to become a great challenge for the students.

“POLAR ROUTE: THE SAILING EXPERIENCE”

The project theme was finally chosen “Polar Route: the sailing experience”. This theme carried very important situations for the creative development of projects, as we will see below. In addition, it allows the opening of important interdisciplinary aspects of design: the study of new materials and sustainability, the interaction between the user and the vessel, the improvement of the design of the catamaran’s marine devices and also, dealing with restrictions: weight limit, hostile natural environment and stretches with lack of wind.

Norman (2008) is the author of the *usability expression*. User experience is the reading and interpretation of all points of contact a user has with some element of the product, brand or action. In other words, these touchpoints are a person’s experiences of using something emotionally as well. In the case of the sailing experience, the user must feel comfortable, safe and calm to carry out his crossing. The four pillars of user experience are:

- **accessibility** : access to components and equipment must be facilitated, considering the limited area available on the catamaran;
- **functionality** : the vessel and its components must fully fulfill the

purpose for which they were designed.

- **usability** : the vessel's accessories must have an intuitive and immediate use and full interaction with the sailors;
- **utility** : the objects must have a pertinacity, since each and every element represents weight and implications for the catamaran's performance;

Pandiani 's speech is also linked to the 17 Sustainable Development Goals. We found that the Polar Route fits into categories 7, 12, 13, 14 and 17:

SDG 7. Clean and affordable energy - Ensure access to cheap, reliable, sustainable and renewable energy for all.

SDG 12. Responsible consumption and production - Ensure sustainable production and consumption patterns.

SDG 13. Action against global climate change - Take urgent action to combat climate change and its impacts.

SDG 14. Life on water - Conservation and sustainable use of oceans, seas, and marine resources for sustainable development.

SDG 17. Partnerships and means of implementation - Strengthen means of implementation and revitalize the global partnership for sustainable development.

With that, the specific objectives were configured as follows:

- Improve the sailing experience on the POLAR ROUTE crossing;
- Create facilitating devices, compatible and coherent with naval engineering;

METHODOLOGY

The selected methodologies were *Design Thinking* and *Emotional Design*. The *Emotional Design* methodology was created by Donald

Norman². Emotional Design is based on three levels of understanding: visceral, behavioral and reflective. The visceral level is the impact that reaches the user. Norman (2008) calls the "WOW" effect. The behavioral level is the expected interaction action between the human being and the object. The reflective level is the instance of judgment about the product, service or concept where the user expresses qualitative attributes "It's good, it works! It's beautiful! Its ugly!".

Design Thinking establishes three major moments such as Immersion, Ideation and Implementation. These areas are subdivided into phases: understanding, observation, ideation, prototyping and testing. The development of the project follows this sequence. The phases are dialogic and it is possible to return to the process, review and return to previous steps in the event of any fragility. In the immersion phase, advanced *Design Thinking* tools were applied together with Netnography. The results were cross-referenced with *Emotional Design* tools.

ENGAGEMENT AND THE CREATIVE PROCESS

In the first class, the proposal was presented and the students could hardly believe that they would have a close relationship with one of the greatest sailors in the world and especially with the challenging responsibility of improving the sailing experience. The concepts will be applied to the catamaran to be built by Holos Brasil³.

Using *Design Thinking* as an initial methodology, we set out to immerse ourselves in the theme and create engagement mechanisms through social media and document repositories available on the

2. Donald Norman is an electrical engineer, psychologist and cognitivist. He was Steve Jobs' right-hand man as vice president of technology. He is a professor at the University of California – San Diego and in graduate programs at Harvard.

3. Holos Brasil is a shipyard that started its activities in the UFRJ incubator. Founded in 1998 by Eng. Lorenzo Cardoso de Souza, the company manufactures boats and accessories in carbon fiber. Holos will be the shipyard that will manufacture the catamaran for the Polar Route.

Internet. The detailed structuring of the activities followed paths of approximation between the students and Pandiani. The implementation of creative activities that allow the construction of knowledge involved the constant monitoring of the teams in order to create meaning for the project. This moment was of crucial importance, as engagement alone does not add value to the project.

The engagement started with the invitation made to the teams to send a positive message and an image that referred to the Arctic addressed to the sailor. As the author of the book "The sea is my land", the students sent a *direct* via Instagram "@betopandiani, the sea is my land too" and added two lines with a personal message about what they thought of this experience. Pandiani did not expect the action and was very emotional. Spontaneously, he answered each one. The sailor's channel with the students was created.

The beginning of the project had a videoconference between Beto Pandiani and the naval engineer Lorenzo Cardoso de Souza. Souza is responsible for building the 22-foot catamaran that will have a pedal system to generate clean energy and move the boat in calm stretches. It presented the characteristics of carbon fiber, the constructive material chosen for the catamaran. Afterwards, Pandiani told details about his previous expeditions, with many audiovisual resources to delight the students. Pandiani provided a listing of equipment, necessary luggage and food. Souza provided a standard catamaran project.

The next step was participant observation. Therefore, inspired by Angrosino (2009), we proposed the perceptions at work: to investigate all the images related to the design of catamarans from previous expeditions. With this in hand and considering previous research, the students performed the following activity:

Considering the keyword SURVIVAL, list the verbs raised throughout the research and record the most important aspects of the user's journey. Around the verbs, map the objects and resources needed to carry out the crossing.

The next step was the structuring of the teams following the classic baptism ritual in the naval area. The morning teams were named after classic vessels and those at night, the constellations of the Polar Route. The historical vessels selected were: *Constitution*, *Etoile*, *Sagres*, *Chile-Esmeralda* and *Cisne Branco*. The constellations are *Andromeda*, *Cassiopeia*, *Cygnus*, *Pegasus*, *Orion* and *Phoenix*.

With all the material in hand, the students started the project in the process of collective ideation. For ten weeks, the students had meetings with Beto Pandiani and Souza to assess whether the projects met their needs. Many insights were generated, surprising Pandiani and Souza, as the students were not sailors, but through design, they solved various user pain points (*pain points*) and met their needs.

CONCLUSION

The work was extensively documented proving that the transition from the face-to-face situation to the virtual one did not affect the students' development and the mandatory curricular compliance. On the contrary, the virtual environment facilitated interactions where time and space did not impose limits. There were 20 intense school weeks, where 11 teams generated 36 projects. Of these projects, Souza and Pandiani selected 17 for the development of the executive project. The evaluation criteria considered creativity, feasibility and feasibility. The projects were as follows:

- *Constitution – Pain point*: polar bears. Project: temperature sensor to detect approaching polar bears at 100 meters.

- *Étoile – Pain point*: accumulation of used packaging on the catamaran – Project: creation of a soluble plastic for food.
- *Sagres – Pain point*: calm. Project: created pedal system and ergonomic bench for sailors.
- *Chile Emerald – Pain point*: docking and catamaran stops. Project: using a satellite system, they analyzed the different types of soil and designed the underside of the catamaran.
- *White swan – Pain point*: reconciling ergonomic aspects of the difference in height between sailors (Pandiani : 2.02 m and Bely : 1.70). Project; adjustable ergonomic seat creation.
- *Andromeda – Pain point*: catamaran transport car – lack of space. Project: collapsible transport trolley.
- *Cassiopeia – Pain point*: improvised fixing of equipment. Project: creation of a simple device, but with 1001 utilities.
- *Cygnus – Pain point* : catamaran without cabin – protection in the harsh environment. Project: Pedal system and folding cabin.
- *Pegasus – Pain point*: land displacement of the catamaran. Design: Bottom blades on the catamaran to facilitate gliding on icy surfaces.
- *Orion – Pain point* : to reconcile ergonomic aspects of the difference in height between sailors. Design: ergonomic seat.
- *Phoenix – Pain point*: lack of lighting. Project: created support lighting system with photovoltaic system.

REFERENCES

ANGROSINO, Michael. *Etnografia e observação participante*. Porto Alegre: Artmed, 2009.

BLYTHE, Tina *The Teaching for Understand – TfU*, N. Jersey: Jossey-Bass, 2006.

DEDE, C. *Transforming education for the 21st century* Cambridge (MA): Harvard University, 2021.

FIGUEIREDO, A. D. *Comprender e desenvolver competências digitais*. RE@D - Revista de Educação a Distância e E-learning V 2, Nº 1. Lisboa, Março 2019.

KOZINETS, Robert V. *Netnografia: realizando pesquisa etnográfica online*. Porto Alegre: Penso, 2014

NORMAN, Donald *Design Emocional: Porque adoramos (ou detestamos) os objetos do dia a dia*. Rio de Janeiro: Rocco, 2008

PANDIANI, Beto *O mar é minha terra*. São Paulo: Grão, 2010.

PANDIANI, Beto *The sea is my land*. Sao Paulo: Grain, 2010.