

Collaboration in Production of Health Literacy Communication Material

João Cardoso¹⁾, OKUBO Masamichi²⁾, KONDO Tetsu²⁾

¹⁾*Center for Neuroscience and Cell Biology of the University of Coimbra*, ²⁾*Department of Interactive Media*

(Received October 31, 2022 ; Accepted December 6, 2022)

Keywords: Co-creation; health communication; media production; transmedia storytelling

1. About João Cardoso's Stay at Tokyo Polytechnic University as a visiting scholar plan

The development of innovative science communication activities has been extremely important in recent years, to bridge the current gap between science and society, promoting wellbeing and awareness among citizens, through the creation of platforms that allow a free dialogue between both halves ¹⁾. One of the scientific fields with an exponential increase in notoriety and interest among citizens in the past years has been the health research field, mainly due to the ongoing COVID-19 pandemic, which began in early 2020 ²⁾. Health literacy, or the public's awareness and understanding of health information, was shown to be an extremely important skill during the outbreak of the pandemic. Additionally, it has also been recently reported lower levels of health literacy among citizens in Japan when compared to the European panorama ³⁾.

To tackle the difficulties regarding health communication within patients, family members, and citizens in general, on 2020, the Center for Neuroscience and Cell Biology of the University of Coimbra (CNC-UC) started a national campaign to promote health literacy during the year of 2021. During this campaign, several media materials, such as radio broadcasts, filmed interviews, and animations about different health themes were produced.

João Cardoso also began his PhD thesis in 2021, directing and coproducing the mentioned above animations ⁴⁾, as well as assessing their impact on promoting health literacy, through the conducting of social and evaluation studies within Portuguese citizens of all ages, until early 2022. This evaluation was done according to previous explored methods, consisting of quantitative evaluation methods and questionnaires ⁵⁾. These animations and respective scripts, as well as all the other produced materials, were prepared to be included within the same storytelling universe, creating an immersive transmedia storytelling strategy. The results obtained from this first half of the project were submitted to a scientific journal and are currently awaiting revision.

Due to the ongoing production collaboration between Tokyo Polytechnic University and the University of Coimbra since 2010, the proposal for Cardoso's PhD project, upon scholarship application, included a stay at Tokyo Polytechnic University for 1 year, to co-produce several materials about several health topics, with a special importance in the Japanese culture. During this time, the productions would be done with the students from the Entertainment Video and Media Design laboratories from the Interactive Media Department of the Faculty of Arts, led by Masamichi Okubo and Tetsu Kondo respectively, with posterior evaluation with Japanese citizens for international report submission. During this process, Cardoso is also planned to assist in

pre-production planning, production, and post-production feedback.

2. Research objectives and methods

Continuing the work developed within the PhD project “Transmedia as a vector in science and communication and health literacy: the Japan-Portugal connections to produce new health communication materials”, the main aims of this research comprise the further development of health communication materials to promote health literacy in Japan. The other aims of this project include the improvement of the production and communication skills by both the collaborating students and Cardoso. Finally, the other aim includes the measurement of the efficiency of the transmedia strategy in which the materials were produced in promoting health literacy among Japanese citizens, as previously assessed within Portuguese citizens.

The production methodology encompassed the selection of specific health themes, with high importance and prevalence within the Japanese panorama to raise awareness and increase its knowledge. Subsequently, the themes’ respective research language was translated into an easily accessible language by the students, culminating in a production profile, which was written and then presented to the students. For the produced short films between August and October 2022, the students would dissect the previously written profile into a production, and then plan the pre-production, production, and post-production stages. Cardoso accompanied all these stages with the students, as well as developed a prototype for the short films as well. The used software for editing was Adobe Premiere Pro and Adobe After Effects.

For the media design productions, the themes were presented to the students, and the different stages of production were planned to be presented

on a weekly basis.

3. Activities with Interactive Media Department students

A. “Color of Memory” Project

The first production developed was the short film called “Color of Memory”. The main aim of this short-film was to demonstrate the point-of-view of someone developing Alzheimer’s Disease, by demonstrating the evolution of the disease across its four stages. This short-film was developed with Zho Shu, a fourth-year student at Kondo’s lab.

The pre-production stage began on July 25, with the development of the storyboard and script, location scouting, accessory sorting, and equipment tests. Production occurred during August 2, and the filmed locations were the Yoyogi Park, an apartment in Nakano Sakaue, and Tokyo Polytechnic University’s halls and consultation room, upon previous request. Filming was done with a GoPro Hero8, using a mouth mount accessory, in 4K. Post-production occurred from August 3 to August 10, using both Adobe Premiere and After Effects.

The main concept used for this short film was color, using blue to symbolize the remembered objects, people, and locations, and the change to red was used to symbolize the forgotten categories. The presence of red became more prominent along the progression of the film (Figure 1 and 2).

B. “Sound of” Projects

The second production project began on September 13 with the 3rd year students at the Entertainment Video laboratory led by Okubo. The explored health themes comprised both depression and heart attack. To further explore these themes, as well raise awareness to them, the trigger in both productions would be

“anxiousness”, connected to lack of proper sleep, which accelerates the appearance of depression symptoms, and connected to overworking, which promotes an early onset of heart attack. To demonstrate the different effects of “anxiousness” in both diseases, the proposed concept for the production was music, which would be lowered to indicate appearance of depression, or increased to indicate onset of heart attack. This project was presented to the students by a PowerPoint presentation, with all the main objectives and contextualization.

The students were divided into two groups, and each group prepared the production of their respective video. To help them encompass the health topics into their productions, a profile of each disease was handed out, with data, as well as a previously written story to help them in the pre-production stage. The first group, with the theme related to depression, created a story in which a young girl begins feeling social anxiety and isolation due to being unable to find a job, worsening her sleep, and causing her to slowly fall into depression.

Additionally, it also explores how this condition may affect other people, which we are oblivious to, raising the awareness for a more open conversation about mental health. The second group’s story focused on a young man who leads a

normal routine life, balancing his work and social lives. One day, he is appointed as the team leader for a new project by his boss. The anxiousness to exceed expectations and continue to be good at his job causes him to overwork, disrupting his previously achieved routine balance, distancing from his parents, and then, collapsing in his workplace from a heart attack. In the end, his boss selects another colleague to lead the new project, leaving the main character frustrated. The story sought to reinforce the current problems related to overworking, and its nefarious effects in both health, and social life.

Both groups began their pre-production stage on September 20. Upon suggestion, and from the previously provided files, the students conducted brainstorming sessions, associating words to the messages and stories they would like to convey. At the end of the session, they started developing a script, a storyboard, a list of the necessary equipment, filming locations, and wardrobe. During this process, Cardoso provided any assistance necessary (Figure 3 and 4). Moreover, several elements across both productions were also common with the project “Color of Memory”, to reinforce the previous transmedia/multiverse strategy.

Production among both groups began on September 27 and went until October 4. During



Figure 1 - Screenshot of “Color of Memory”, showing a blue background and person, and a red, now forgotten object



Figure 2 - Screenshot of “Color of Memory”, now showing a red and forgotten background, surrounding the blue person

this time, and while filming, the students would be accompanied and counseled by Cardoso, as well as by Okubo, Professor and head of the laboratory, and Yuji Kobayashi, Professor assistant (Figure 5 and 6).

Post-production resumed from October 5 to October 8. On October 11, each student presented their own version of their respective group's theme, receiving feedback on their work.

After the production, the students filled a quick survey on how these projects improved their communication and production skills. For a later report we will provide a more in-depth analysis of the answers to these questions.

C. Media Design Projects

The collaboration with the students at the Media Design laboratory began on July 5, with assistance by Cardoso in the preparations at the Tokyo Polytechnic University's Nakano Campus' "Open Campus", on July 18 as well as slight assistance in the execution of their media design project at the Nakano Festival, on October 9 and 10 (Figure 7). On October 12, two independent productions started. The ideas of these projects were



Figure 3 - Pre-production planning session with the "Sound of Stress" student group

introduced to the students, correlated to themes such as UV exposure and skin cancer, as well as heartbeat, blood supply, and heart diseases. The main objective of these productions is to create an interactive relationship with their user, through user experience design. These new products will also allow the creation of a new interface. Up until this date, the ideas were pitched, and the students are reorganizing themselves, and understanding how their pre-production stages will occur at the present moment.

4. Obtained Productions and Results

As of October 13, three productions were completed, in the form of short films. Furthermore, the last two productions, within the "Sound of" project, resulted in the students' projects at the Entertainment Video laboratory, spanning 10 short films within both the proposed themes.

The short film "Color of Memory" was exhibited on August 18 and August 19, at the 2nd edition of the Tokyo Polytechnic University's Nakano Campus' "Open Campus", to high school students, family members, and other Tokyo Polytechnic University students and faculty members. Overall, the received feedback was extremely positive, as the viewers described the film to be able to make Alzheimer's Disease and its progression easier to understand. Along the exhibition of the film, a



Figure 4 - Pre-production planning session with the "Sound of Smile" student group

short and more detailed handbook of the disease was also shown (Figure 8). The film is available on YouTube.

Additionally, Cardoso has shared his career, along with the project in the class Comprehensive Study of Media, on September 21.

5. Other future plans

A. On-going Projects

Continuation of on-going projects with the Interactive Media department students, as well as beginning of new projects with the Animation department students.

B. Quantitative Evaluation

As mentioned above, it is planned to evaluate how the productions can increase the health literacy, or knowledge, through their simplification of the health messages. To accomplish this goal, the development of a health literacy survey, as well as a questionnaire, consisting of items pertaining to the productions used for evaluation, will be developed. This evaluation will occur within Japanese citizens, with a sample ranging from the age of 16, seeking to reach different education

levels, age levels, and health literacy levels. For this, we plan on contacting several institutions, such as businesses, companies, schools, and universities, to organize evaluation sessions.

The model for this evaluation will be the Solomon 4-group design, previously tested in Portugal, and previously described to work for quantitative evaluation ⁶⁾. Additionally, this evaluation will seek to sample at least 250 individuals across all testing parameters.



Figure 5 - Production session of the "Sound of Stress" student group



Figure 6 - Production session with the "Sound of Smile" student group

References:

1. Ratzan SC. "Health literacy: communication for the public good". *Health Promot Int*. 2001 Jun 1;16(2):207-14.
2. Sandrini M, Katz K. "Communicating COVID-19: Prospects for a bolder Science?" *Elephant in the Lab*. 2020.
3. Nakayama K, Osaka W, Togari T, Ishikawa H, Yonekura Y, Sekido A, et al. "Comprehensive health literacy in Japan is lower than in Europe: a validated Japanese-language assessment of health literacy". *BMC Public Health*. 2015 Dec 23;15(1):505.
4. "Color of Memory", <https://youtu.be/qdHiTEqErdo>, 25 October 2022. Entertainment Cinema Laboratory of the Interactive Media Department Youtube channel.
5. Mauz E, von der Lippe E, Allen J, Schilling R, Müters S, Hoebel J, et al. "Mixing modes in a population-based interview survey: comparison of a sequential and a concurrent mixed-mode design for public health research". *Archives of Public Health*. 2018 Dec 4;76(1):8.
6. Solomon *Four-Group Design*. In: *The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation*. 2455 Teller Road, Thousand Oaks, California 91320: SAGE Publications, Inc.; 2018.

Collaboration in Production of Health Literacy Communication Material



Figure 7 - Nakano Festival planning session with the Media Design students

概要

東京工芸大学芸術学部インタラクティブメディア学科では、ポルトガルのコインブラ大学のCenter for Neuroscience and Cell Biologyに所属するジョアン・カルドーゾ氏を2022年7月から1年間の予定で客員研究員として受け入れ、「ヘルスリテラシーコミュニケーション教材の制作におけるコラボレーション」というプロジェクトを行っている。この報告では、研究プロジェクトの目的や運営方法に関する説明と2022年10月までに行われた活動内容を述べる。



Figure 8 - Exhibition of "Color of Memory" at the Nakano Open Campus