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III Workshop for Astronomy Beyond the Common Senses for Accessibility and Inclusion (3WAI) (November 29-30, 2023)
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CREATION OF ACCESSIBLE ASTRONOMICAL DANCE-THEATER PLAY: ARTIFICIAL ECLIPSE

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RESUMEN

Con el desafío de comunicar ciencia a través de la danza y el teatro de manera accesible a personas con discapacidad, el Colectivo Analemma, grupo multidisciplinario de jóvenes artistas y científicos, crearon "Eclipse Artificial: Una instalación multisensorial de danza", que fue recientemente estrenada en Santiago de Chile el 5 de octubre del 2023. En esta charla relataremos la gran experiencia de aprendizaje que fue el colaborar en el proceso de creación de la obra como asesores de contenido e inclusión. Daremos cuenta del ejemplar trabajo realizado por el colectivo para dar acceso al público con discapacidad a una experiencia tan intrínsecamente visual y auditiva como la danza, con la participación de las mismas comunidades en las etapas creativas del proyecto, y de la reacción de los asistentes, registrados en encuestas previas y posteriores.

ABSTRACT

With the challenge of communicating science through dance in an accessible way to people with disabilities, the Analemma Collective, a multidisciplinary group of young artists and scientists, created "Artificial Eclipse: A multisensory dance installation" ("Eclipse Artificial: Una instalación multisensorial de Danza") which was recently premiered in Santiago de Chile on October 5, 2023. In this work, we will relate the great learning experience of collaborating in the creation process of the play as a content and inclusion advisor. We will report on the exemplary work carried out by the collective to give the disabled public access to an experience as intrinsically visual and auditory as dance, with the participation of the communities themselves in the creative stages of the project, and the reaction of the public, recorded in pre- and post-surveys.

Key Words: inclusive astronomy — astronomical art — dance — BVI — hearing disability — transdiscipline

1. INTRODUCTION

Since 2016, in the Instituto de Estudios Astrofísicos of Diego Portales University (IEA UDP), formerly known as Núcleo de Astronomía UDP, we have been working in 2 main outreach lines: the Astronomical Art, and the Inclusive Astronomy. Starting in 2022, these 2 lines have naturally merged into 1 to create transdisciplinary experiences, with poets and astronomers working on real-time descriptions of astronomical images. In 2023 Erika Labbé, our Outreach Coordinator, was invited by the Analemma Collective to collaborate on the creation of a multisensory dance-theater play, based on the Chilean Solar Eclipses (2019-2020-2021), accessible to BVI and hearing impaired people. Unlike previous experiences with poetry and literature, dance-theater once again proposed a highly visual communication format, as astronomy initially did, which represented a big accessibility barrier for people with visual disabilities. However, this project was mainly oriented to communicate science, and the same narrative resources that were used for this purpose could be those that made it accessible, both for BVI and hearing impaired people.

In previous collaborations in which we have worked with artists (painters, musicians, designers, architects, etc.) we had managed to achieve a balance between scientific rigor and artistic expression. In other collaborations with inclusive educational projects (Online Astronomy Workshops for Bibliociegos[2], IDATA project[3]), we have managed to collaborate with communities of people with disabilities, to ensure their participation in the development stages. This time the challenge was to strike a balance between the 3 factors: Science, art and inclusion, in order to achieve effective communication of science.

2. CREATION PROCESS FOR A TRIPLE CHALLENGE

For this project, the Analemma collective[4] had a team of young scientists and artists (Fig. 1) ready to

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[2]https://www.youtube.com/playlist?list=PLiw_tfOil96y02LtnBYlVjYciKOau90m4

[3]https://idataproject.org

[4]https://www.instagram.com/colectivoanalemma/

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Fig. 1. "Artificial Eclipse" Project Team with Erika Labbé (on the right).

face the triple challenge of creating inclusive astronomical art: Director: Olemma Leyton — Choreographic Consulting: Elías Cohen — Performers: Francisco Sepúlveda, Mayra Eltit and Álvaro Pizarro — Comprehensive Design and Technical Production: Daniela Portillo and Cristóbal Ramos — Scenographic Realization: Scenic Love — Costume Making: Gina Vásquez — Realization of Headdresses: Alejandra Rivas — Apparatus Realization: Camuro Producciones — Music: Pascal Torres — Mix: Simón Ibarra — Audiovisual design: Carlos Muñoz — General Production: Gustavo Carrasco — Technical Production: Cristóbal Ramos — Communications: Abigail Navarrete. Erika Labbé's role was Content and Inclusion Consulting.

2.1. *Inclusion in the creation process*

Inclusion was addressed in a practical way during the creation process, with the purpose of introducing the team to the fundamentals of inclusion, bringing them closer to communities of people with disabilities, and providing them with feedback from advisors with visual and hearing disabilities. Erika Labbé was in charge of:

- Present introductory workshops to the team about inclusion.
- Coordinate collaborative experiences between the team and the Central Library for the Blind (Bibliociegos): Awareness-raising experiences for the team and a dance workshop for library users.

Fig. 2. Meeting of the hearing disability advisor Javiera Villavicencio with the team, July 2023.

- Coordinate meetings with advisors[5] Javiera Villavicencio, deaf person (Fig. 2), and Carlos Acevedo, blind person.

On the other hand, the team was in charge of developing surveys for the BVI people who participated in these activities, as well as test instances and surveys for teachers, in order to test the educational aspects of the work.

3. IMPORTANT INPUT FROM ADVISERS

During meetings with the advisors and after some test sessions, we received the following advices:

- Place the sign language interpreter as close to the action as possible.
- Avoid having speech at the same time as dancing, so as not to divert the visual focus from the Sign Language interpreters.
- Describe the characters and their clothing at the beginning (Fig. 3).
- Have a stand with tactile models of the astronomical theme (solar eclipses) and samples of clothing fabrics as a complement to the work.
- There is no need to describe every movement. "Let BVI people use their imagination," as Carlos Acevedo, our advisor, said.

These ideas were implemented in the play. Other ideas were suggested, but they were not possible to implement due to the lack of availability of people (interpreters) to carry them out:

[5]The advisor's work was a contribution from the ASTRO20-0044 project, of the Inclusion and Gender Working Group of the Chilean Society of Astronomy SOCHIAS `https://sochias.cl/actividades/grupo-de-trabajo-en-inclusion-y-genero/`.

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- Hire a sign language interpreter coming from the deaf community (someone with hearing loss, or along with another interpreter offstage to guide them).

- Incorporate the sign language interpreter as another performer in the play (as done in some music concerts, where the performer dances alongside the singer).

These ideas remained as interesting challenges for future projects. Other elements of the play that served both to facilitate scientific communication and inclusion were:

- Emotional approach: letters from people who experienced the 2019 total solar eclipse incorporated into the script.

- Each stage of the eclipse was well-marked with information.

- Sound and visual codes were explained at the beginning

- Music based on the sonification of astronomical images.

- Diversity of moods during the play (relaxed, fast, happy, or sad moments)

- Humor.

This variety of elements was very well appreciated by the public, as could be seen in the surveys carried out at the end of the play.

4. EXPERIENCE OF THE TEAM AND PERFORMERS WITH INCLUSION

After the entire process, we asked Olemma Leyton, director of the project, about Colectivo Analemma's experience incorporating this new inclusive perspective into their work: At the beginning, they accepted the idea as a challenge. At some point, they thought that it was complex to meet the requirements of each audience, but later they understood that, with the abstract elements of dance and theater, they could include different audiences.

For them, the previous interaction with BVI people in Bibliociegos was crucial.

Fig. 3. The performers Francisco Sepúlveda, Mayra Eltit, and Álvaro Pizarro characterizing the Earth, the Sun, and the Moon (from left to right). They described their clothing at the beginning of the play, as part of the script.

5. PUBLIC RESPONSE

Between October 5 and 15, 2023, 7 performances were held at the well-known cultural center "Matucana 100[6]" in Santiago, with a total attendance of about 650 people. Two surveys were carried out: one at the beginning and another at the end, to know the public's previous experiences in dance-theater plays, their knowledge about eclipses, how many of them declared they had a disability, and what types of accessibility elements they recognized in the play. Among the 342 who responded to the first survey, 14 declared having one or more types of disabilities, among which were 8 with physical disabilities, 3 with visual disabilities, and 1 with hearing disabilities, in addition to people with some type of neurodivergence. The second survey included accessibility questions, and was answered by 87 people. The most recognized accessibility elements were:

- Music
- Sounds
- Description
- Sign Language
- Story

[6] https://www.m100.cl/archivo/2023/danza-2023/eclipse-artificial/

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Fig. 4. Word cloud based on responses to the survey question: "In terms of inclusion for audiences with disabilities, what elements of the work do you consider a contribution?" Generated by `https://www.nubedepalabras.es`.

This list was obtained by generating a word cloud (Fig. 4) that highlights the most repeated words in those responses (in Spanish).

When asked about possible improvements in accessibility for the hearing impaired, 53 people responded, mostly mentioning more lighting for the sign language interpreter, while others said nothing needed to be improved. Regarding improvements for BVI, 38 people responded, the most of them indicating that there was nothing to improve, while others suggested improving the sound quality, or present the play indoors to avoid ambient noise. At the end of the second survey, numerous messages of congratulations to the team and gratitude for such a captivating and well-done job were also found. This comment summarizes the public reaction: "I consider it very important to carry out this type of work; I think it is very interesting to feel immersed in an eclipse just by witnessing its stages, since this is achieved thanks to every artistic element used. Thank you for sharing research through art. Thank you for impressing us and making the audience have new questions".

6. CONCLUSIONS

After this 6-month process of extensive work meetings and workshops, the result left us very satisfied and with several learnings about the process:

- Accessibility for BVI people was well accomplished
- Accessibility for deaf people could be improved
- Science communication was well accomplished
- Dramaturgical and dance elements allow for the inclusion of a diversity of audiences.
- Previous interaction with the BVI community was crucial.

We hope that this experience will be useful to those who want to undertake a similar project.

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