



THE DESIGN of places, costumes and props BY USING VR AS A CREATIVE TOOL

The main purpose of this article is to learn about and widespread the project [#BeYourVoice¹](#), directed by Teatro de Aire, which starting point was the initiative [You Are Next: Empowering Creative Women](#), supported by [UNESCO-Sabrina Ho](#).

By Raúl Rodríguez, Theatre Doctor from Universidad Complutense, Madrid, Spain.

Translated by Avril Vega

March 30th, 2020

Teatro de Aire started in 2010 as a Staging Company. In 2015, it was consolidated as a Civil Association, which intended to fulfil projects such as workshops, agreements to support artists from different areas, creating arts and culture centers and producing art projects in different formats.

Nowadays, this has become a key proposal: it aims at women empowerment, and at the same time, it provides them with tools that include Tilt Brush and SketchUp integrated to VR, in order to benefit stage, costume and prop design - as well as applying these into diverse expressions and formats, such as theatre, cinema, videogames, extended art and an endless list of applications, derived from the artists' capabilities of imagination and project consolidation.

The venture unquestionably looks for strengthening the role of women within the Creative Design Industry. Teatro de Aire launched this proposal over the second half of 2019, and it was intended to influence

a total of 100 Mexican women whose ages were between 18 y 40. The main requirement was users to have prior knowledge related to Stage Design and a specific idea or project that could be developed along a five-week, *Blended Learning* course, which consisted of e-learning sessions.

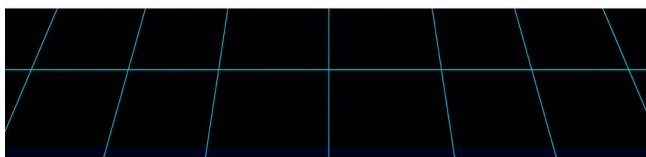
There, they would have the opportunity to grasp a series of theoretical and practical knowledge, organized in nine modules. The program was organized as follows:

- **Module 1: Introduction**
- **Module 2: Technology for Stage Arts**
- **Module 3: Planning a virtual stage**
- **Module 4: 2D**
- **Module 5: Photogrammetry 3D**
- **Module 6: 3D Model**
- **Module 7: VR Stage**
- **Module 8: Integration Weekend**
- **Module 9: Final Activity.**

¹ Experimental Project that uses VR as a new tool for stage design in Mexico.

² Application that allows the user to create tri-dimensional visual works by using a VR device. The software provides tools such as paintbrushes, colors, galleries, textures, lights and other items. Main feature: the user can move the graphics, and the software recognizes body motion in real time.

³ 3D Modelling and Visual Design software. Mostly used in Architecture, Graphic Design and 3D Modelling, also used for Engineering, Industrial Design, Stage or Set Design, Videogames, Films, etc.



It is important to remark that each Module was sub-divided, and included material such as videos, tutorials, readings and practical activities.

During the week before the Final Activity, the students had the occasion to participate in the *Integration Weekend*, in which, besides interacting with the necessary software and hardware to develop their project designs, they were able to participate in two Master Classes. The first Master Class was 'Raising Funds', by Professor Marcela Jiménez, whose main activity is Managing Arts and Culture. The second Master Class, 'Virtual Reality', was delivered by Professor Carmen Ramos, who also manages Visualization and VR Department and Ixtli Observatory at UNAM.

Over the last week, the students completed a portfolio, as a result of the integration of new acknowledgements applied to their own project. This way, they closed an academic and artistic learning process, which eventually will foster projects that will become an important part of the Mexican culture that also embrace the chance to be presented in another countries.

After this experience and opportunity launched by *Teatro de Aire*, *UNESCO* and *Sabrina Ho* for these hundred women, we can foresee the following effects:

- To provide new tools to a very important sector of the Mexican creative community.
- To reduce the costs and enable the Stage Design, Custom and Prop production processes.
- To open creative possibilities that detonate new artistic proposals.
- To support new educational ways to cover current artistic and creative needs in context.

Virtual staging, customs and props are created on *Tilt Brush*, an application where *Photoshop*⁴ (2D),



SketchUp (3D) and *3DF Zephyr*⁵ files are priorly customized. At the time, *Tilt Brush* classifies files into bidimensional or tri-dimensional items. Such files become a virtual gallery, which in terms of Stage Production, it corresponds to the very same items that we keep into our Production Storage and which will eventually become the base material for their unique designs. This is exactly where it lies a critical advantage. In cost / benefit terms, working with these kind of tools means to enable a dynamic, visual presentation as a Stage Design pre - production project for the whole creative staff.

therefore, it sets up a more explicit sensation of the real dimensions for that stage. Scale 1:12 allows us to review the area only as a maquette.

Such proposals are a high-quality reference, due to tools available for the designers that allow them to produce a very detailed work. It is outstanding how these tools also permits to explore some illumination settings - which is very useful, since it is well known that during Stage Design it is almost impossible to test lights during rehearsals, due to the fact that that illumination is a significant element which will



On the picture we can see a design that includes bidimensional and tri-dimensional images, priorly worked and set on Photoshop, SketchUp y 3DF Zephyr.

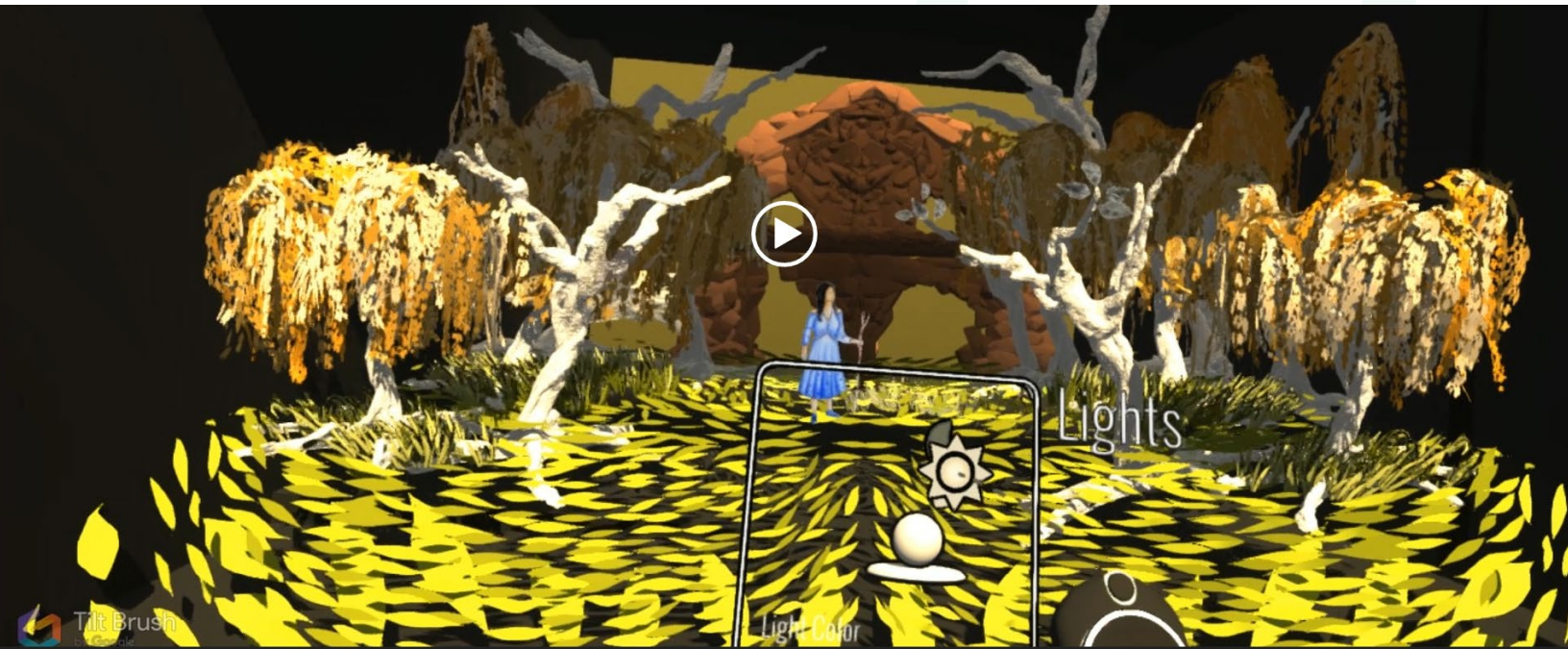
Tilt Brush allows us to keep a good communication flow, since stage designers can share a video or pictures of their designs. We should mention that the designs can be shared in different scales. The most common (and useful) to review the designs are 1:1 and 1:12. Scale 1:1 allows the user to have an insight experience on stage and walk across it,

eventually be integrated to the design until the whole scenography is set up.

It is important to mention that the level of communication among creative staff opens the possibilities to drastically reduce the margin of error at the point of consolidating the stage, the

⁴ PNG format, bi-dimensional images.

⁵ The program makes a photogrammetry to real, tri-dimensional objects, and turns them into 3D images. These images can be used later, on *Tilt Brush*.



customs or the props. Without a doubt, such design conditions drive the whole production into a lower cost – for both budget and time. It is well known that it is expensive enough to make, transport and keep a stage, the customs or a prop design in good shape, or even a prototype model in a physical format, rather than a digital one.

Knowing photogrammetry, 2D or 3D images are the core elements and digital tools that enhance the transition to a digital, accomplished design. We must remark that these tools offer the designers an endless amount of means enabled for them, right at the reach of their hand.

The opening of a new horizon with new digital deployments for art, undoubtedly result in new discoveries and clearly new, standardized design processes, same as it happened with digital tools for films' creative staff.

Through this initiative, a lot of possibilities are open, which may detonate many, diverse and new artistic quests and proposals. This is the moment to explore and experience the chances that technology offers for all of us to find out how far we can go with it.

There is nothing left but celebrate this proposal, hoping that Teatro de Aire to continue contributing to Mexican women's empowerment, and the consequent evolution of Mexican Staging Companies and works. It is essential that these efforts become more visible, so they can count on arts and culture support in the country, aiming to reach higher and better achievements.■

⁷ Digital photogrammetry is actually an assemblage of techniques which purpose is to obtain space-related information from physical objects and their surroundings by taking digital pictures and images, and interpreting them by reconstructing them in a computer. This procedure makes possible a tri-dimensional model creation.