

Inclusion of deaf and hearing-impaired people in a planetarium show

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Abstract. In the Planetarium of the city of Rosario the deaf and the hearing-impaired people could only perceive the visual elements of the show, such as the starry sky and the video images, which are meaningless without the narration. The technical team detected the problem and implemented a solution, adapting a particular show with a team of interpreters and a deaf person, with a low cost of development and arriving to great results.

Keywords. inclusion, planetarium show, deaf people, hearing-impaired people

1. Introduction

The Planetarium of the city of Rosario has an analogic Carl Zeiss Model IV projector and 3 regular size (non-full dome) video projectors functioning as a digital complement. For an adequate analogic projection, the dome requires absolute darkness.

The deaf and the hearing-impaired could only understand, with the assistance of a sign language interpreter, the welcome and introductory speech which are delivered with the lights on. Once the show started, the darkness eliminated the possibility of interpretation, and the deaf inevitably missed the explanations, concepts and metaphors from the voice-over. They could only perceive the visual elements of the show, such as the starry sky and the video images, which are meaningless without the narration.



2. Approach to the problem

Detect the problem. The customer service staff should always attempt to identify the problems the audience might have. Planetarium staff set the objective of making the shows accessible to that group.

Propose experimental solution. Consisting of two steps: 1- The interpretation is inserted in the video displayed by the three projectors. Subtitles can be added if necessary. 2- Auxiliary screen: its goal is to show the sign language interpretation and subtitles whenever there's a voice-over accompanying the sky projection with the analogic planetarium in total darkness.

Apply to one show. “A Tour Through The Solar System” was selected, because it is the show educational institutions demand the most.

3. Development

Team. A multidisciplinary team composed of interpreters from the Argentinian Sign Language association (Lengua de Señas Argentina – LSA), a deaf person, and technicians.

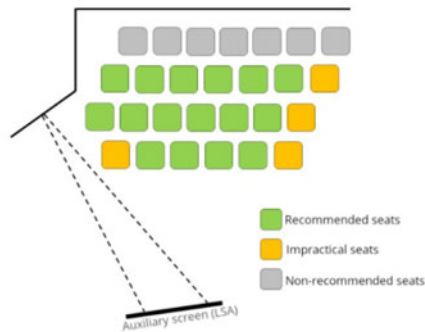
Script interpretation. The interpretation of the script was the first – and the most extensive – step. Interpreters observed that many words of the astronomical glossary do not have a translation. At present time, there are groups of people working in this task in our country. The script was interpreted almost entirely and the film duration is only 30 seconds longer.

Recording. The second step was to mount a film set to record the interpreter on a chroma background to allow for a better insertion on the screen. *D'Angelo et al. (2011)*.



Post production. Subtitles and interpreter were inserted on videos.

New screen. The video shown on the auxiliary screen is displayed by an old projector contained in a black box to avoid light pollution on the dome.



4. Results and conclusions

- **Concrete implementation:** low cost, reuse of old resources and quick configuration whenever switching to the adapted version is required.

- **Positive social impact:** the deaf and the hearing-impaired community showed excitement and gratitude. Likewise, the involvement of a deaf person in the production process was appreciated.

- **The show is not exclusive** to the deaf and the hearing-impaired. Both the hearing and the deaf enjoy the show equally at the same time, which makes the show truly inclusive.

- **Possibility of conceiving new productions** including an interpreted version from the very beginning.

Reference

D'Angelo C. & Massone M. 2011, *La accesibilidad a los medios audiovisuales: la narración en Lengua de Señas Argentina y el subtitulado para personas sordas.*, INCAA.