

## Instrumentarium XX1: Experimental Instruments for the Development of Musical Creativity

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### Theoretical background or Context

Contemporary approaches to music education must keep pace with changes in society and pose a major challenge for educators. Current needs require schools to move towards open and holistic positions, incorporating approaches far removed from classical visions, in which tonal music, conventional notation and traditional instruments are predominant.

The main frameworks of reference are: 1) Embodied Cognition Theory or Embodied Cognition (the focus is on manipulation from the bodily experience); 2) Sound Based Music (the starting point is sound as raw material to be manipulated and transformed, thus expanding the sound palette towards territories open to new dimensions, beyond the tonal); 3) Universal Design (applied to music, it guarantees the design of inclusive materials without access limitations); and 4) The Baschet instrument (in relation to the systems of activation and generation of sound: oscillator types, activation processes, forms of radiation and amplification, and articulation and range modulation systems).

Prior to the design and construction of the instrumentarium, a double process was carried out: a) a survey was carried out with active Spanish teachers of pre-school, primary and secondary education to find out about the musical practices they develop in their classrooms; and b) a discussion group was held with experts to define the general musical characteristics of Instrumentarium XX1. A group formed by researchers from different fields related to music (Educators, Musicians, Sound Artists and Designers) with extensive academic and professional experience in music education and with experience in lutherie.

The R&D project Instrumentarium XX1 is presented, which aims to design and create new experimental musical instruments that facilitate an approach to music based on experimentation, creation and centered on the pupils and their potential.

### Aims

- Facilitate musical experimentation and creativity for a diverse audience.
- To generate new dialogues between the sound, visual, dance and audiovisual arts, and these, with cultural spaces.
- Strengthen the cultural fabric of citizens through accessible, participatory and inclusive artistic proposals.
- Bring contemporary art closer to citizens, especially the most disadvantaged groups.
- To generate new connections with artistic practices, creators, artists, audiences and institutions.

### Methodology

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### **Results/Findings**

As a result of this research process, decisions were made on the following aspects: ease and flexibility of use, simplicity and intuitive use, modularity, sustainability, possibility of analogical-digital hybridisation, possibility of several users for each instrument, diversity of gestures and intra and inter-instrument activations, variety and timbre compatibility, dissociation from conventional tonal scales, favouring an inductive and exploratory use, openness towards contemporary rhythmic-melodic musical practices, originality in its design.

### **Conclusions/Final considerations**

This paper presents the first prototypes, a set of six instruments called: Cordasons, Glissaire, Espirasons, Gratasons, Seqüenciasons. For all of them, priority has been given to the use of ecological, sustainable, durable and accessible materials. The next phase will be that of validation in schools of different educational stages in which the degree of acceptance will be evaluated as well as the possible practices generated.

**Keywords:** Instrumentarium XX1, Musical Creativity, Experimental Instruments, Non tonal