EducaMus
An online platform with integrated software for pre and in-service music training of Chilean Primary teachers

Jesús Tejada. Institute of Creativity and Educational Innovations. University of Valencia. Spain.

Tomás Thayer. Dpt. of Music. Educational Sciences Metropolitan University (UMCE). Chile.

Mario Arenas. Dpt. of Music. University of La Serena. Chile.

1. Introduction

Nowadays, music is a compulsory curricular subject in the Chilean educational system, to which it has been assigned two hours of classes per week. Only 2.25% of the general teachers have formal music instruction [1]. The rest of the teachers have to teach music at Primary Education level, but teachers lack both specialized music and music didactic competences. Formation to achieve these competences should occur during their pre-service teacher training in order to successfully offer music classes at the level of Primary Education. Although, most of the Chilean universities have not taken into account music training for their students. Furthermore, there are not enough institutional or private offers of in-service training music courses. Finally, fulltime teachers engage in their profession for 42 hours per week, making it difficult for them to attend extended in-service music courses. As a consequence of these facts, even when music is highly regarded, as in the Chilean Primary education curricular design, it remains unsystematically approached by teachers with neither music training nor an initial formation in music pedagogy. In order to cover this educational shortcoming, we have developed EducaMus, an online platform intended to host massive open courses (MOOC) devoted to pre-service music training of general teachers in the Chilean educational system. At this moment, EducaMus includes a software solution for this goal called Music Training for General Teachers (Formación Musical para Profesores de Ed. Básica), which has software embedded and associated for real-time music practice and assessment.

Fig. 2 Main interface of Music Training for General Teachers Course

2. Implementation

The Music Training for General Teachers course has followed the model of design science research methodology as a framework, with its corresponding process elements: 1) problem identification, which detects needs and constructs a theoretical framework; 2) construction, responsible for development, analysis, experimentation, and observation; and 3) evaluation, providing for testing and for designing the first public version [2] (figs 1, 2).
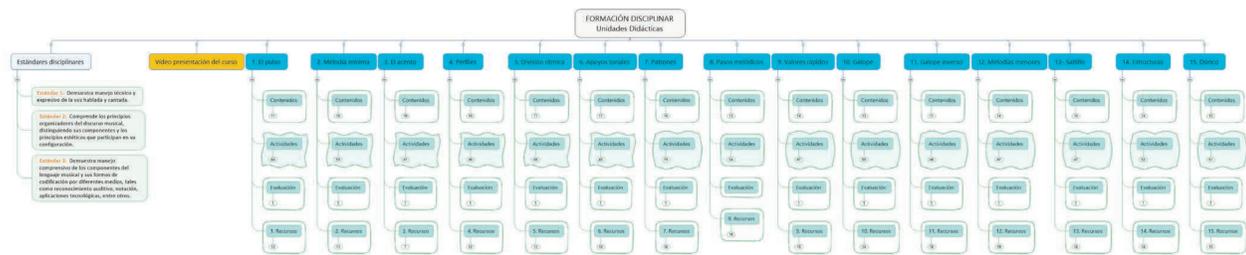

Fig. 1 Didactic structure of Music Training for General Teachers Course

3. Associated software

The users' actions are assessed in real-time by the computer. This proves beneficial for the pupils, who get an immediate evaluation of their performing, and for music teachers, as well, because assessment is one of the most time-consuming and complicated tasks in music-education. The Music Training for General Teachers course includes these resources: 1. Cantus, online software for real-time training of singing intonation [3] (fig. 3). (https://www.cantus.es) 2. Tactus, local software for rhythm training and evaluation (http://www.uv.es/perezgil) [4] (fig. 5). 3. Musipuzzles, online software for the ordering of structural parts of a multipart music piece in real time (fig. 4) (http://www.alexdemartos.es/puzzles/#/) 4. EMOLab, local software for music perception an music theory [5] (fig. 7). (http://www.uv.es/perezgil) 5. Flash modules, for practice with discrimination of music events (fig. 6). 6. Several Youtube videos for music theory.

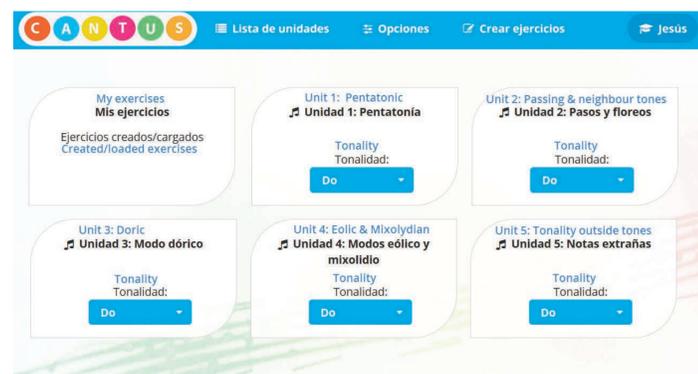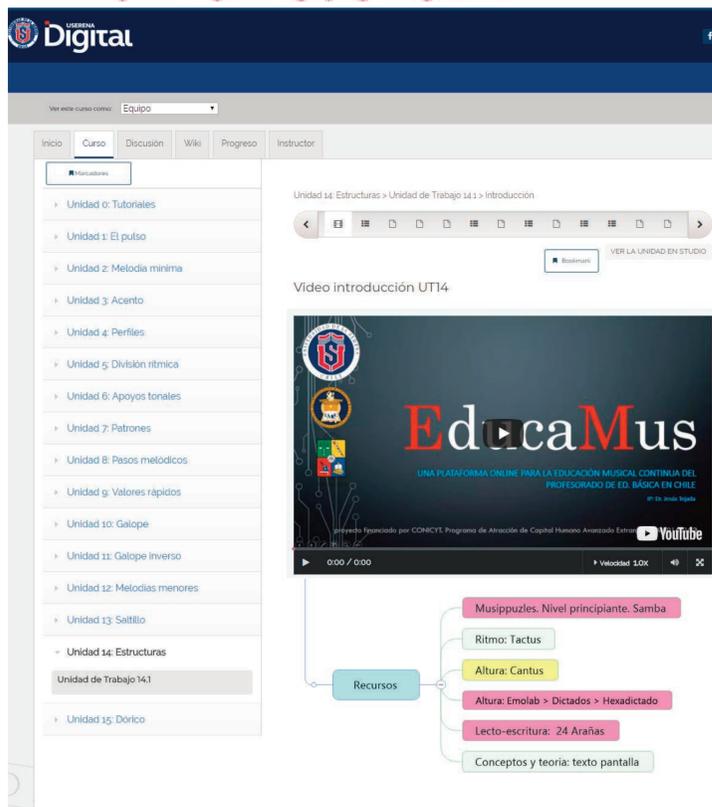**Fig. 3** Cantus' main interface (English translation in blue)

Fig. 4 Musipuzzle's main interface

4. Outcomes

This research is still a work in progress. At this moment, we are redesigning the course according the results of the usability test. This course is scheduled to start in few weeks, lasting online for some months in a blended learning basis together with complementary face-to-face seminars. At the end of the course, it is planned to carry out a users' evaluation and disseminate the results thru specialized journals.
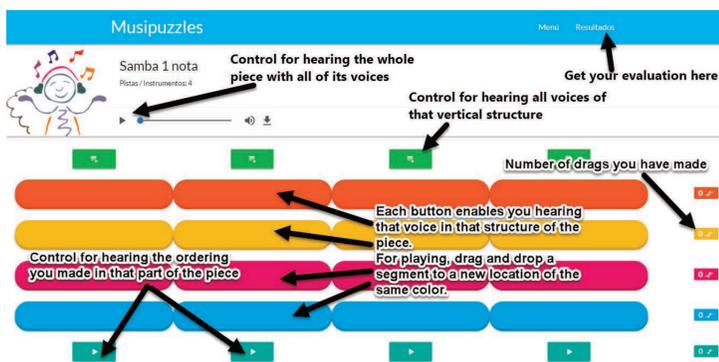

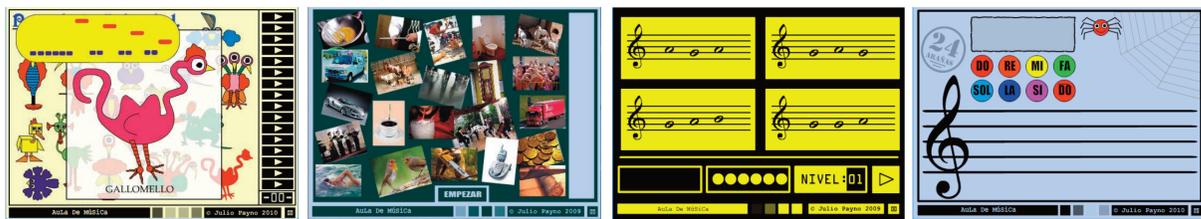**Fig. 5** Performance activity in Tactus using alternative notation

Fig. 6 Some Flash modules devoted to aural discrimination and music reading and writing, by Julio Payno
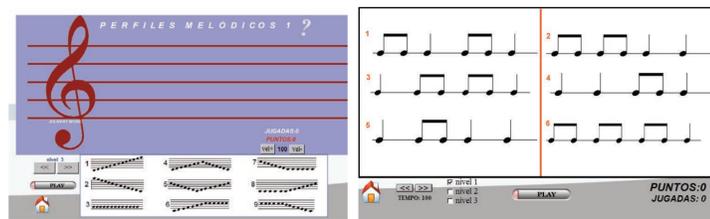

Fig. 7 Recognition of aural melodic and annotated rhythm patterns in EMOLab, by M. Pérez Gil.

References

[1] Ministry of Education of Chile (2015). *Base de Datos, Docentes y Cargos, 2015.* Unidad de Estadísticas, Centro de Estudios, División de Planificación y Presupuesto, Ministry of Education of Chile. Retrieved from https://goo.gl/JhU9mT
[2] Peffers, K., Tuunanen, T., Rothenberger, M. & Chatterjee, S. (2007). A Design Science Research Methodology for Information Systems Research. *Journal of Management Information Systems, 24,* 3, 45–77.
[3] Pérez-Gil, M., Tejada, J., Morant, R. & Pérez, A. (2016). Cantus. Construction and evaluation of a software for real-time vocal music training and musical intonation assessment for music education. *Journal of Music, Technology and Education 9,* 2, 125-144
[4] Tejada, J., Pérez-Gil, M. & Pérez, R. (2011) Tactus: Didactic Design and Implementation of a Pedagogical Sound Based Rhythm-Training Computer Program. *Journal of Music, Technology and Education, 3,* 2+3, 155–165.
[5] Tejada, J. & Pérez-Gil, M. (2016). Diseño y evaluación de un programa informático para la educación musical de maestros no especialistas. El caso de EMOLab. *Revista Electrónica Complutense de Investigación en Educación Musical, 13.* 22-49.