

EducaMus Teachers

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

Poster presented at International Music and Sciences Symposium, Istanbul, april 17-19, 2019.

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 teachers have formal music instruction [1]. The rest of the teachers have to teach music at the Primary Education level, but lack both specialized music and music didactic competencies. Formation to achieve these competencies should occur during their pre-service teacher training in order to successfully offer music classes at the level of Primary Education. In spite of this need, most 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 make up for 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 embedded and associated software that provides real-time music practice and assessment.

2. Implementation

The Music Training for General Teachers course follows 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).

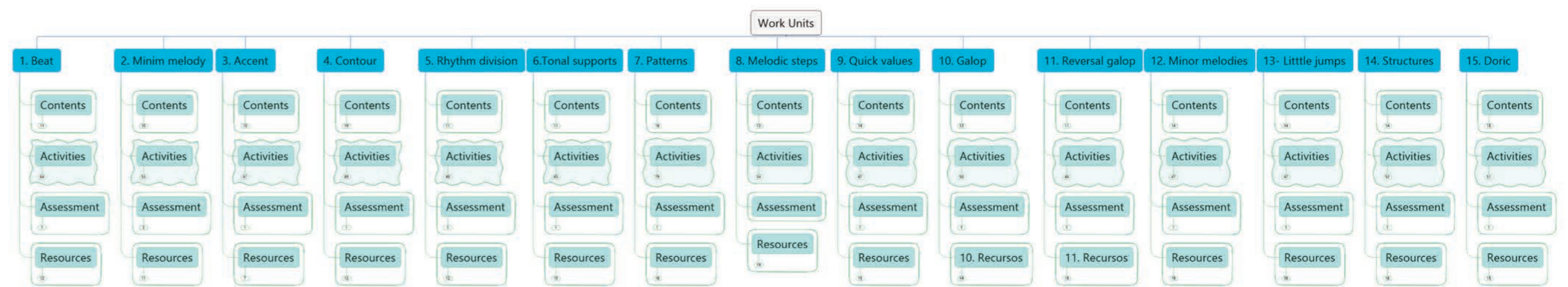


Fig. 1 Didactic structure of Music Training for General Teachers Course

3. Associated software

The users' activities are assessed in real-time by the computer. This proves beneficial for the students, who get an immediate evaluation of their performance, and for music teachers, as well, because assessment is one of the most time-consuming and complicated tasks in music-education. The EducaMus 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**, software for rhythm training and evaluation that runs in the user's machine (<http://www.uv.es/perezgil>) [4] (fig. 4).
3. **Musipuzzles**, experimental online software for the ordering of structural parts of a multipart music piece in real time (fig. 5).
4. **EMOLab**, local software for music perception and music theory [5] (fig. 7). (<http://www.uv.es/perezgil>)
5. **Flash modules**, for practice with discrimination of music events (fig. 6).
6. **Youtube videos** for music theory.



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

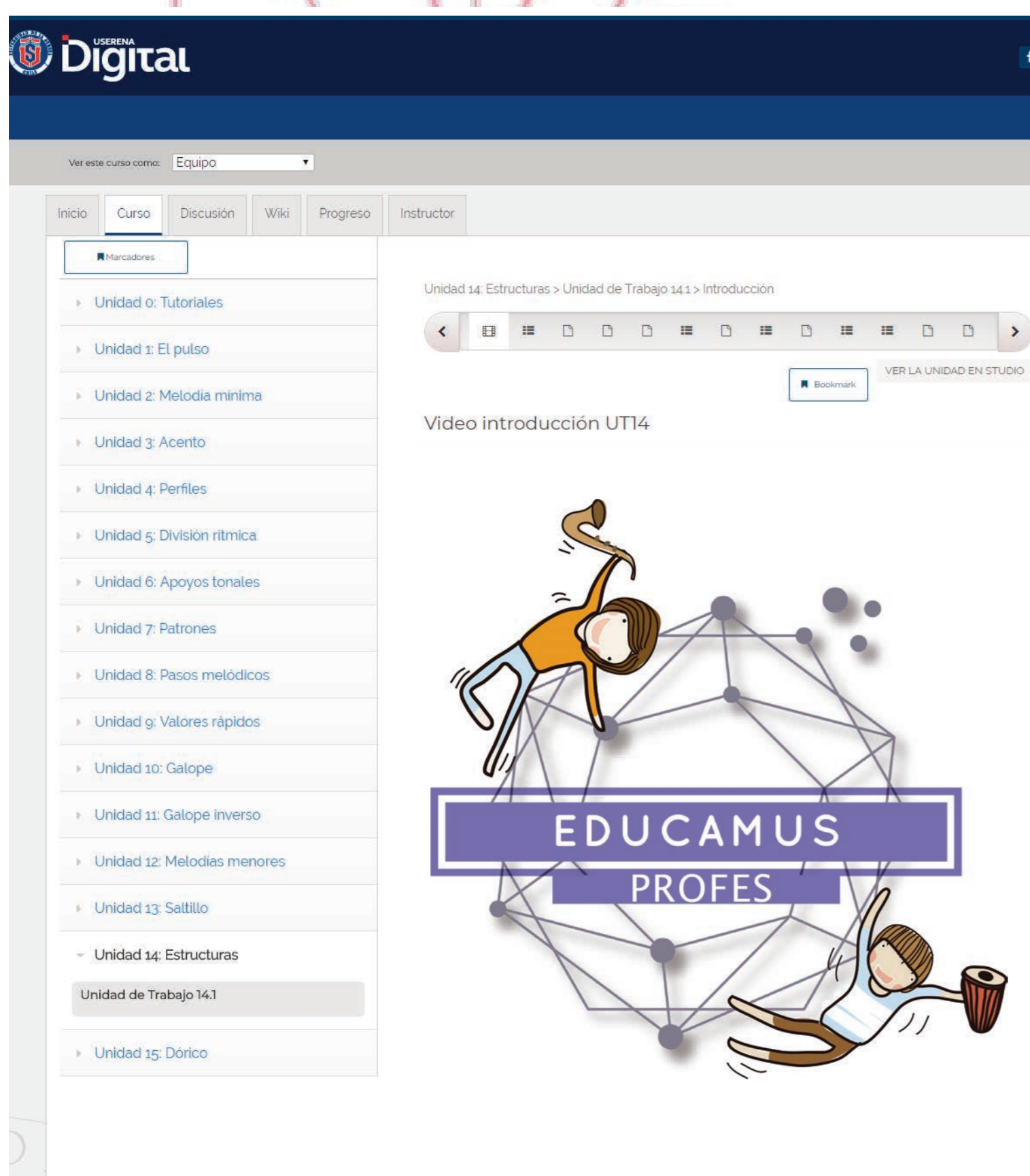


Fig. 2 Main interface of EducaMus Teachers Course. Navigation of course at left. Navigation bar of activities above. Videos and instructions at center.

4. Outcomes

The research group continues to redesign the course according to the results of the usability test. A pilot of this course have started in Chile at the Escuela de Música Jorge Peña Hen with general teachers. It will continue online for some months in a blended learning basis, that is way, with complementary face-to-face seminars. At the end of the course, we plan to carry out a users' evaluation and disseminate the results thru specialized journals.



Fig. 4 Performance activity in Tactus using alternative notation. Users hear the rhythm exercise and should imitate with the computer keyboard. User can see representations as alternative or Western notation.

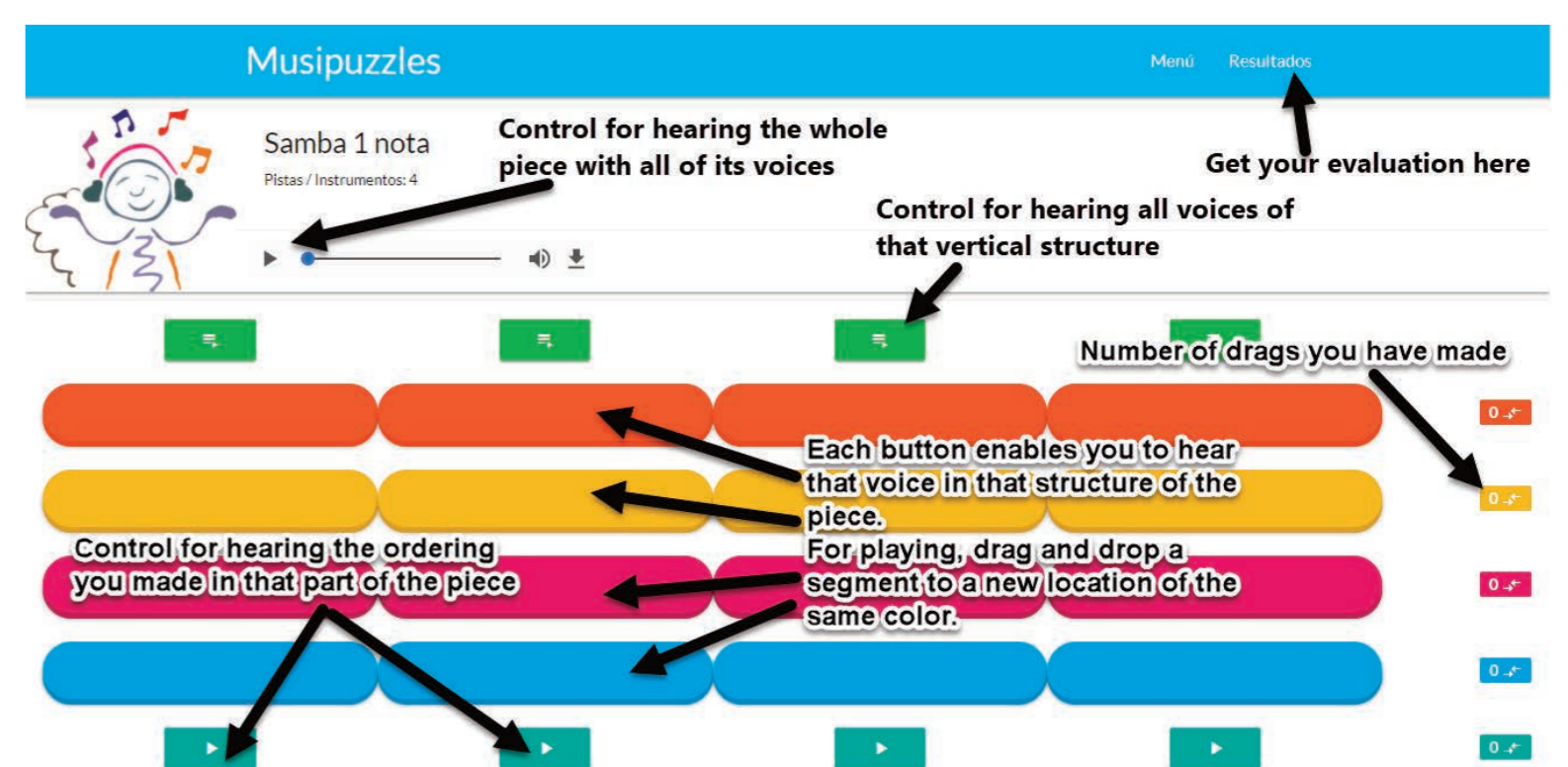


Fig. 5 Musipuzzle's main interface. User can arrange the screen elements in order to replicate the model proposed, usually a short piece in one of four genres (classical, movies, folk, pop).



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

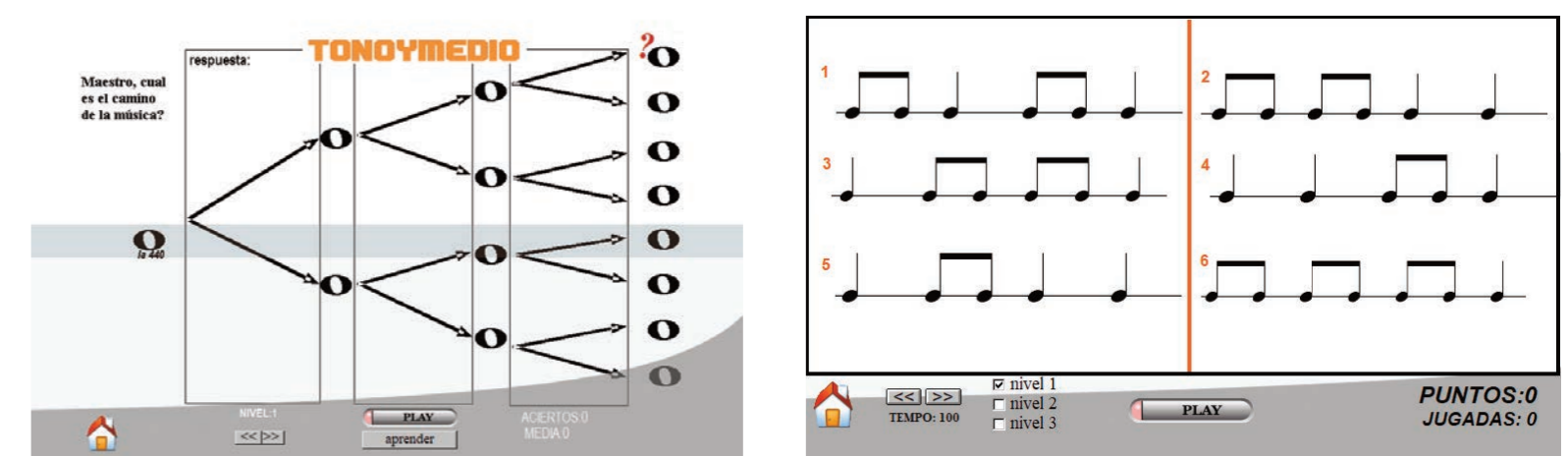


Fig. 7 Recognition of aural melodic and annotated rhythm patterns in EMOLab, by Manuel Pérez.

Acknowledgments

This work has been financed by CONICYT (Chilean Sciences & Technology National Commission) through its Advanced Human-Capital Attraction Program (folio: PAI80160102). Tactus software was financed by the Spanish Ministry of Science and Innovation through its Plan Nacional i+d+i (code: SEJ2007/60405EDU). Cantus software was financed by the Valencian Federation of Musical Societies (FSMCV) by means of a contract-program. Thanks to Campus Digital (University of La Serena, Chile) and REUNA (Chilean National University Network) for technical support. Thanks to Manuel Pérez-Gil and Julio Payno for their collaboration in the implementation. Finally, thanks to Claudio Merino, Marcela Oyanedel and Tania Ibáñez (U. Chile).

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 Pedagogically 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.