

Using IMUTUS

What the Students had to say about IMUTUS

> The students' own comments on IMUTUS:

"This is good because I have learned a lot more."

"It has been fun. I have had to think a little on my own... There has not either been any particular inflection to the comments so I can interpret them by myself a little."

"I think that the instructions sometimes are bad. But they are good because you can improve your performance."

What the Teachers had to Say about IMUTUS:

> What was your impression when you first heard about IMUTUS?

"Is it possible to learn music from a computer?"

"I don't think that a computer can replace a teacher, but I am curious".

"I was sceptical because of my inexperience, and a bit worried that the computer should replace me as a teacher."

> Explain your experience of IMUTUS now, after the three weeks of validation.

"I am positively overwhelmed that students found IMUTUS so funny. It exceeded my expectations."

"I was sceptical but now I am curious. I think the software is under way..."

"My sceptical thoughts disappeared..."

> Do you think that your students which used IMUTUS improved compared to the others?

"The improvement was stable across the three weeks and there is a persistent effect in the students' musical skill, even now a month later."

"The students have been much more secure in expressing themselves on the recorder."



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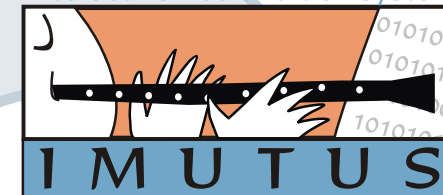


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Interactive Music Tuition System



Interactive music tuition multimedia system for training users on traditional instruments



Information Society
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<http://www.exodus.gr/imutus>

Description

IMUTUS stands for Interactive Music Tuition System. It is a research project working on the field of electronic music education, aiming at the development of an open platform for training students on musical instruments, focusing on the recorder. The recorder was chosen as the target instrument because it is a traditional instrument widely taught in European schools.



IMUTUS provides an attractive, engaging and easy-to-use environment equipped with advanced technological tools to increase the effectiveness of music practising. Lessons of theory are combined with challenging practising sessions and fun games to create a complete learning setting, allowing the students to proceed at their own pace.

The IMUTUS practising environment is technologically and pedagogically innovative. IMUTUS can record, recognise, analyse and evaluate student performances. It identifies student errors, it prioritises them and selects the most significant to display, along with high-level comprehensive suggestions on how to correct them.



IMUTUS is clearly not aimed to replace traditional forms of teaching; in the contrary, it will be most successful when used as a supplement to traditional music lessons with a teacher. IMUTUS makes practising at home more effective and enjoyable. Knowledge and experience from music teachers have been exploited at all stages of the project, from design and development to the final validation.



Technologies used in IMUTUS



IMUTUS comprises of the following technologically innovative components and tools that promote its educational objectives

- > **Audio recognition** techniques tailored to the recorder, which can be extended to other monophonic instruments.
- > **Score matching and following**, that allows IMUTUS to identify and dynamically track the student while playing, also providing automatic page-turning.
- > **Objective performance evaluation** identifying mistakes in the performance, ranking the prominence of the mistakes, and providing guidelines and practice tips to correct them.



- > **Enhanced score viewer** that displays musical scores overlaid by teacher comments and annotations.
- > Multilingual **music tuition courseware** including theory presentations, musical pieces for practising and games, as well as a **content authoring module** addressed to tutors for enriching the available on-line content.
- > Enhanced **optical music recognition** for converting musical scores to electronic form.
- > **Simple score editing** for the pupils to support games and other learning activities.
- > **Virtual reality** to dynamically create and present 3D animations of finger movements.
- > An attractive **multilingual front-end environment**.
- > A **distance learning platform** enabling students to contact teachers, track their progress and download educational material

Field trials in Sweden and Italy

IMUTUS has been tested and validated in field trials in Sweden and Italy, clearly demonstrating a very strong potential. Students between 9 and 14 years old used IMUTUS at home and at school.

IMUTUS has managed to bring over initial doubts of the teachers. At the beginning teachers tended to be sceptical about the value of such a system and its role in the music tuition process. After a three-week period of students using IMUTUS, the teachers' impressions completely turned around.



They report that their "sceptical thoughts disappeared", that they have been "positively overwhelmed", and that IMUTUS "exceeded their expectations". Moreover, they believe that their students experienced working with IMUTUS to be "very funny", "pretty easy", and "amusing". Teachers also believe that IMUTUS has helped students to improve, as do most students themselves. Teachers report a "stable improvement" across the testing period and "a persistent effect in the students' musical skill". Moreover, students appeared to be "more secure in expressing themselves on the recorder".

Objective comparisons of performances by students that used IMUTUS to those that did not, clearly confirm the positive effect of IMUTUS in helping students improve their musical skills.

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