Starlight

Overview

Starlight is a platform for the development of interactive educational software that is accessible by the blind and people with low vision. The platform supports the creation of **dual educational electronic textbooks**, which can be concurrently accessible by visually impaired and sighted persons. The electronic educational textbooks that can be developed with Starlight are much more than simple books in digital format, since they offer to the students and the educators a set of interactive educational tools.

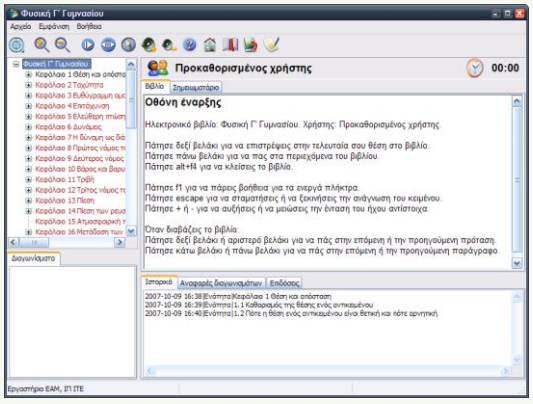
The Starlight platform comprises two sub-systems: Starlight Writer and Starlight Reader.

Starlight Writer: Writing Software

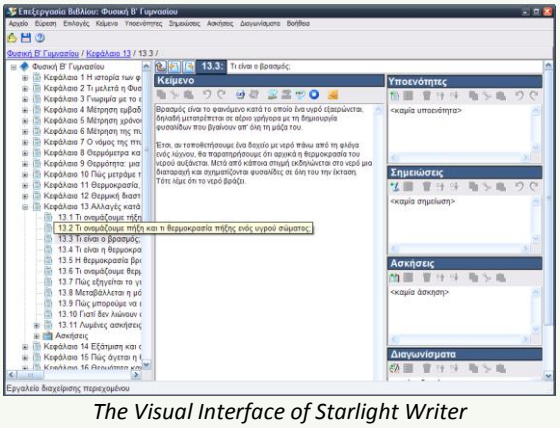
Starlight Writer allows creating, editing and storing electronic educational textbooks. It supports writing and structuring educational content in chapters, subchapters, paragraphs, etc. At the end of each section, exercises using an automated correction mechanism can be added for student to practice. The supported exercise types are: (a) multiple choice; (b) true / false; (c) fill in the gap; and (d) open-ended questions. In addition, the textbook can include exams written for specific material, a specific chapter, or for the entire textbook and can include any of the above mentioned exercise types.

Starlight Reader

Starlight Reader supports the interaction with electronic educational textbooks that have been developed using Starlight Writer. It is specifically designed for non-visual interaction and can be fully used without the need of a screen or a mouse. In this case, interaction is accomplished through synthetic speech, the Braille display and the keyboard.



The Visual Interface of Starlight Reader



The Visual Interface of Starlight Writer

Target Applications

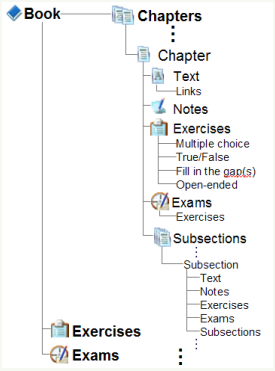
The Starlight platform is suitable for the development of educational software addressing visually impaired and blind persons.

Description

The navigation system in Starlight Reader is very easy and fast and can take place at any level (chapter, section, paragraph, sentence, word, letter), as well as to the navigation history. In order to differentiate between the educational content and the software interface content, two different narrating voices are used one male and one female. Furthermore, special sound effects are employed as a means to provide feedback when a user action has been completed successfully (e.g., following a link, skipping to a next section) and also to annotate parts of the text that have links or notes.

Apart from the non-visual interaction, Starlight Reader also offers a visual interface that can be used through the mouse which allows a third party (e.g.: educator, parent, etc.) to have a view at the navigation history of the student, his/her performance at exams, and to view or even change the student's position in the content. The visual interface can also be used by low-vision students as it offers content magnification facilities.

All the software products developed using Starlight include the text-to-speech technology called "Ekfonitis+" which was developed by the Institute for Language and Speech Processing - ATHENA.



Starlight book structure

Starlight books

Additional Information

The design of the platform, as well as the usability and accessibility evaluation, were conducted in cooperation with the Panhellenic Association of the Blind and specialized educators.

The Starlight platform has already been used for the development of eight educational products for visually-impaired students of Greek Primary and Secondary schools. The educational content of these products is based on the educational textbooks of Savalas Publications and is fully compatible with the official syllabus of Greek public schools and the educational books of the Greek Educational Books Publishing Organization.

Starlight website

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