Development of a terminals system for Biochemist education

Rodrigues, R. S.; Fontes, W.; Castro, M. S.

Universidade de Brasília

Computers became a common learning tool since basic education until the post-graduation. Professors have used presentations, sites and other multimedia resources to modify and improve classes. Biochemistry presents a large amount of dynamic processes and the learning journey is benefited by elaborated drawings and colored animations as well. Some interaction with the biochemical processes assists pupils to perceive the functioning of varied cycles and its relations. Student participation in the pedagogical process, such as social constructionism and distance learning are also realities in Biochemistry learning.

The present work proposes the establishment of a free software based classroom system. The employment of a CD-started system brings freedom, independent of the operating system currently installed and not modifying it. The system adopted was GNU/Linux. With its tools, it was possible to create a full system with all the required programs for simulated lessons, interactive navigation, illustrations and presentations, included as Biochemistry didactic material. Even old computers can be used. The implementation of remote terminal system enables very slow equipments to become useful accessing a process share with another better equipment.

Free software packages were included to allow students to open and edit text, presentations, worksheets, images and PDF documents. A program was especially developed aiming at the professor control over the various computers improving the interaction among the classroom within the computational environment.

The above described system was inserted in a single CD. It can be used within MS-Windows, Mac-OS or GNU/Linux operating systems, as a source of Biochemistry didactic material, or be executed as a "boot disk" to replace any operating system. This technique is called LIVE-CD, where the system is loaded directly of a removable media. The original operational system installed will not be affected until requested by the user. Also the already existing archives can be accessed by the system.

The server terminal possibility is in agreement with the system concept: the freedom of its implementation with any kind of computer, since very limited hardware can still be used as terminals. As perspectives for the near future, the live-CD system will be able to run services such as web, database and PHP, enabling even more student participation in the learning process.