

Abstract

This diploma thesis is focused on topics of and respiratory chain and their processing as educational animations for secondary schools. In the theoretical part of the diploma thesis, supporting terms are defined (visualisations, interdisciplinary relations, animations). Next, themes are included in educational field and thematic unit in RVP G. Two analyses of the topic of respiratory chain are mentioned and evaluated in this part. Firstly, there is an analysis focused on the most used chemical and biological textbooks. The second one is focused on available online animations. For research purpose of the diploma thesis quantitative method was used – a questionnaire survey. Results of this survey are listed in the practical part. Practical part presents educational materials specified for support of education topics of respiration and respiratory chain. Stress on illustrative nature and interdisciplinarity is laid in these materials. The principal materials are educational animations which were made in program Adobe Flash Professional CS6. Study text was also written to these animations. Created educational animations give a complex view on respiratory process. These materials can be used in biology and chemistry subjects or in scientific courses. Animations include two tests giving feedback to users. The practical part contains a methodical manual which gives users basic characteristic and information about manipulation with educational animations.