T5_28 AN ONLINE MULTIMEDIA-BASED COURSE ON BASIC ACOUSTICS: DESCRIPTION AND EVALUATION

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A course on Basic Acoustics has been implemented as an Internet site with multimedia resources such as Adobe Flash animations, sound, video clips and external physlets [1]. Multimedia resources are particularly suitable for a course on acoustics, due to the special role played by sound. Since the autumn of 2006, the course has been the basis for a yearly free-elective subject for distance learning. It includes theory, problem solving and multiple-choice questions, in addition to collaborative work and "laboratory practicals" using one's own PC, with headphones and microphone. The main learning goals are: to describe sound mathematically as an oscillatory phenomenon and as a wave, to solve related situations numerically, to identify the sound features and the respective parameters, to know the theoretical background of the performances of musical instruments, and to acquire the basic concepts of architectural acoustics and digital sound processing. The constructivistic model of learning within the EHEA framework was taken as the most suitable approach, as occurred with a previous subject on Basic Optics [2], incorporating, in addition, research results on multimedia material [3, 4]. Every year, students are asked to assess the course features, and their overall evaluation has been positive, especially as regards the embedded multimedia resources. Furthermore, many comments taken from their evaluations and assignments have helped to correct deficiencies and to improve the course. Main References: 1. http://baldufa.upc.es/arcadi/index.htm 2. Novell, M., Bohigas, X., Jaén, X., "Basic Optics: a partially web-based course. Description of the course and evaluation of the experience", Innovations in Education and Teaching International (accepted for publishing). 3. Hennessy, S., Wishart, J., Whitelock, D., Deaney, R., Brawn, R., la Velle, L., McFarlane, A., Ruthven, K., Winterbottom, M. (2007), "Pedagogical approaches for technology-integrated science teaching", Computers & Education, 48, p. 137 ff. 4. Trindade, J., Fiolhais, C., Almeida, L. (2002), "Science learning in virtual environments: a descriptive study", British Journal of Educational Technology, 33, p. 471 ff