The integration of environmental care, health and safety in Flemish higher education laboratories
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Since the start of the United Nations Decade of Education for Sustainable Development (UN DESD) in 2005, UNESCO (2005) is aiming at ‘changing the approach to education so that it integrates the principles, values and practices of sustainable development’. The general principles of Health, Safety and Environment (HSE) are among the aspects of sustainable development (SD) that deserve attention through formal education. Although these principles should be imparted to students of all educational levels (Calder and Clugston, 2005) – from kindergarten to higher education – this is often not the case. Nevertheless, different authors highlight the necessity of the incorporation in curricula of pollution prevention and waste management (e.g. Boon, 1997; EPA, 2006, Izzo, 2000; Mason et al., 2003; Parkhurst, 2000; Sales et al., 2006), or health and safety issues (e.g. Hill, 2007; Karapantsios et al., 2008; Nelson, 1999; Peñas et al., 2006; Perrin and Laurent, 2008; Senkbeil, 2004). For example, Sales et al. (2006) stress – specifically for the treatment of hazardous wastes in chemistry laboratories – that education and training programmes are primordial for achieving a thorough management of environmental issues.

In Flanders, the northern part of Belgium, laboratory lessons are part of various courses and degrees in higher education, such as in exact sciences (e.g. chemistry, biology), engineering (electronic engineering, car mechanics…) and medical sciences (e.g. physician or nursing) (Cappuyns & Ceulemans, 2008). The current situation of HSE-integration in Flemish higher education laboratories was assessed in 2008 through a study executed by the authors of this paper. Literature review, screening and analysis of all relevant Flemish higher education study programmes and course overviews (provided by the European Credit Transfer and Accumulation System (ECTS) files) and qualitative semi-structured interviewing of a sample of university stakeholders provided an overview of the current state of HSE integration in Flemish higher education laboratories, as well as some recommendations and examples of approaches to introduce or enhance HSE issues in higher education laboratory classes. The importance of student’s attitudes towards HSE was also highlighted.

Since chemistry laboratory classes form a distinct part of the Flemish educational laboratories studied, the results can be valuable for enhancing HSE integration specifically in chemistry laboratories. Moreover, the results and recommendations can be applicable for higher education institutions in other countries urging to strengthen their efforts towards HSE integration in educational (chemistry) laboratories.

References


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