Interlaboratory virtual collaborative experiences in chemistry labs

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In the context of the new teaching-learning process introduced by the Bologna Education plan, collaborative learning in Higher Education has become as an interesting tool to encourage active involvement of students. Moreover, this innovative methodology allows efficiently developing a relevant number of transversal competencies expected in higher education graduates such as communication, organization and management and critical thinking skills. Surprisingly, one of the most important challenges of collaborative work is achieving a real exchange of ideas, knowledge, and practices among students. The teacher’s role in this kind of approach is simply as facilitator, nonetheless special attention must be paid to avoid the implementation of “divide and conquer” strategies within working groups, in which students tend to split the work into independent pieces that only combine in the end, without truly working together. COVID time has additionally facilitated the implementation of Information and Communications Technologies (ICTs) as well as virtual environments, making easier students’ collaboration beyond their classroom. This is true not only for theoretical contents but also for the practical ones, which are certainly important in some experimental Degrees. Herein, we propose an interlaboratory virtual collaborative experience designed among different academic institutions, inside and outside Spain, which can be applied to basic chemistry knowledge required in different Higher Education Degrees such as Chemistry, Pharmacy or Biochemistry. The aim of this proposal is to reinforce chemical knowledge by practicing through an unconventional approach though. Students are expected to properly perform the experiments, but they should also interact with other working groups with different backgrounds, sharing knowledge and practical tips about correct procedures and technical issues. Thereby, besides chemical experiments, our proposal include interdisciplinary content on safety rules and good laboratory practices. All together will introduce students into an engaging collaborative learning environment that mimics a common practice within the academic and industrial chemical/pharmaceutical environment, as well as research settings, which will certainly increase the motivation, confidence and develop long-term laboratory skills on our students.