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They teach it more successfully

Jose Reyes Ruiz-Gallardo (1), Arturo Valdés (2), and Santiago Castaño (3)

(1) Science Teaching Dept. Faculty of Education. University of Castilla-La Mancha, Albacete, Spain (josereyes.ruiz@uclm.es, +34 967599200), (2) Environmental Sci. Dept. Faculty of Education. University of Castilla-La Mancha, Albacete, Spain (arturo.valdes@uclm.es, +34 967599200), (3) IDR, REMOTE SENSING AND GIS, ALBACETE, Spain (santiago.castano@uclm.es, +34 967599200)

Science education has been involved in a crisis due to the way in which teachers teach future teachers (McDermott, 1990; Bernal, 2005). During generations, students have been learning sciences as something already done, based on memorizing a number of contents or formulas that always give a correct answer (CUSE, 1997). Thus, Lederman y Abd-El-Khalick (1998) considered that is difficult that future teachers feel Science as something tempting and based on empiricism, if they only learn contents. To learn Science it is required to think, to do and to talk (Pujol, 2003).

In this study an experience where students are teachers is shown. 160 students from the Faculty of Education have participated. They had to make, in cooperative groups of four, several activities to eliminate typical Science conceptual mistakes in children (such as minerals and rocks as the same thing, or the proportion of the Earth flattened out at the poles). Some peer groups have to develop activities as kids, question teachers and extract activity strengths and weakness from a kid point of view. A condition of these activities is that they are not mere teacher's demonstrations. Kids have to discover by themselves the conceptual mistake throughout the proposed activity. Afterwards, teacher's groups pass to occupy children's role and vice-versa with new activities from other conceptual mistakes.

The experience was tested from two different points of view: a) student's perception of the experience, and b) final exam outcomes. Results show that 95% of the students prefer to be explained by their peers than by the lecturer. As outcomes, 94% of the students that experienced with their peers these activities and explanations, answer successfully the exam questions, while in former experiences where lecturer explain the same concepts, this value decreased up to 64%.

These results coincide with other experiences concluding that students have more success than the teacher to make understand concepts to their peers (Johnson et al, 1981, Cuseo, 1996, Shachar and Fischer, 2004). It is also related with the increasing of self-esteem (Lawrence, 1996), achieved in environments rich in challenges and low in threat (Abbot and Moylett, 1999).

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