

## 5 - Teaching-Learning Sequences as Innovations for Science Teaching and Learning | Empirical

### SP - (16253) - ILLUSTRATING THE BIODIVERSITY

María Napal Fraile (Spain)<sup>1</sup>; Maria Isabel Zudaire Ripa (Spain)<sup>1</sup>; Irantzu Uriz Doray (Spain)<sup>1</sup>

1 - Dpt. Ciencias. Universidad Pública de Navarra.

#### Short Abstract

*The natural environment is well represented in the school science standards and, however, Primary School students learn little about biodiversity. For this reason, we have designed and enacted a proposal to illustrate biodiversity (specifically arthropods), focused on the development of basic scientific skills (observation, communication, description, measurement), and based on the regulation (self- and peer-to-peer) of learning. The experience was carried out with 210 schoolchildren (3rd-4th grade). The proposal was developed during four sessions: (1) free drawing of an animal preserved in methacrylate, (2) in group, give respectful, accurate and solution focused instructions to improve one of the drawings as a group, in an iterative cycle; (3) further improvement to show links between structure and function; (4 - evaluation) describe a mystery animal and infer its diet and locomotion. All the groups made a huge progression, ending with realistic, detailed drawings. In general terms, feedback was constructive and useful, although it depended on the previous familiarity of students with cooperative work. As for the evaluation activity, the students produced detailed descriptions, including strategies such as adjectives referred to size, appearance, comparisons to other animals and quantification of traits. On top of that, they were also able to link in variable degrees structure with function: up to 46% of the students made explicit links of anatomical features with locomotion, and 61% with diet. Students enjoyed the proposal, and 75-90% reported having improved their abilities to draw as a scientist, to give adequate feedback, to have learnt about invertebrates and being interested in learning more.*