

Science and disabilities

In response to the questions raised by the Disability Council on the possibility of extending the educative method that *La main à la pâte* promotes to students with disabilities enrolled in regular schools, the [Académie des sciences](#), firstly through its [Delegation for Education and Training \(DEF\)](#), and the [INS HEA](#) (National Higher Institute for Training and Research in Education for Young People with Disabilities and Adapted Teaching Methods) began to reflect together on this issue in November 2009 and started a project using the different schooling contexts of pupils with disabilities as its basis.

The primary objective was to see if inquiry-based science education could be of use in the education of these young people and if so, to reflect on the conditions that would allow the approach to be optimized, such as the resources to be engaged, adjustments to be made, etc. An initial experimentation phase took place during the 2010-2011 school year, with pupils enrolled in special needs classes (seven for mental disabilities and four for physical disabilities). A wide variety of data was gathered and analyzed, using the initial and final questionnaires given to the teachers and a study day where all actors were present.

In light of the results of this first phase and the satisfaction of all teachers involved in the project, the project continued during the 2011-2012 school year with about fifteen special needs teachers, focusing on two main aspects: writing up experiments (drawings, graphs, text) and the procedures for the beginning and end of the sessions, and the possible methods for formative assessment. Using the protocol established the previous year, each teacher testing the approach is provided with a teaching sequence (around 5 lessons) and scientific and teaching assistance. The teacher also has access to a digital platform for the project and attends a study day with all other actors in the spring.

Since 2012, the Fondation *La main à la pâte* has continued this project with the INS HEA, maintaining the same type of protocol: sequences prepared by the Foundation and INS HEA are proposed, teaching and scientific assistance is provided, and initial and final interviews are carried out with a study day at the end of the year. In 2013-2014, 17 teachers working in different structures for children with disabilities will implement one of the eleven sequences prepared by the INS HEA team and *La main à la pâte*. Certain sequences which were already proposed in previous years were reviewed and improved on by taking into account teachers remarks; others were entirely rewritten and new sequences were added. This year the team proposes continuing with the reflection on the role of error in building the learning processes of students with disabilities and on the possible consequences of science teaching on changing society's perception and ensuring greater inclusion of these pupils. Common programs with ordinary classes are therefore recommended.

Every year, a study day brings together the teachers involved, trainers and scientists. In 2014, this took place on 23rd May.

The *HandiScitoyen* project organized by the Ile-de-France region resulted notably in the Union of Physics and Chemistry Teachers agreeing to a special issue on science and disability for the first quarter of 2015.

The sequences that had been proposed to French teachers were translated into Spanish by Mexican partners of the Foundation, a result of the international workshop that took place in December 2013, as well as a trial run of this teaching method in the different states of Mexico.

The work done in France is detailed in the following article, published in July 2018: [Science and investigation: Teaching for sustainable learning for students with disabilities too](#)