

THE SCIENTIFIC METHOD: LEARNING BY DOING

ONLINE COURSE IN SCIENTIFIC
METHODS FORMS A BRIDGE
BETWEEN LEARNING AND APPLYING

Wageningen University is developing a modular online course in which students not only learn the scientific method, but apply it directly. This better prepares them to conducting independent research for their thesis.

What does the project involve?

There is often a disconnect between education in scientific methods and its use in practice. As a result, students find it difficult to apply the methods later on. Wageningen University is developing a modular online course that aims to bridge the gap between learning and application. The course consists of three modules that can also be used independently:

This project prepares students more thoroughly for independent research for their BSc- or MSc-thesis. This should result in a higher quality of theses and less delay. In addition, the project should increase the effectiveness of education, for example by freeing up teachers' time through blended learning, providing students with flexibility through just-in-time teaching and by reusing modules.

“It is only when students apply the scientific method themselves – from hypothesis to conclusion and back again – that they understand why all those steps are necessary.”

- Arnold Moene

- a general introduction to the scientific method: what steps do scientists take to acquire new knowledge, and why are these steps so essential?
- a domain-specific module that guides students in the use of the scientific method in their own research in the field of environmental sciences.
- a virtual laboratory for researching processes at the interface of atmosphere, vegetation and soil. This lab is based on a model with which Wageningen University has already gained much offline experience both in research and education.

How can other institutions benefit from this project?

The course concept can be transferred to other subject areas and can therefore be used for all study programmes in which students must learn scientific methods. The course and the underlying materials are made available under a Creative Commons License (CC-BY-NC), partly through GitHub (the virtual lab including supporting material) and partly through the Wageningen University website (the other teaching materials, course structure and documentation). An accompanying manual gives teachers and developers tools to apply the course structure to other subject areas.

About this project

- **Project by:** Wageningen University
- **Period:** 1 September 2017 - 31 December 2018

Want to know more?

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Open and online education incentive scheme

This project is being carried out as part of the 2017 Open and Online Education incentive scheme. SURF and the Ministry of Education, Culture & Science are challenging Dutch higher education institutions to experiment with different types of open and online education.

www.surf.nl/open-and-online-incentive-scheme



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