

## **New funding approaches towards Challenge-driven research**

### Summary

- The research question is whether new funding approaches can contribute to create new scientist behaviours towards Challenge-driven research.
- The authors claim that the dynamics of finding a stable common ground within a multidisciplinary team represent social learning processes and propose to conceptualise them using the Communities of Practice theory.
- New funding approaches attempted by the Idélab sandpit appear to contribute to changing participating scientific communities' expectations and beliefs and create new ways of working on Challenge-driven research.

The article is devoted to answering the question of whether new funding approaches can contribute to create new scientist behaviours towards Challenge-driven research. Particular focus is put in the so-called 'Grand Challenges', a class of problems that society must solve urgently in the twenty-first century if humanity is to survive into the twenty-second century. The authors address this question with reference to a new experimental method, the research sandpit called 'Idélab', implemented in Norway's national science system.

To describe multidisciplinary research collaboration, the authors claim that the dynamics of finding a stable common ground within a multidisciplinary team represent social learning processes and propose to conceptualise them using the Communities of Practice theory. The features of Communities of Practice consist of mutual engagement in core activities such as defining research questions and problem-solving; joint enterprise where all members see themselves as working towards an agreed common goal that could be legitimate across all the disciplinary paradigms represented; and shared repertoires where the meaning and knowledge generated becomes encoded and internalised in the individual researchers' working methods.

It is found that, among the cited projects, those which best realised their multidisciplinary potential were those that developed Communities of Practice and social learning, where the research of individual work packages is valued on an equal footing. The possibility of epistemic equivalence was established from the projects studied. In this regard, the authors were also able to conjecture that what is important is an ex-ante commitment and ex-post recognition of the added value brought by multidisciplinary research through social learning.

The article concludes that the projects most successful in developing epistemic equivalence were those that had activities corresponding to the features of Communities of Practice. It is also found that the new funding approaches attempted by the Idélab sandpit appear to contribute to changing participating scientific communities' expectations and beliefs and create new ways of working on Challenge-driven research. However, some cases show the persistence of problems that arise in attempts to build epistemic equivalence through funding streams.

It is suggested that a possible reason for this is the antisocial view of those disciplines situating themselves at the peripheries of the scientific research communities. Another concern was that multidisciplinary research is supplemental to disciplinary research, evoking feelings that multidisciplinary research does not contribute to core disciplinary questions. Results also suggest

that not just individual researchers and projects need to adapt social learning practices for scientific research, but also funding agencies.

To generate the kind of changes seen here, the study points towards an increased awareness of the potential of multidisciplinary working under conditions of epistemic equivalence and an acknowledgement of this equivalence.

**Reviewed from** “The construction of new scientific norms for solving Grand Challenges” by Kate Maxwell and Paul Benneworth.