

## OER meets OPEN Science.

### ABSTRACT

Openness is the subject of different initiatives in science. From a media-didactic and education scientific perspective, the use of open educational resources (Open Educational Resources, or OER) can be applied to support new opportunities for the design of teaching, teaching and lifelong learning.

The OER movement in the field of teaching and learning has many historical and recent linkages to the idea that openness is a core element of digital research and action practices, such as Open Science (OS), Open Access Publishing (OAP), Open Data and Open Source and similar concepts deal with software development and -usage. While the OER movement is rather related to didactic considerations and concepts it thus differs from the more research-oriented OS movement.

Although the O in all concepts suggests a more intensive and more transparent exchange between the fields, the separation of research and teaching in the context of the 'Open' movement seems to be reproducing. This is expressed by e.g. the parallel and marginally connected structures, and is also shown as an example in the discussion found at conferences and in scholarly associations.

### RESEARCH BACKGROUND AND -QUESTION

With the contribution presented here authors intend to bridge the gap between the two approaches, while also taking into account their duality. In order to gain a better understanding of OER and to illustrate its diversity, a number of project-based approaches to action are presented. Subsequently differences and similarities between OER and Open Science are discussed. In this context, a comprehensive media-didactic, educational-scientific and research methodological perspective is taken.

Projects presented during lightning-talk and poster session will be:

1. The KMK's approach to taking a particular view of the particular school use of OER within a nationwide task force (cf. <https://www.kmk.org> and <http://open-educational-resources.de/tag/kmk/>);
2. The MOOC@TU joint project, which was awarded by the Founders' Association for Science in 2015 and is an open access to engineering studies of the TU9 Group in Germany (cf. <https://mooc.tu9.de/>);
3. The OERinfo project at the University of Potsdam with measures to sensitize and qualify multipliers with the aim of bundling general information, awareness and qualification and to combine them with approaches from the entrepreneurship in the sense of a business model development (cf. <http://uni-potsdam.de/bgelearning/2013/02/07/oer-info-veranstaltung/>);
4. The OERlabs of the Universities of Cologne and Kaiserslautern combine OER with researching learning and, last but not least, with the right to open education and science within both universities (cf. <http://oerlab.de/>).

### METHOD

While research on online technologies is of the driven by either statistical unification authors decided to follow a design based research approach which allows a proper integration of the R&D projects in an rather analytical way. With that approach authors intend further more to allow a linkage to the new idea of so called data-scientists.



As well chosen research methodology aims a social constructivist understanding as coined by Latour & Woolgar (1985) and the presentation given by Köhler et al. (2016) at the preceding Science 2.0 Conference. By that authors tried to investigate the respective practices of openness in science through aforementioned very recent R&D projects.

### OUR MODEL

The following conclusions were drawn from the projects reported:

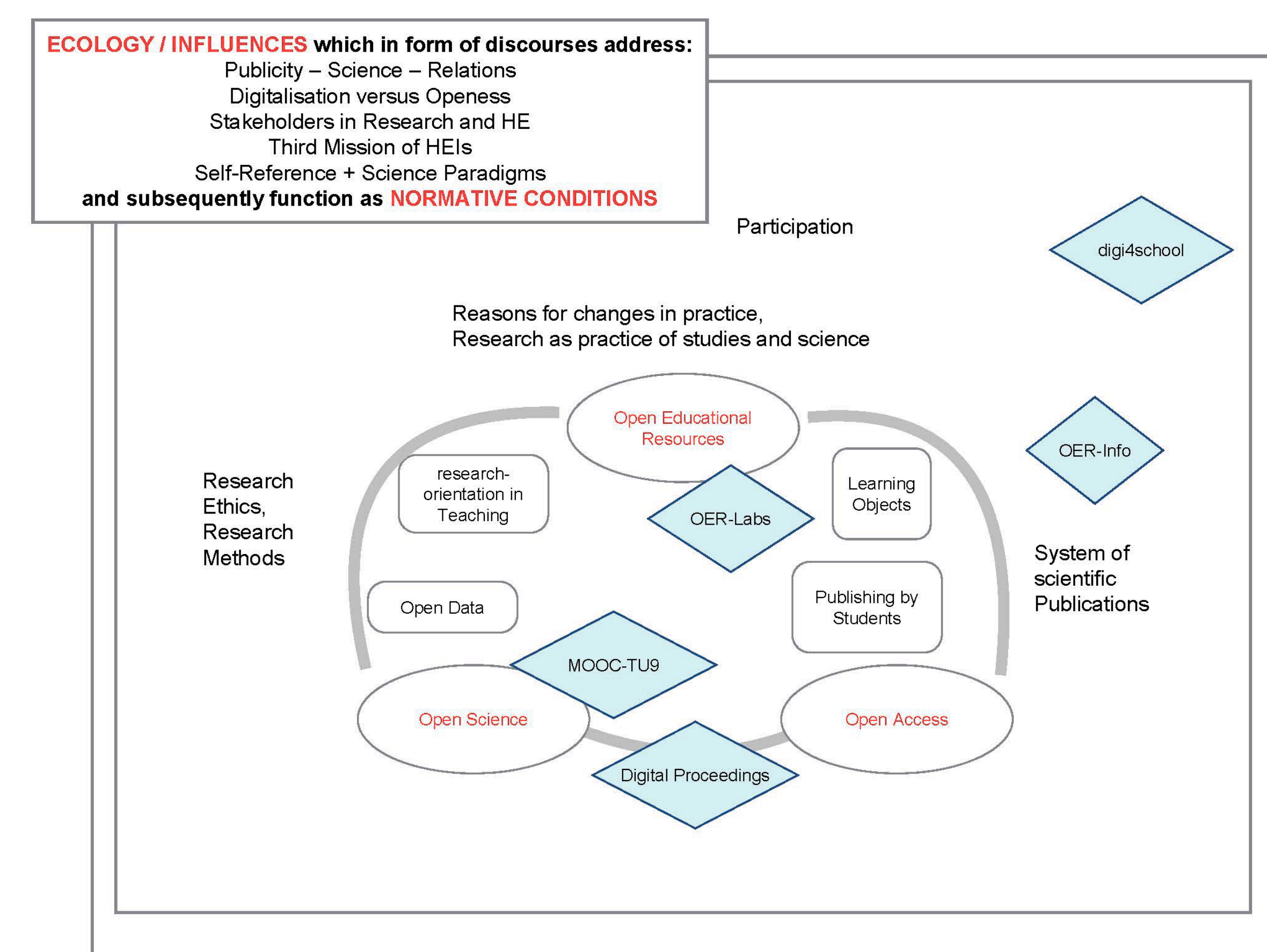


Figure 1: Visualization of interdependencies of OER, OS and OAP

All in all these observations lead to the interpretation that there is neither a clear picture of what a scientist needs to do in order to be successful to meet the opportunities and demands of the openness and as well how respective HEIs should look like to allow a proper transfer into (higher) educational settings.

### OUTLOOK & FURTHER QUESTIONS

The authors' investigation of the interface between three innovative fields OER – OS – OAP showed as well that there are still a number of open issues:

- The function of the national discourse and the positions of German policy stakeholders like the KMK;
- The functional role of the Design Based Research in order to develop overarching research questions jointly;
- What the theoretical dimensions of the interfaces between OER and OAP and OS;
- What are reasons for joint / shared innovative practice of those areas or its absence

### REFERENCES

- Latour, B. & Woolgar, S. (1986). Laboratory Life. The construction of scientific facts. Princeton University Press; Princeton.
- Princeton University Press Köhler, T., Pscheida, D., Scherp, A., Koschtial, C., Felden, C. & Neumann, J. (2016). Moving research methodology toward escience. Paper Presentation Track A: Online Research Methodology, General Online Research 2016; Dresden 02.-04.03.

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