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Education, Research and Open Access in Denmark

PASTEUR4OA PROJECT
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The following is a short presentation of the education system, research and Open Access in Denmark. As regional coordinator for the Nordic region, CRISin (Current Research Information System in Norway) was asked to write a case study of Denmark. This study is based in large on data and statistics provided by the Danish Key Node, Anne Sandfær, and the Danish Ministry of Higher Education and Science.

Summary

As one of the countries to focus on Open Access quite early, Denmark was off to a head start. E.g. the Danish government appointed an Open Access Committee to recommend steps on how to implement the transition to Open Access. But progress has been time-consuming. However, several of the suggested recommendations have already been, or are now being implemented. National policies, joint policies for the Danish Research Councils and tools for monitoring Open Access output are some examples. The main focus of the Danish Open Access effort has been directed towards repositories, depositing and the so called green route.

The research and scholarly communication system of the country

Denmark has a population of 5.6 million, 7.5% of which have a university/college level education of five years or more. There has been a steady increase in output of the Danish research education programs, from over 1200 finished PhDs in 2009 to over 1600 in 2012. These graduate from one of the 8 universities, 7 university colleges or 4 university hospitals in Denmark.

To promote publication in channels with high impact, publications are classified in two levels, level 1 and 2, where the most prestigious journals are classified at level 2. In 2012/2013 9.1% of the 15 500 level 1 journals are listed in DOAJ, and 2% of the level 2 journals. 12.7% of papers published in level 1 journals, and about 10% in total (1 538 papers), were Open Access. There are 40 Danish journals listed in DOAJ

In 2013 Denmark registered about 21 700 scientific publications, 16 300 of which were research papers. This shows a steady annual increase, up from about 17 000 and 12 800 respectively in 2009. The University of Aarhus and the University of Copenhagen alone represent about 57% of total university publishing.

In 2012 R&D expenses for the public sector amounted to about €2.6 billion, while R&D expenses for the private sector was almost €5 billion. In total this amounts to approximately 2.95% of the Danish GNP. In 2012 Danish universities, university colleges and university hospitals had about €2.4 billion in total R&D expenses, of which €1 billion was externally funded. In 2012 the total Danish public R&D effort consisted of almost 22 000 work years, where the higher education institutions and university hospitals represented about 20 000. All in all, around 40 000 people were employed within R&D in 2012.

Denmark has five research councils, the Danish Council for Independent Research, the Danish National Research Foundation, the Danish Council for Strategic Research, the Danish National Advanced Technology Foundation and the Danish Council for Technology and Innovation. These research councils received about €300 million in funding for 2014.

Denmark participated in 1 974 projects in FP7, involving 512 Danish coordinators. The total FP7 funds received were €130 million (by March 1st 2014), up from €53 million in FP6.

Current Open Access policy landscape

In March 2011 a government appointed Open Access Committee issued the second and final iteration of a report which it started working on in 2009. In the report “Recommendations for Implementation of Open Access in Denmark”, the committee lists 16 recommended actions that have served as a basis for the implementation of Open Access to publications and data. In general the recommendations are to establish and promote Open Access policies on all levels. And to support Open Access work through dialog and collaboration, national as well as international. In addition to monitoring and long-term planning. The full report is available in English under “Useful links” at the end of this document.

The Ministry of Higher Education and Science outlined in 2014 its vision in the national strategy for Open Access:

“To create free access for all citizens, researchers and companies to all research articles from Danish research institutions financed by public authorities and/or private foundations.”

The chartered targets are to achieve unimpeded digital access via digital archives by 2017 to 80% of research articles published by Danish research institutions in 2016. By 2022 it should reach 100% of research articles published in 2021.

As a part of the national innovation strategy, the Minister of Higher Education and Science has set up a National Steering Committee for Open Access. The committee’s objective is to implement and further develop the national strategy for implementation of Open Access. The strategy has focus on both green and gold Open Access, but implementation is primarily to take place through the green route to avoid the extra costs often associated with gold Open Access. However the National Steering Committee for Open Access is given the task of examining the opportunity for a long-term and cost-effective transition to gold Open Access.

Following the recommendations of the previously mentioned report, in June 2012 all five Danish research councils implemented a joint Open Access policy in line with the European Commission’s policy. This policy requires researchers receiving funding from any of these councils to provide open web access to their results.

The Danish National Research Database is a central portal for Danish published research, such as scientific articles and PhD theses. It is open for contribution from all institutions of higher education, government research institutions, research councils and other public research institutions. At present universities represent the main bulk, but new data contributors are being added continuously. As of October 2014 it contains over 760 000 records (over 353 000 journal articles), 6.9% of which are Open Access.

Challenges and ongoing developments

The Danish government is focused on preserving and ensuring free access to scientific information, and is it is therefore committed to the EC's recommendation of Open Access to research data as well as publications. It is consulting and collaborating with the Danish universities, research councils and key providers of e-infrastructure.

Conclusions

With the appointment and work of the Open Access Committee, Denmark early put Open Access on the map. This resulted, among other things, in a joint Open Access policy for all five of Denmark's research councils and a strong governmental mandate for Open Access. The focus is mainly on green Open Access and the depositing of research output in repositories.

Useful links

- » **The Danish Ministry of Higher Education and Science - Open Science** (http://ufm.dk/en/research-and-innovation/cooperation-between-research-and-innovation/open-science?set_language=en&cl=en)
- » **Report - Recommendations for Implementation of Open Access in Denmark**
(<http://ufm.dk/en/publications/2011/files-2011/recommendations-for-implementation-of-open-access-in-denmark-final-report-from-the-open-access-committee.pdf>)

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