The Open Science training handbook
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Written by 14 international experts during the FOSTER Book Sprint

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Abstract

In February 2018, FOSTER Plus and TIB organized a book sprint in order to author an Open Science training handbook collaboratively. For one week, we brought together 14 experienced Open Science educators in Hanover to answer a number of questions: What works, what doesn't? How can you make the most of limited resources? With their help, we are creating a handbook that equips future trainers with methods, instructions, exemplary training outlines and inspiration for their own trainings. The handbook provides advocates across the globe with practical know-how to deliver Open Science principles to researchers, support staff, and research administrators. It is a living resource that is online accessible under the terms of CC0 1.0 license. The Open Science community was and will be able to review, comment and add other contributions such as discipline-specific case studies or translations after the book sprint. This is how we ensure the relevance of the handbook for a broad audience.

In our ultimate goal to establish a robust, highly reusable resource on a certain topic in a short matter of time, we utilize two of the most prominent concepts and methods from the area of collaborative book writing: Book sprints and living books. Although the opportunities of both became apparent in the last few years, they still bear challenges, especially when applied to a loosely coupled, international audience of authors. We scrutinize our experiences all along the process, from the book preparation, through facilitating the book sprint itself, up to the reuse and enhancement of the book with different groups in different scenarios. Hereby, we hope to encourage and equip Open Education practitioners all over the world to make use of new open methods in the realm of collaborative book writing, like book sprints and maintaining open books, for their respective projects.

Keywords: Open Science, training, living book, book sprint

Introduction

In February 2018, the EU-funded project FOSTER Plus[1] and the TIB[2] in Hanover collaboratively organized an extraordinary writing adventure: A book sprint to author an Open Science training handbook. A group of professionals from various areas of expertise came together for one week to collect and share their experiences on multiplying Open Science. The result is an open living handbook on Open Science training.

High quality trainings are fundamental when aiming at a cultural change towards the practical implementation of Open Science principles. In the current project phase, FOSTER shifts its focus from raising awareness of the importance of Open Science to educating researchers about how to apply it in their daily work routines. In order to expand the reach of trainings, the project supports and trains Open Science advocates by developing new training materials and activities. Teaching resources can be a valuable support for Open Science instructors and trainers. In order to strengthen the Open Science training capacity, FOSTER initiated the creation of a key resource: A handbook that condenses all aspects that are important to consider when conducting training for Open Science topics along with practical guidance on how to organize trainings and what methods and exercises are useful.

The Open Science training handbook can be a first step towards developing Open Access and Open Science curricula and pedagogies. Supporting and connecting an emerging Open Science community that wishes to pass on their knowledge as multipliers, the handbook enriches training activities and unlocks their full potential.

The book sprint method

Across Europe, Open Science experts have been delivering training for many years. There is a lot of training expertise available. FOSTER has been collecting the training resources on its portal since 2014 (cf. Schmidt et al. 2016).

The underlying idea of the Open Science training handbook has been to collect the experts' experiences in a resource to share with future Open Science trainers. In order to realize this, FOSTER had to bring together experts, who usually have a very limited amount of time. To approach this problem the project decided to organize a book sprint. The method founded by Adam Hyde, involves a three to five day workshop during which a group of experts is facilitated to produce a book fast and efficiently (cf. Baker et al. 2014). The book sprint format derived from methods for agile software development such as Scrum[3]. "In the past, book sprints have been used successfully to produce technical documentation [...]" (Barker et al. 2013, p.2). However, "the method can be extended and applied to any context where a group of people need to work together to achieve a common goal."

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[1] Fostering the practical implementation of Open Science in Horizon 2020 and beyond, http://www.fosteropenscience.eu/
[2] German National Library of Science and Technology – Leibniz Information Centre for Science and Technology and University Library
[3] "Scrum is an iterative, incremental framework for projects and product or application development. It structures development in cycles of work called Sprints." (Sutherland 2012, p.14)

(Zennaro et al. 2007, p.2) The method helps to manage a large number of contributors and allows high quality work at very little cost (cf. Zennaro et al. 2007, p.7).

In August 2017 FOSTER published an open call for proposals and consequently received 39 applications by Open Science trainers from all over the world who were willing to contribute to the Open Science training handbook. During an extensive selection process, taking into account training experience, Open Science expertise, scientific background as well as gender, region and motivation, the project identified fourteen well-qualified instructors. They were invited to the book sprint in February 2018 in Hanover, Germany.

Working together in this format, the team of authors maximised its creativity, created a lot of content and presented the outcome in an attractive and helpful way for trainers. The sprint method initiated a collaborative writing process and ensured a finished book in only a few days.

Collaborating with the TIB Hanover was extremely valuable for the organization of the Book Sprint, as TIB had already gathered experiences in book sprinting in March 2014 when thirteen authors met in Hanover in order to create the freely accessible manual 'CoScience – Collaborative research and publishing via the web' on the platform handbuch.io[4]. Some crucial and hard-won insights, e.g. an author's guide provided in advance to the participants, surely helped to make the FOSTER book sprint a success.

The Open Science training handbook

Bringing together methods, techniques and practices the Open Science training handbook aims at supporting educators in Open Science. The result is a guide on how to forward knowledge on Open Science principles to networks, institutions, colleagues and students. Sharing their experience and skills of imparting Open Science principles, the experts produced an open knowledge and educational resource oriented to practical teaching. In other words, the focus of the new handbook lies not on spreading the idea of Open Science, but on "how to" spread the idea of Open Science most effectively.

The handbook instructs and inspires trainers on how to create high quality and engaging trainings. By addressing challenges and giving solutions it strengthens the community of Open Science trainers. The book provides best practices, methods, background information as well as exemplary training outlines. It presents possibilities on how to organise trainings and gives trainers the opportunity to select the components they like and find useful. Additionally, checklists and glossaries add value.

The handbook is a living open textbook, meaning it enables contributions and changes during a longer period. From 16th of February until 4th of March 2018 the handbook was available online for comments and suggestions from the wider Open Science community. In addition, we particularly invited the original applicants with Open Science and scientific expertise to review the chapters written by their colleagues. This is how the majority of people who expressed their interest could make contributions.

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[4] CoScience book sprint: https://www.tib.eu/en/research-development/project-overview/project-summary/coscience/

Outlook and future implications

Further down the road, the handbook is going to be opened even more. The handbook will be a living resource online accessible, including a fully detailed version history, under the terms of Creative Commons - Attribution 1.0 International license[5]. This license allows everyone to "freely build upon, enhance and reuse the works for any purposes without restriction under copyright or database law" (Creative Commons). Being accessible online, it will provide a platform for an emerging community of Open Science trainers to share and discuss best practices. It will be open for the community's comments and contributions of new case studies, best practices, exercises, tools or methods. This is particularly important to cover many different scientific disciplines and to broaden the scope and herewith the audience of the handbook.

Both, the sustainable use and the longevity of the handbook, are guaranteed by linking it to other project activities.

- The weekend after the book sprint, Wikimedia Germany, VolksWagen Stiftung and Stifterverband held a meeting with their fellowship program "Freies Wissen" at TIB, right where the book sprint took place. In this program, 30 selected junior researchers received advice on open knowledge practices. Along with their mentors, they had the opportunity to join the book sprint authors, and to learn about the book as well as the book sprint project itself.
- In April 2018, FOSTER equipped new Open Science trainers during a bootcamp. On the one hand the new trainers will benefit from this handbook when putting their training into practice, and on the other hand, they will be able to contribute to the resource after some time of training experience, e.g. providing case studies.

Interactive open video lectures will complement the collaboratively written texts. Lecture presentations will be offered separately on TIB's SlideWiki platform, which allows collaborative reuse for different learning scenarios. Apart from that, the project will explore the possibility of translating the Open Science training handbook into different languages in order to reach a wider audience and to make it accessible to everyone. There has already been a request by a related project to translate the final handbook into Spanish, which can be a great chance to reach more Open Science trainers.

In our ultimate goal to establish a robust, highly reusable resource on a certain topic (in this case, "Open Science training") in a short matter of time, we utilize two of the most prominent concepts and methods from the area of collaborative book writing: **Book sprints** and **living books**. Although the opportunities of both became apparent in the last few years, they still bear challenges, especially when applied to a loosely coupled, international audience of authors and multipliers. We scrutinize our experiences all along the process: From the book preparation (including application, selecting and briefing of authors), through facilitating the book sprint itself, up to the reuse and enhancement of the book with different groups in different scenarios. Hereby, we hope to encourage and equip Open Education practitioners all over the world to make use of new open methods in the realm of collaborative book writing, like book sprints and maintaining open books, for their respective projects.

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[5] Creative Commons CC0: https://creativecommons.org/share-your-work/public-domain/cc0/

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About FOSTER Plus

FOSTER Plus (Fostering the practical implementation of Open Science in Horizon 2020 and beyond) is a 2-year, EU-funded project, carried out by eleven partners across six countries. The primary aim is to contribute to a real and lasting shift in the behaviour of European researchers to ensure that Open Science becomes the norm. To reach this aim it supports Open Science trainers in multiplying open access, open data sharing and open science principles.

About TIB

TIB (German National Library of Science and Technology) is the Leibniz Information Centre for Science and Technology and University Library in Hanover. It runs multiple infrastructure services in areas like research data management, knowledge graph etc. TIB is part of the Leibniz Research Alliance Science 2.0.