Adaptable Methods for Training in Research Data Management

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ABSTRACT

The management of research data has become an essential aspect of good scientific practice. Education in research data management is, however, scarce. The low number of trainers can be attributed on the one hand to a lack of educational paths. On the other hand, qualification opportunities for academics who have already completed their studies and are in employment are missing. Within the research project FDMentor a Train-the-Trainer programme was therefore developed to teach potential multipliers of research data management, and at the same time impart basic didactic knowledge. The resulting concept was created, in addition to freely re-usable materials, to support researchers and research support staff in passing on this knowledge. In addition, the generic development and free licensing of the concept enables transferability to other thematic contexts, such as Open Access or Open Science.

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INTRODUCTION

Research data management (RDM) should be an integral part of the research process, as stipulated by national and international research funders. However, knowledge in this area is not yet widespread among researchers and institutional support personnel. Especially in the context of different Open Science Cloud initiatives[1] that are being established worldwide researchers will increasingly need data management competences in the future (Mons et al. 2017). Despite this need, corresponding courses of study are only just being developed. Libraries and computer centres are occasionally engaged in teaching RDM skills. But even there, a lack of personnel capacity to systematically train students and staff is evident. To overcome this knowledge gap, Humboldt-Universität zu Berlin and Freie Universität Berlin joined forces and expertise. From 2017 to 2019, they cooperatively developed a Train-the-Trainer programme within the joint research project FDMentor (Helbig et al. 2019) to enhance competences in RDM.

FDMentor was funded[2] by the German Federal Ministry of Education and Research for two years. Within this time, five universities from the German federal states Berlin and Brandenburg cooperatively developed RDM solutions for central institutions of universities. This encompassed the creation of materials for strategy development, research data policies, legal issues, and competence enhancement.

CREATING A TRAIN-THE-TRAINER PROGRAMME

The Train-the-Trainer programme that was developed during the FDMentor project consists of an extensive training concept, including the necessary working materials and teaching scripts. Pilot workshops were conducted to test its effectiveness. The programme is designed to allow participants, as potential trainers, to make as little effort as possible to conduct workshops on RDM basics themselves.

DEVELOPING THE UNDERLYING CONCEPT

The Train-the-Trainer concept was developed according to the ADDIE model: analysis of the existing material (A), design of the possible training (D), development of the necessary materials (D), implementation of pilot trainings (I) and evaluation of the workshops (E) (Branson et al. 1975).

The first phase 'A' was carried out in cooperation with the German DINI/nestor Working Group on Research Data (DINI n.d.). The existing training material was collected to form an extensive catalogue of German resources for training, support and information on RDM (FDMentor and DINI/nestor-AG Forschungsdaten 2018). These resources were then analysed to determine the most relevant topics of RDM.

The information obtained from the analysis was used in the second step (phase 'D') to design the first draft of the contents of the Train-the-Trainer concept. The selected topics have been put in context and in reasonable order following the leitmotif. This material was then supplemented with knowledge obtained through the literature review on further education and training. The authors decided to base the concept mainly on the school of Klaus Döring (2008) and Harald Groß (n.d.), but other models (Arnold 2018, Gold 2015, Siebert 2012) were also considered and included at different stages of the process of concept development.

The training material was created after determining the length of the event, the target group and the general framework for the workshops (the second 'D'). The authors developed interactive methods for teaching RDM to adults, focused on one's own experience and on further research. Particularly helpful were the learning tips and methods from Harald Groß' seminars and materials (Groß 2010, Groß 2014, Groß, Boden and Boden 2012a, Groß, Boden and Boden 2012b). Within the concept, each method developed and applied pursues a specific aim. Particular emphasis was placed on the use of diverse teaching and activation methods to

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1   Examples are the European Open Science Cloud (EOSC), the Australian Research Data Commons (ARDC), the Big Data to Knowledge (BD2K) of the National Institute of Health in the US, and the African Open Science Platform (AOSP).

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increase engagement and active participation. Among others, application, knowledge transfer, and replication methods were integrated to facilitate the learning process. The methods including their impact, intended target audience, duration, necessary materials and the goals are described in detail in the concept. An important feature of the chosen methods is the interaction with the participants and giving them the opportunity to share their expertise with each other. Furthermore, the participants of the workshops can test the methods directly by participating in the tasks. In this way they can experience for themselves what effect a certain method has. Direct adoption and transfer to other training topics are therefore simplified. Most methods can also be easily adopted to other training contexts.

As a result, a two-day introductory course was created that combines didactic methods as well as RDM content. The programme is designed for twelve participants from diverse disciplines and backgrounds with or without prior knowledge. The Train-the-Trainer workshops on RDM are based on a comprehensive concept, which contains presentation slides, flipchart templates, worksheets, and scripts (Biernacka et al. 2018). Each of the 22 learning units (see *Figure 1*) is described in detail in the concept. The accompanying teaching scripts inform about the content of the respective training unit, the time required, the necessary materials, and alternative methods.

Unit No.	Topic	Duration (in minutes)
	Day 1	
1	Meet and greet	25
2	Orientation	20
3	Didactic approach	20
4	Digital research data	45
	Coffee break	15
	Activation	5
5	Research data policies	15
6	Data management plan	20
7	Order and structure	20
	Lunch break	60
	Activation	5
8	Documentation and metadata	50
9	Storage and backup	10
10	Long-term archiving	20
	Coffee break	15
	Activation	5
11	Access protection	15
12	Formal framework	30
13	End of the first day	20

Unit No.	Topic	Duration (in minutes)
	Day 2	
14	Welcome and orientation on day 2	15
15	Data publication (Part 1)	55
	Coffee break	15
15	Data publication (Part 2)	35
16	Re-use	30
17	Legal aspects	25
	Lunch break	60
	Activation	5
18	Institutional infrastructure	10
19	Practical exercise	20
	Coffee break	15
	Activation	5
20	7 steps of concept development	15
21	Didactic methods	55
22	Feedback and closure	50

Figure 1 Schedule of the two-day Train-the-Trainer workshop.

There were two pilot phases during the project (phase 'I' of the ADDIE model), in order to improve the Train-the-Trainer programme by making it more user-oriented and re-usable. The first version of the design had been tested in five workshops during spring 2018. A total of 51 research staff and professors from various disciplines, as well as employees from diverse central institutions participated in this pilot phase. Detailed feedback was received at the completion of each workshop, and then reviewed by the project team (phase 'E'). The questionnaire used is published as a template in the concept itself (Biernacka et al. 2018: 145–152). The results of the evaluation are presented in detail in Dolzycka (2020: 6–14).

The participants in the first pilot phase saw potential for expansion in the area of didactics. Furthermore, more examples and greater detail were desired, especially on the topics of re-use, as well as documentation and metadata. These findings from the first testing phase were integrated into an updated and modified concept version. Additionally, so-called *buffer times* were included to provide more space for discussions and to allow for more flexibility in responding to questions or requests. In autumn 2018 this unfinished working edition was tested throughout four additional workshops. The 31 participants were also asked for feedback directly after the workshop, through a feedback form (Dolzycka et al. 2019: 167–174), in the

second pilot process. The attendees confirmed that the workshop fulfils the aim of being a Train-the-Trainer course. 90% of the participants rated their improvement of RDM training abilities as 'good' or 'very good'.

On the basis of the evaluations, the concept was again critically reviewed. Based on the results, a second version of the Train-the-Trainer programme has been developed and published (Dolzycka et al. 2019). This concept version contains detailed explanations on how to use the materials and an extension of the methodological examples, which the participants of the two pilots considered to be particularly useful.

In order to determine the success of the re-usable materials and the impact of the training, the participants of the first pilot phase were again asked for feedback three to five months later. The survey results show that the training materials can be used well in their own events. The participants of the Train-the-Trainer workshop have conducted follow-up workshops, mostly for researchers (Dolzycka 2020).

The Train-the-Trainer workshop on RDM was held as part of the project for the tenth and last time in March 2019. In total, nearly 100 people from diverse institutions and disciplines were trained as RDM trainers during the FDMentor project phase.

WORKSHOP DESIGN

The group is kept small (up to twelve people) to ensure successful learning outcomes with the participants. This group size allows the participants not to be afraid to speak in front of many people and thus to ask questions or clarify ambiguities. However, the group is large enough to bring in diversity, different experiences and perspectives as well as discipline-specific characteristics.

The workshop is scheduled for two full days from 9 o'clock in the morning till 4:30 in the afternoon with one longer lunch break and two coffee breaks (see *Figure 1*). The schedule shows the order of the units, including the time expected for each unit, breaks, and periods for activation methods. The remaining time is called *buffer time* and is usually used and needed for discussions during the workshop.

At the beginning of the workshop, time to get to know one another is scheduled. This social component is deliberately incorporated into the Train-the-Trainer workshop to make learning more pleasant and efficient, and to establish a trust base for a good working atmosphere. This improves the probability of active participation (Szepansky 2017). In addition, Harald Groß' concept of "making voices sound" (Groß 2017) is used early on to encourage the learning group to speak up from the beginning.

TRAINING AND ENGAGEMENT METHODS

According to Döring (2008), learning is a receptive and expressive process. During the first phase, learners are interested in the topic and new knowledge is interpreted, processed, and anchored. Typically, this step does not last longer than 20 minutes. The learning model states that one can only talk about learning if one is also capable of recalling what has been learned, reproducing it, transferring, and eventually implementing it. The methods applied in this Train-the-Trainer workshop pursue these different goals following the steps according to Döring (2008). Exemplary methods of the workshop are shown below.

ACTIVATION: 7 PLOP

Activation methods are used to (re)focus the participants on the topic in the morning, after a longer lecture and work phase, after a longer break, and especially after lunch to overcome digestive fatigue. On the one hand, the methods serve to stimulate the group physically or mentally by solving complex actions or mathematical tasks. Concentration is thereby sharpened. On the other hand, activation methods can strengthen the "we" feeling of the group, as also cooperative exercises can be used. The actions or tasks are usually short and can be repeated a few times if necessary or desired. In the following, a mathematical, cooperative exercise named '7 plop' is presented (see *Figure 2*).

Activation: 7 plop	
Learning target: • Activate • Support concentration	**Description:** The participants sit in their seats. One after the other, they are collectively counting to 70. There are a few rules, however: • The number 7 may not be spoken. Instead, "plop" is said, • this also happens with all numbers divisible by 7 • and for all numbers containing the digit 7. If someone makes a mistake, the others clap their hands and cheer.
Duration: 5 minutes	**Required materials:** • None **Online format**: • Set order of participants

Figure 2 Description of the activation method 7 plop.

Activation methods can be applied to different learning scenarios and group constellations. Both smaller and larger groups can be included. They can also be used in online training courses and are particularly recommended for this purpose, as participants usually tire more quickly. Since activation exercises often have a playful aspect, they should, however, be used with caution in training courses with serious topics. The choice of the activation exercise should therefore be based on the target group and the general framework of the event.

KNOWLEDGE IMPARTMENT: WORKSHEETS

Worksheets are a traditional and established way to acquire and strengthen new knowledge. They can be solved in individual work as well as in groups (see *Figure 3*). Worksheets are widely used in the different units of the Train-the-Trainer programme. Whether it is used to compare storage media or to apply citations and licensing information. These worksheets can also be adopted directly from the Train-the-Trainer workshop in RDM classes.

Worksheet: Anonymisation	
Learning target: • Independently create new contents • Retrieve prior knowledge	**Description**: Participants receive a worksheet with a transcript from an interview study. Individually or in groups they have to anonymise the text. The participants can draw on their prior knowledge. The solutions are discussed in the group.
Duration: Explanation: 1 minute Implementation: 5-10 minutes Discussion of results: 5 minutes	**Required materials:** • Prepared and printed worksheets • Pens **Online format:** • Collaborative text processing, e.g. with OnlyOffice

Figure 3 Description of the worksheet on the example of the anonymisation exercise.

Worksheets are frequently used outside the RDM field and hence are one of the most common methods of training and knowledge impartment.

KNOWLEDGE PROCESSING: FLIP AND TURN

Instead of presenting the content to the learners as a ready-made construct, this method gives the participants the opportunity to actively deal with the components and logical relationships of a process, model or theory (see *Figure 4*). Additionally, the participants can be given the opportunity to add their own components. Sometimes there are surprising results, but this stimulates an intensive discussion.

Flip and turn (Groß 2014) is applicable to every learning aspect, that includes components with logical connections, e.g. teaching the learning model according to Döring (2008).

Flip and turn: Data lifecycle	
Learning target: • Independently work out connections	**Description**: Participants receive cards with key terms of a process, model or theory. In groups they have to arrange the cards in a logical order and present their results to the other participants.
Duration: Explanation: 3 minutes Implementation: 5-10 minutes Presentation of results and discussion: 10-15 minutes	**Required materials**: • Labelled cards • Adhesive tape • Pins **Online format:** • Unsorted terms, e.g. at Padlet, https://padlet.com

Figure 4 Description of the method flip and turn on the example of the data lifecycle.

KNOWLEDGE APPLICATION: STATEMENT SLAM

Applying knowledge in a Train-the-Trainer workshop can be done in many different ways. As an example the statement slam method is presented (Groß, Boden and Boden 2012b), which is used to summarise and apply what has been learned at the end of the data publication unit. This method enables future trainers and consultants to test and practice their argumentation skills and to deal critically with the given topic (compare *Figure 5*). It is also beneficial to carry out this method in regular RDM trainings with researchers as participants. This gives participants the possibility to apply the new knowledge and, as a result, persuade each other of best practices with convincing arguments.

Statement slam: Data publication statements	
Learning target: • Coping with a topic • Argue	**Description**: A provocative statement on a specific topic is written down on each sheet. The sheets are rolled up one by one. Each participant draws a roll and prepares his or her position on the statement. Afterwards the statements are presented in 1 minute to the group.
Duration: Explanation: 2 minutes Preparation of the statements: 3 minutes Presentation of the statements: 15 minutes (with 12 participants and buffer time)	**Required materials:** • Sheets with provocative statements • Elastic bands **Online format:** • Statements via personal chat or email

Figure 5 Description of the statement slam method on the example of the data publication statements.

This approach can be applied to other subjects where it is possible to make controversial remarks. Teaching in various fields like politics, biology (e.g., genetic research) or medicine (e.g., medically assisted suicide) can benefit from this method and give participants the opportunity to put themselves in other perspectives or to play Devil's Advocate.

REPLICATION: KEYWORD STRIPS

Keyword strips (Orbium Seminare 2016) allow content to be repeated without direct control of the trainer. Participants complete and correct themselves independently. The fact that the lecturer is only involved on the request of the participants results in the participants being less inhibited from discussing any ambiguities among themselves (see *Figure 6*).

One of the advantages of keyword strips is that they can also be used for larger groups. Even in bigger groups all participants are actively involved in the repetition.

Keyword strips	
Learning target: • Remember • Repeat • Reproduce	**Description**: The most important keywords of the content already discussed are written on small pieces of paper and put into an envelope. The participants are divided into groups of 3 and each group receives an envelope with a set of keywords. One participant from the group draws a keyword and has to explain it to the others. The others can make additions and corrections. When everything has been said about the keyword, the envelope is passed on to the next person and the next term is drawn, etc.
Duration: Explanation: 2 minutes Implementation: 5-10 minutes	**Required materials:** • Keywords on pieces of paper • Envelopes **Online format:** • Breakout sessions with groups • Picking keywords at Wheel of names, https://wheelofnames.com

Figure 6 Description of the keyword strips method.

KNOWLEDGE TRANSFER: SCHEMA-X

Schema-X (Groß 2014) is used in the Train-the-Trainer programme for knowledge transfer. During the workshop, participants are exposed to a range of different teaching methods as well as to their methodological concept. They transfer their recently gained expertise using a scheme and develop their own method in small groups. In other areas, this approach can also be used to easily organize and order knowledge (compare *Figure 7*).

Schema-X	
Learning target: • Structuring contents • Ordering contents	**Description**: The participants are divided into 4 groups. Each group receives a flipchart sheet with a pre-drawn schema (questions, categories, headings, timelines). This must now be filled out in teams. The results are then presented by each team.
Duration: Ca. 30 minutes	**Required materials:** • Flipchart sheet with pre-drawn schema • Pens **Online format:** • Breakout session with whiteboard or Padlet, https://padlet.com

Figure 7 Description of the Schema-X method.

Another use case is seen here in this article: a simple overview of various methods.

In conclusion, the Train-the-Trainer programme on research data management is based on the ADDIE framework (Branson et al. 1975) combined with learning theory and methods by Döring (2008) and Groß (2017). The programme has been extensively tested in pilot workshops. The methods for knowledge impartment, knowledge processing, knowledge application, replication, and knowledge transfer together with activation methods ease and deepen the participants learning process. The programme fulfils its intended purpose of training multipliers of research data management. Within two days, it allows for short and easy familiarization with the topics of research data management as well as didactics. In addition, the re-usable materials facilitate a quick implementation at the own institution.

RE-USE AND SUSTAINABILITY

The concept and materials are available online under a CC-BY license for easy re-use and adoption. Many FDMentor methods and materials can be easily adapted to other topics or

training scenarios. However, re-use should always consider the training objective, target group and available time.

The Train-the-Trainer workshops will continue to be conducted at Humboldt-Universität zu Berlin, Freie Universität Berlin and within the state initiative fdm.nrw as part of an RDM certificate course (fdm.nrw 2020). Other state initiatives in Germany are planning a regional offer of workshops based on the concept developed by FDMentor as well.

In the meantime, an English version (Biernacka et al. 2020a) of the concept has been created to make it available to a wider audience and to facilitate international dissemination. While the literature and references were adapted to the English-speaking target group, the contents of the teaching units remained the same. This means, for example, that the unit on legal aspects (Biernacka et al. 2020a, pp. 130–141) continues to focus on the laws applicable in Germany.

Furthermore, on the basis of the Train-the-Trainer concept and the great demand for participation in the associated workshops, the Sub-Working Group Training/Further Education (UAG Schulungen/Fortbildungen 2020) of the DINI/nestor Working Group Research Data was launched. The group has assigned itself the task of revising the FDMentor Train-the-Trainer concept and to create a generic certified German-wide RDM course in the long term. Thus comments and recommendations from the entire Sub-Working Group, and in particular the experience of four new authors, were integrated into the revision and already contributed to the publication of the third version (Biernacka et al. 2020b).

The presented methods will be further applied in the FDMentor follow-up project FDNext (FDNext 2020). Within the project a subject-specific adaptation of the Train-the-Trainer programme for psychology will be developed. This will be supplemented by a handbook for the development of further subject-specific Train-the-Trainer programmes.

COMPETING INTERESTS

The authors have no competing interests to declare.

AUTHOR CONTRIBUTIONS

All authors contributed to the manuscript equally. K. Biernacka wrote about the Train-the-Trainer concept and the workshop design in 'Creating a Train-the-Trainer Programme'. K. Helbig contributed the majority of the content on the abstract, introduction as well as the 'Re-use and Sustainability'. P. Buchholz wrote on 'Training and Engagement Methods' and checked the references.

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REFERENCES

Arnold, R. 2018. *Wie man lehrt, ohne zu belehren: 29 Regeln für eine kluge Lehre*. Heidelberg: Carl-Auer.

Biernacka, K, Bierwirth, M, Buchholz, P, Dolzycka, D, Helbig, K, Neumann, J, Odebrecht, C, Wiljes, C and **Wuttke, U.** 2020a. Train-the-Trainer Concept on Research Data Management. Version 3. *Zenodo*. DOI: *https://doi.org/10.5281/zenodo.4071471*

Biernacka, K, Buchholz, P, Dolzycka, D, Helbig, K, Neumann, J, Odebrecht, C, Wiljes, C and **Wuttke, U.** 2020b. Train-the-Trainer Konzept zum Thema Forschungsdatenmanagement. Version 3. *Zenodo*. DOI: *https://doi.org/10.5281/zenodo.3938533*

Biernacka, K, Dolzycka, D, Helbig, K and **Buchholz, P.** 2018. Train-the-Trainer Konzept zum Thema Forschungsdatenmanagement. Version 1. *Zenodo*. DOI: *https://doi.org/10.5281/zenodo.1215377*

Branson, RK, Rayner, GT, Cox, JL, Furman, JP, King, FJ and **Hannum, WH.** 1975. Interservice Procedures for Instructional Systems Development: Executive Summary and Model. *National Technical Information Service.*

DINI. n.d. DINI/nestor-AG Forschungsdaten. Available at *https://dini.de/ag/dininestor-ag-forschungsdaten/* [Last accessed 17 March 2021].

Dolzycka, D. 2020. Ergebnisse und Erkenntnisse aus Pilotschulungen eines Train-the-Trainer-Programms zum Thema Forschungsdatenmanagement. *o-bib,* 7(2): 1–19. DOI: *https://doi.org/10.5282/o-bib/5482*

Dolzycka, D, Biernacka, K, Helbig, K and **Buchholz, P.** 2019. Train-the-Trainer Konzept zum Thema Forschungsdatenmanagement. Version 2. *Zenodo.* DOI: *https://doi.org/10.5281/zenodo.2581292*

Döring, KW. 2008. *Handbuch Lehren und Trainieren in der Weiterbildung.* Weinheim: Beltz.

fdm.nrw. 2020. Weiterbildung. Kompetenzaufbau im Kontext FDM. Available at *https://www.fdm.nrw/index.php/handlungsfelder/weiterbildung/* [Last accessed 17 March 2021].

FDMentor and DINI/nestor-AG Forschungsdaten. 2018. Materialkatalog zum Forschungsdatenmanagement. Version 1. *Zenodo.* DOI: *https://doi.org/10.5281/zenodo.1209284*

FDNext. 2020. FDNext. Available at *https://www.forschungsdaten.org/index.php/FDNext* [Last accessed 17 March 2021].

Gold, A. 2015. *Guter Unterricht: Was wir wirklich darüber wissen.* Göttingen: Vandenhoeck & Ruprecht. DOI: *https://doi.org/10.13109/9783666701726*

Groß, H. 2010. *Munterbrechungen. 22 aktivierende Auflockerungen für Seminare und Sitzungen.* Berlin: Schilling.

Groß, H. 2014. *Munterrichtsmethoden. 22 weitere aktivierende Methoden für die Seminarpraxis.* Berlin: Schilling.

Groß, H. 2017. *Kleiner Hebel – Große Wirkung. Teil 1: 22 didaktische Kniffe.* Berlin: Schilling.

Groß, H. n.d. *Arbeitsheft Nr. 1: Das Lernen auslösen.* unpublished: Didaktik.

Groß, H, Boden, B and **Boden, N.** 2012a. *Munterbrechungen. 22 aktivierende Auflockerungen für Seminare und Sitzungen.* Berlin: Schilling.

Groß, H, Boden, B and **Boden, N.** 2012b. *Munterrichtsmethoden. 22 aktivierende Lehrmethoden für die Seminarpraxis.* Berlin: Schilling.

Helbig, K, Biernacka, K, Buchholz, P, Dolzycka, D, Hartmann, N, Hartmann, T, Hiemenz, B, Jacob, B, Kuberek, M, Weiß, N and **Dreyer, M.** 2019. Lösungen und Leitfäden für das institutionelle Forschungsdatenmanagement. *o-bib,* 6(3): 21–39. DOI: *https://doi.org/10.5282/o-bib/2019H3S21-39*

Mons, B, Neylon, C, Velterop, J, Dumontier, M, da Silva Santos, L and **Wilkinson, M.** 2017. Cloudy, Increasingly FAIR; Revisiting the FAIR Data Guiding Principles for the European Open Science Cloud. *Information Services & Use,* 37(1): 49–56. DOI: *https://doi.org/10.3233/ISU-170824*

Orbium Seminare. 2016. Munterrichtsmethode 46: Stichwortsalat. Available at *https://www.orbium.de/methodensammlung/munterrichtsmethode-46-stichwortsalat/* [Last accessed 17 March 2021].

Siebert, H. 2012. *Didaktisches Handeln in der Erwachsenenbildung: Didaktik aus konstruktivistischer Sicht.* Augsburg: ZIEL.

Szepansky, W-P. 2017. *Souverän Seminare leiten.* Bielefeld: Bertelsmann.

UAG Schulungen/Fortbildungen. 2020 UAG Schulungen/Fortbildungen. Available at *https://www.forschungsdaten.org/index.php/UAG_Schulungen/Fortbildungen* [Last accessed 17 March 2021].