

Action plan for the establishment of data stewardships at the University of Teacher Education in Special Needs

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1 Introduction

The Swiss National Open Research Data action plan defines the action plan B5.2 intending professionalization of data stewardships at higher education institutions (HEI) in Switzerland. The University of Teacher Education in Special Needs (HfH) recognizes and supports the action plan and will develop professional data stewardships at the HfH.

The action plan of the HfH indicates how professionalization of data stewardship will be developed in the two-year funding period and in the mid- and long-term. The HfH understands that “Data stewardship involves managing and monitoring an organization's data assets with the goal of providing access to research data. As such, it is the link between researchers and support units in the form of IT, libraries, and infrastructure providers. Data stewards take an active advisory role for researchers and serve as the first point of contact for all questions about (open) research data, e.g. for data backup, long-term storage or data management.” (swissuniversities, 2022)

The commission R&D of the chamber UTE of swissuniversities also recognized the need for Open Science and installed a workgroup ORD. From that workgroup several universities of teacher education (UTE) recognized the need to collaborate, because of the small size of the UTE and the similar topics and methodology in research. Five UTE committed themselves to submit a multi-project proposal to the call within action line B5.2. The action plan HfH is part of that multi-project action plan. Exchange of expertise, approaches and regulations with the other UTE will be specified.

2 Gap analysis

The HfH is a UTE with a focus on special needs education with the goal of “Education for All”. Around 1'300 students are enrolled in two Master programs (special education with specialties in special needs education and remedial early education, logopaedics) and three Bachelor programs (logopaedics, psychomotor therapy, and sign language interpreting). All research and teaching activities are generated in five thematic institutes. Clustered thematic research and teaching fields within the institutes are represented by professorial positions, which cover therapeutic and pedagogical professions. The research staff in the institutes are responsible for teaching, further education, research and development, and services (4 performance mandates). The head of each institute is member of the HfH management (German, “Hochschulleitung”). Strategy of the HfH is governed by the HfH management, who is led by the dean. Support units are bundled into three entities: 1) the rectorate, including communication, university development, research communication, 2) central services, including finance and controlling, administration, IT services, business applications, and whose manager is member of the HfH management, and 3) research centres, including centres for research and development (CRD), for teaching (CT), for further education and services (CFES). The centres provide support, manage quality, processes, and regulations of the four mandates. The heads of the CRD and CT have an advisory role in the HfH management. The library, digital learning centre (DLC) as well as support centre (“Förderzentrum”) complete the research centres (see Figure 1 for an organization chart).

The financial and personnel resources cover about 15% for research and 70% for teaching. Because of the combined performance mandates in the institutes, research staff complies to be active in at least two performance mandates. Hence, only few research staff members have high workload in research activities. However, through this strategy, there is a high transfer between performance mandates, e.g., teaching in the programs can be informed by novel developments and insights in the research, while research and development can be informed by demand in the professional fields in which students and teachers are engaged.

Organigramm der HfH



Figure 1. Organization chart of the HfH (in German)

2.1 Current situation regarding Open Science and ORD

The HfH has an Open Access policy and fund. OA publications of the staff are collected in a repository on Zenodo (https://zenodo.org/communities/oa_repositorium_hfh), and student theses are collected on Zenodo (https://zenodo.org/communities/abschlussarbeiten_hfh). OA activities and support are managed by the library. The CRD takes a leading role in ORD and research data management (RDM). The reason is that support for RDM, methodological support and grant office, quality management for research, research monitoring, as well as knowledge transfer on research activities inside and outside the HfH is managed by the CRD. This means that the library and CRD have complementary responsibilities regarding Open Science. They will be the **leading units regarding ORD data stewardships**.

Several actions towards ORD data stewardships were taken at the HfH. The HfH ORD strategy was approved by the HfH management, which follows the aims of the national ORD strategy and their action plans and is adjusted to the institutional conditions. Based on that an ORD workgroup was installed by the HfH management in January 2021 to develop new actions regarding ORD. The workgroup constitutes of the head of the CRD, the head of the DLC and two research expert professorial staff members from different institutes. The workgroup initiated the installation of a fund to provide resources to researchers for publishing data on ORD repositories according to the FAIR principles on past projects. A data management plan was adapted from SNF to guide the ORD publication process. This includes implementation of an ethics checklist, but we have no institutional ethics committee. New project regulations allow to plan ORD in advance and allocate specific resources. Several workshops were organized to sensitise researchers and communities towards ORD practice aiming at developing an ORD policy for the HfH. We have prepared an instruction game to lower the threshold in familiarizing with ORD

and FAIR principles. These will be made available to researchers and students alike. Data stewardships have not been formally established.

The HfH manages all research activities centrally in a current research information system, CRIS, which was developed by the CRD (Elsevier, 2022). The core of CRIS is a relational database with interfaces to other databases at the HfH and outside the HfH. An interface with Zenodo is planned. Central information in CRIS are publications (including ORD), projects, collaborations, and funding. **CRIS will play an important role in data stewardships at the HfH.**

There is some expertise at the HfH with ORD and RDM practice. There were several SNF projects, which required ORD and RDM. Researchers through their communities and collaboration partners were able to gain skills regarding ORD and RDM. The CRD has experience with ORD and RDM as well as with data stewardships in the UK through own research. In a few cases the CRD provided support to researchers on ORD and RDM practice. Mostly, however, researchers and their communities are not yet skilled in ORD, RDM, research ethics and data protection regulations. Students are currently unaware of Open Science within the curricula, but we have prepared a teaching platform for all students which would be able to inform students about possibilities to access data for research projects during studies.

Taken together, there is an institutional demand and support by the HfH council to pursue Open Science, i.e. OA and ORD. However, many researchers perceive ORD and RDM as a burden, rather than a resource. There are concerns about data security and ethics as our target groups are often vulnerable and easily identifiable. There is consent that smaller particularly qualitative and development projects with high participatory research components are not suited for ORD and that data on repositories will not be used. Our research project agreement entails the demand to publish data on repositories such as FORS, but the outcome of that policy was neglectable. The professional data stewardship would be developed not only within the HfH as an interface between support units and researchers, but there would also a need for knowledge exchange between UTE, with similar backgrounds to develop a concept of the profession and the roles within the institutions. We also seek to engage students into the process of ORD, as they can benefit mostly in the long-term by using data for their student's projects and for their work as professionals.

2.2 Target situation

By the end of the funding period the HfH will have a concept of professional data stewardship, which is integrated in the institution. A data steward will be appointed who fulfils that role, becomes a contact point for all ORD and RDM issues and provides support in these matters. The data steward will be connected to the CRD, library and other support units. There will also be interfaces installed with the institutions, professorial and other research staff. CRIS will be developed to manage and monitor ORD and RDM activities within and outside the HfH. Processes, regulations, and policy will be established. The data stewardship will be anchored in an overall Open Science strategy. There will further be knowledge exchange with other UTE to continue professionalize data stewardships beyond the funding period. The training of staff and students in ORD and RDM will be initiated.

2.3 Gaps and objectives to reach the target situation

The gap analysis shows that several issues would need to be developed to reach a target situation. The following gaps are targeted within the two-year period (2023-2024).

- Gap 1: HfH strategy on Open Science
The HfH needs an overall strategy, entailing all activities within Open Science, including OA, ORD and RDM at the institutional level. This strategy embeds ORD data stewardships and structures its responsibilities among units as a point of contact to all issues related to ORD.
- Gap 2: Data Steward

Appointment of a junior researcher at the CRD, who will serve as ORD data steward and contact point for issues relating to ORD and RDM.

- **Gap 3: Interfaces among support units**
Data stewardship will be placed at the CRD. Links to the library and digital learning centre and possibly other units (IT services, business applications) need to be developed to fulfil the role in the mid- and long-term.
- **Gap 4: Interfaces between data steward and researchers**
Central for the functioning of data stewardships is the interaction with the researchers in the institutes. Contact points with professorial staff will be developed.
- **Gap 5: Policy, regulations, and processes**
Policy, regulations, and processes will be developed to anchor ORD data stewardship in the HfH and facilitate engagement with ORD according to FAIR principles.
- **Gap 6: FAIR data within the HfH**
Researchers and students have little knowledge about availability of research data from the HfH. A system providing information on where and how to find, access, interoperate and reuse data from our institution needs to be developed. This will serve the work of the ORD data stewardship.
- **Gap 7: FAIR on data outside the HfH**
Researchers and students have little knowledge about availability of research data from other institutions within their thematic fields. A system providing information on where and how to find, access, interoperate and reuse data from other institutions needs to be developed. This will serve the work of the ORD data stewardship.
- **Gap 8: CRIS development**
CRIS is the central tool for monitoring research activities at the HfH. The system will be further developed to monitor ORD activities. Possibilities to use the tool to support data stewards in finding data and covering metadata will be explored and developed.
- **Gap 9: Transfer with other UTE**
Establishment of a continuous exchange and of workshops on data stewardships with other UTE about approaches, developments and standards regarding RDM and ORD, research ethics and data protection regulations.
- **Gap 10: Competencies of staff**
Establishment of information platform, exchange, and further education to improve competencies of staff on ORD and RDM.
- **Gap 11: Competencies of students**
Establishment of ORD workshops on the HfH education platform Ilias to improve competencies of students on ORD and RDM supporting BA and MA programs.

3 Medium term and long-term goals regarding data stewardship

The developments during the funding period will continue. The HfH is committed to the ORD action plan, which means that further calls will be responded to, which will also enrich and affect the profession of data stewardship. Interfaces between the data stewardship, the library and professorial staff members will continue to exist. The library will be managing the databases, which are open to researchers and

students, whereas the CRD will manage the closed system of CRIS. Thus, part of the professionalization regarding ORD will move to the library, as core units for information access, whereas support for RDM will remain at the CRD, because these skills require research expertise. Further, local expertise will be developed in the institutes around the professorial staff members because ORD practice will have thematical and methodological specifics. New staff members will have first contact in the institutes at the local contact points who will have contact with the overall data steward. Monitoring of ORD activities towards the Swiss ORD landscape will remain in the CRD.

4 Integration of data stewardship in the strategy of the HfH

The HfH management recognizes the need for ORD and Open Science in general. The ORD data stewardship will be an important implementation of that strategy and a new Open Science strategy will anchor the position of data stewardship. The monitoring of ORD activities as well as the services and interfaces is managed by CRIS, which ensures a long-term establishment of data stewardship at the HfH. We recently installed an interface between the library and the CRD, which enables monitoring of OA activities at the HfH. Such connections guide our approach towards ORD data stewardships and the future of Open Science at the HfH. The head of the CRD will be responsible for continuation of the development of data stewardship at the HfH.

5 Synergies and complementary internal and external structures on data stewardship

Data stewardship fits in the activities of the research centres, which provide support on all four performance mandates. Future developments of the data stewardship can rise from that embedment in the research centres. CRIS as a central tool will manage the activities of the data stewardship. It is important that interfaces with the institutes and researchers are established, so that the services reach those who need them. This is accomplished at three levels. First, the workgroup, which already includes a professorial staff member continues to exist during the project period and after. Second, the HfH has regular internal meetings with researchers that inform and discuss developments in research management. These instruments will be used to reflect and disseminate activities and developments around data stewardship. Third, the head of the CRD is an advisory member of the university management. This way institutional anchoring of data stewardship is established in the long-term.

The commission Research and Development of the chamber UTE of swissuniversities installed an ORD workgroup. Five member UTE of the commission joined in this multi-project application. These UTE have similar research interests and are in similar positions regarding professionalization of data stewardships. During the project period these five UTE committed to meet regularly with the data stewards at the UTE. In addition, they will discuss approaches, standards, and developments of data stewardships in workshops that are jointly organised during the project period. Further training and exchanges will be established in workshops of other experts and institutions. These workshops will be open to members of other HEI and the project group will participate in activities organized by other HEIs.

6 Action plan for data stewardship

The action plan aims at closing these gaps by the end of 2024. Table 1 shows the action plans with indicators for each of the actions, timeline with milestones and responsibilities for reaching the criteria.

Table 1: Actions, indicators, periods, and responsibilities for the establishment of data stewardships at the HfH

| Action | Indicator | Periods* | Responsible |
|---|--|---------------|---|
| Gap 1: Open Science strategy | Open Science strategy is approved. | 1/2023 | HfH management, head of the CRD |
| Gap 2: Data Steward | A junior researcher is appointed and supports for researchers in ORD. | 1/2023 | Head of the CRD |
| Gap 3: Interface with support units | Interfaces are defined and implemented. | 1/2023-2/2023 | CRD (head, adv. researcher, data steward), library, and other service units |
| Gap 4: Interface with researchers | Interfaces are defined and implemented. | 1/2023-2/2023 | CRD (head, adv. researcher, data steward), professorial staff, researchers at institutes |
| Gap 5: Policy, regulations, and processes for RDM and ORD | Policy, regulations, and processes for RDM and ORD are defined, approved, and monitored by the HfH management. | 2/2023 | CRD (head, adv. researcher, data steward), professorial staff, library, HfH management |
| Gap 6: FAIR data within the HfH | A repository collecting research data at the HfH. Monitoring of ORD activities starts. | 1/2023-2/2023 | CRD (head, adv. researcher, data steward), professorial staff, library |
| Gap 7: FAIR data outside the HfH | FAIR repositories outside the HfH will be piloted for interoperability with the HfH. | 1/2024-2/2024 | CRD (head, adv. researcher, data steward), professorial staff, library |
| Gap 8: CRIS development | Establishment of interfaces between databases in and outside the HfH allowing monitoring of ORD activities. | 2/2023-2/2024 | CRD (head, adv. researcher, data steward) |
| Gap 9: RDM and ORD exchange and workshops | Regular exchange and workshops with RDM and ORD experts of other UTE/HEI are established and organized. | 1/2023-2/2024 | CRD (head, adv. researcher, data steward), professorial staff, library |
| Gap 10: Competencies of staff | HfH workshops will train researchers to interact with ORD data and familiarize with ORD policy, regulations, and practice. | 1/2024-2/2024 | CRD (head, adv. researcher, data steward), professorial staff, library |
| Gap 11: Competencies of students | Workshops will be installed at the teaching platform for students in all programs. | 1/2024-2/2024 | Head of the CRD, data steward, professorial staff, digital learning centre, centre for teaching |

* Periods are half-year periods (e.g., 1/2023 is from January 2023 to June 2023, 1/2023-2/2024 means from January 2023 to December 2024).

Figure 1 shows the dependencies and responsibilities for establishing data stewardships at the HfH as described above.

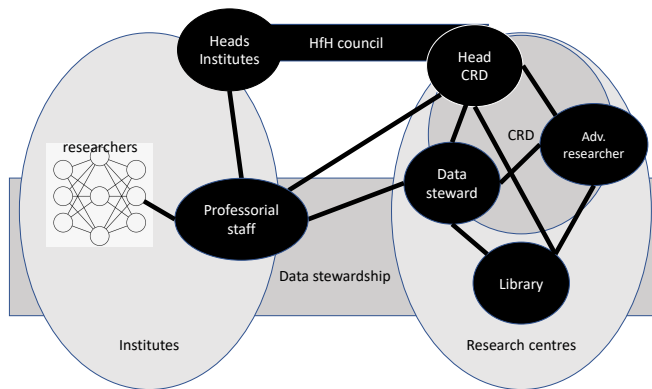


Figure 1. Structure of data stewardship at the HfH

7 Financial plan

7.1 Coordination activities with other UTE

Part of the multi-project activities is to coordinate activities, meetings and workshops for the coordination team and the data stewards of UTE as well as researchers and experts in ORD data stewardships and the reporting towards swissuniversities. The participating UTE agreed on contributing parts. The HfH contributes 23% to the total. The costs for overall coordinating and reporting by the Head CRD is CHF 3'425 p.a. (HfH: 802 p.a) The cost for organizing workshops and meetings will be CHF 6'000 p.a. (HfH: 1'405).

7.2 Head CRD

The head of the CRD will coordinate the project team within the HfH. He will manage information transfer in the project team and with the HfH council and will be responsible for processes, regulations, and policies on ORD and for the supervision of the data steward. These activities will cover about 2.5% p.a. (CHF 6'075 p.a.)

7.3 Adv. Researcher CRD

A member of the CRD is an advanced researcher, who was responsible for the implementation and co-responsible for the conceptualization of CRIS. He has expertise about the interfaces at the HfH and will be responsible for further development of CRIS. He is further involved in methodological support and will be co-supervising the data steward during professional development at the HfH. His support, supervision and developmental work will cover about 5% p.a. (CHF 8'550 p.a.).

7.4 Data steward

The HfH will appoint a position for a data steward at junior researcher level. The role will be to support researchers in ORD and RMD practice. The support will increase during the project period. In addition, the data steward will familiarize with the structures and interfaces at the HfH and will become a recognized expert in ORD and RMD and contact point for all researchers at the HfH. The position will cover about

20% p.a. (CHF 27'000 p.a.). The position will be further equipped with other methodological, IT and administrative support for the CRD.

7.5 Professorial staff

The ORD workgroup of the HfH has two professorial staff members. One of them remains in the ORD project group, who is currently building expertise in ORD practice. She will be responsible for interactions with other professorial staff. She will provide feedback on needs of researchers at the institutes for ORD and RDM support and data stewardship. She will participate in the workshops and receive further training in ORD and RDM. The activities will cover about 1.25% p.a. (CHF 3'375 p.a.).

7.6 Library and other support staff

The library will be important in the long-term professionalization of data stewardships, because of the role of the library in managing databases for internal and external use. As member of the project team the librarian will implement internal and external ORD databases into the library system and support connections to CRIS. The activities will cover about 2.5% p.a. (CHF 2'790). The digital learning centre will support implementation of interfaces with students at the HfH on the Ilias platform. The activities will cover about 1% p.a. (CHF 1'900 p.a.).

7.7 Other costs

The upgrade of software licences allows developing interfaces between different units and databases at the HfH (CHF 1'000 p.a.). There will also be travel costs for participation to external workshops and meetings of about CHF 1'000 p.a.

7.8 Overall budget plan

The SBFI contribution for the HfH is set at CHF 50'254.73. Table 2 shows the overview on the budget regarding the personnel costs including social security contributions. The attached budget form shows the division in real and virtual money and SBFI contribution.

Table 2: Components and the budget during the funding period

| Components | Budget in 2023 in CHF | Budget in 2024 in CHF | Total budget in CHF | SBFI | HfH (real/virtual) |
|--|-----------------------|-----------------------|---------------------|--------|----------------------|
| PERSONELL | | | | | |
| Head CRD (2.5% p.a.) | 6'075 | 6'075 | 12'150 | - | 12'150 (6'075/6'075) |
| Adv. Researcher (5% p.a.) | 8'550 | 8'550 | 17'100 | - | 17'100 (0/17'100) |
| Data Steward (20% p.a.) | 27'000 | 27'200 | 40'500 | 20'920 | 6'080 (6'080/0) |
| Library (2.5% p.a.) | 2'790 | 2'790 | 5'580 | - | 5'580 (0/5'580) |
| Professorial staff member (1.25% p.a.) | 3'375 | 3'375 | 6'750 | - | 6'750 (3'375/3'375) |
| Digital learning support (1% p.a.) | 1'900 | 1'900 | 3'800 | - | 3'800 (0/3'800) |
| MATERIAL | | | | | |

| | | | | | |
|-----------------------------------|---------------|---------------|----------------|---------------|---|
| External Workshops | 1'405 | 1'405 | 2'810 | 2'810 | - |
| Internal Workshops | 5'000 | 5'000 | 10'000 | 10'000 | - |
| Project coordination Head CRD | 802 | 802 | 1'604 | 1'604 | - |
| Travel and workshop participation | 1'000 | 1'000 | 2'000 | 2'000 | - |
| Licenses | 1'000 | 1'000 | 2'000 | 2'000 | - |
| TOTAL | 58'897 | 53'010 | 106'020 | 50'254 | 67'540 (31'610/35'930) |

8 Sustainable strategical and financial plans

Open Science is part of the concept of sustainable development at the HfH, under the umbrella term “social responsibility” and will be linked to digitalization strategy and research integrity. This application complies to the ORD strategy of the HfH and approaches establishing data stewardship at the HfH. The application reflects the future of data stewardship as an integral part of the support for research, teaching, and Open Science practice. The anchoring in the research centres and other support units of the HfH allow for sustainable structuring of data stewardship at the HfH. We expect partial return on investment in facilitating and improving quality of research at the HfH and a better integration with research at other institutions. Further, the novel cooperation with other UTE in this multi-project application in Switzerland can, when successful, lead to more synergies of coordinated activities in Open Science.

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