

Plan Overview

A Data Management Plan created using DMPTool

Title: Students Local and International Collaboration for Environment through Innovative Technology

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Students Local and International Collaboration for Environment through Innovative Technology

Data generated by the project

The Data Management Plan should describe the types of data, samples, physical collections, software, curriculum materials, or other materials generated by your project. Any data collection required by the program announcement should be incorporated into the proposal's Data Management Plan. For example, the management of assessment, evaluation, or monitoring data required for all projects within a given program should be addressed in the data management plan. Describe your plan for managing the data.

Data to be generated in this education research program includes student response data to various assessment instruments implemented in context of a *multicenter clinical trial*. Four project schools will be involved, as well as four control group schools, as described in our research plan. Teacher, community and partner assessment data will also be produced in this three year study. Combined, we expect over 60 data sets. Additional research data sets will be produced by assessment analyses, including metadata describing analytics employed. Demographic data sets will also be produced. Data to be generated by education model development includes curriculum, student outcome assessments, survey responses, photo and/or video documentation.

Period of data retention

EHR is committed to timely and rapid data distribution. However, it recognizes that types of data can vary widely and that acceptable norms also vary by scientific discipline. It is strongly committed, however, to the underlying principle of timely access, and applicants should address how this will be met in their Data Management Plan.

Data will be available immediately following processing, quality assurance and documentation by our team.

Data format and dissemination

The Data Management Plan should describe data formats, media, and dissemination approaches that will be used to make data and metadata available to others. Policies for public access and sharing should be described, including provisions for appropriate protection of privacy, confidentiality, security, intellectual property, or other rights or requirements. Research centers and major partnerships with industry or other user

communities must also address how data are to be shared and managed with partners, center members, and other major stakeholders. Data on EHR projects involving human subjects should be made available to the public subject to constraints imposed by IRB decisions. Other data, such as software, publications, and curricula, should be made available subject to intellectual property rights.

We will employ comma separated .csv formats that are easily imported to Matlab, Excel, SAS and similar statistical software. Metadata will be provided in pdf form to preserve content integrity. Because our research involves human subjects as per learning and attitude assessments, including demographic information, Boise State University Institutional Review Board Full Board application applies to approval of our assessment instruments, surveys and interview scripts.

Data storage and preservation of access

The Data Management Plan should describe physical and cyber resources and facilities that will be used for the effective preservation and storage of research data. These can include third party facilities and repositories.

The research data from this project will be deposited with the Boise State repository, comprised of scalable virtual servers and dedicated research data storage, to ensure that the research community has long-term access to the data. The Office of Information Technology has built a dependable virtual server infrastructure and Network Attached Storage to provide a predictable cost-based, managed and reliable platform. The virtual servers run on Cisco UCS server hosts which have VMWare ESX virtualization platforms. The storage for virtual machines is on Netapp Filers. The Research Data Storage Facility provides a high integrity space for storing data using enterprise-class equipment. This storage is provided by redundant Digiliant devices presenting CIFS shares authenticated against Active Directory, as well as secure SCP and Globus Toolkit GridFTP protocols. Storage is configured using LVM and can be expanded as needed. Data will be replicated from the primary Digiliant to a second device using CommVault. Best practice standards for data backup and retrieval will be followed.

Additionally, the PI will work with members of Boise State's Albertsons Library to identify permanent data storage and preservation options, utilizing publicly accessible repositories when appropriate.

Additional possible data management requirements

More stringent data management requirements may be specified in particular NSF

solicitations or result from local policies and best practices at the PI's home institution. Additional requirements will be specified in the program solicitation and award conditions. Principal Investigators to be supported by such programs must discuss how they will meet these additional requirements in their Data Management Plans.

The website that we will develop for this education program will include a research blog and links/contacts for easy routing to our data and products.
