Plan Overview

A Data Management Plan created using DMPonline

Title: Pilot study of Eco-Design in Action: A Graphic Design Sustainability Toolkit in UK Higher Education

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Template: DCC Template

Project abstract:

This pilot study aims to validate and deepen the findings of a literature review on the integration of sustainability into graphic design pedagogy in UK higher education. Firstly, I seek to understand how a focus on sustainability is implemented in practice in graphic design courses and curricula. I also aim to identify the challenges and opportunities educators and students face in embedding sustainable practices, thereby enhancing the learning experience. A key aspect of my research is addressing the existing literature's contradictions regarding the depth of sustainability integration in graphic design education and seeking stakeholders' views on achieving a transformative impact. In addition, I plan to explore the lack of comprehensive research on this topic within the UK higher education context, with the aim of contributing to this under-researched area. I will focus on the potential of toolkit development and interdisciplinary collaborations to enrich sustainability education within graphic design. I intend to gather views on developing a sustainability toolkit tailored to the UK higher education environment, with a particular focus on its design, utility and potential impact on pedagogical practice. Finally, my study aims to gather data that will inform future research directions and the practical development of resources to support sustainable graphic design pedagogy. This comprehensive approach aims to provide insights into the practical, theoretical and pedagogical dimensions of sustainability practice in graphic design, supporting both academic and practical fields.

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Copyright information:

Pilot study of Eco-Design in Action: A Graphic Design Sustainability Toolkit in UK Higher Education

Data Collection

What data will you collect or create?

Type of Study:
The project will involve stakeholders in HE environments, including three design educators, three researchers, and three students.

Types of Data:
The data from these experiments will be qualitative, and this pilot study focuses on semi-structured interviews to gain in-depth insights into the integration of sustainability in graphic design pedagogy within UK Higher Education (HE).

Format and scale of the data:
Qualitative data will be recorded and stored electronically before being transcribed and stored in electronic format (PDF or MS Word).
Audio (.wav; 44.1 kHz, 16-bit depth, stereo): Recorded with Loughborough University's Blue Yeti Nano microphones into a laptop running Audacity (free/open sauce DAW). PI (PARKER) will use Audacity to process audio (i.e., normalise the volume, reduce reverb, and adjust EQ for clarity where required).
Text (.txt): Written with Microsoft Word v16 or later.
I estimate my project data includes 9 hours of interview audio recordings (.wav, estimated size = 13 Gb), transcribed verbatim (.txt = 2Mb).

How will the data be collected or created?

Methodologies for data collection/generation:
The semi-structured interview in the pilot study will generate data. Data will be collected manually by project staff, e.g. interviews will be audio-recorded and transcribed verbatim to ensure accuracy in data analysis. Transcripts will be anonymized to protect participant identity.
Data quality and standards:
Data files generated will be labelled appropriately and placed in suitably labelled/organised folders and sub-folders so that it is obvious which interview (anonymized) participant and condition that data originated from, allowing easy access and identification of files. Different versions of a data subset will be distinguished via a subscript (v1, v2, final, etc) attached to the file name.

Documentation and Metadata

What documentation and metadata will accompany the data?

Managing, storing and curating data:
LU use University provided Microsoft storage solutions, ensuring data does not leave 'EU data protection adequacy' approved countries and programmes. LU's default storage option is Office 365 One Drive and Office 365 Groups for external collaborations. One Drive documents are synchronised between research computers and Microsoft OneDrive in the cloud. This data is kept securely in Microsoft data centres, currently in Ireland (Dublin) and Amsterdam (Schipol). All LU computers are password-protected to individual IT accounts.
Metadata standards and data documentation:
Contextual and explanatory files will be created and stored in step with data collection to facilitate understanding of the data. Methodologies, data collection procedures and analysis processes will be documented and annotated clearly. These should enable the recreation of the interview procedures and make the collected data understood within that context. Qualitative data will have demarcated speech and speaker identification.
Data preservation strategy and standards:
Data will be stored for at least 3 years using LU One Drive and the LU data repository.   Data preservation processes will be achieved within the duration of this PhD project and overseen by the PI and RA.

Ethics and Legal Compliance

How will you manage any ethical issues?

Formal information/data security standards:
Loughborough University's use of Microsoft OneDrive and Office 365 Groups is backed by the Higher Education sector-wide contract with Microsoft managed by Jisc. Ethical approval is obtained from the Loughborough University Ethics Committee. I will inform the study's purpose, their right to withdraw, and the confidentiality of their responses to participants. Informed consent will be obtained before the interviews.

How will you manage copyright and Intellectual Property Rights (IPR) issues?

I will use Creative Commons media through our project (e.g., promotional images) wherever possible. Where this is not possible, the PI will obtain copyright clearance from the copyright holders of any data I reuse and publish at the end of the project.
I will share all our archived data under a Creative Commons (Attribution 4.0 International) license.
I do not work with external partners or commercial organisations to necessitate contracts or agreements.

Storage and Backup

How will the data be stored and backed up during the research?

The data will be stored on the secure University file space using Microsoft OneDrive. Each researcher is initially allocated 1TB of space and can request unlimited additional storage. Their My Documents folder on each Windows computer is automatically synchronised with Microsoft OneDrive. One Drive has a version history for up to 30 days. Details of this storage can be found on the Loughborough IT web pages.
Any data collected in the field will be stored on the PI's laptop and backed up daily to an encrypted external hard drive before being transferred to Microsoft OneDrive as soon as wireless connectivity is made. All sensitive data will be stored on the PI's encrypted laptop and backed up to an encrypted hard drive, which will be held in a locked filing cabinet in a separate room from the computer. This centre is fully secure and backed up daily. The team will access the data via a secure VPN connection.
The PI will back the data weekly onto an encrypted external hard drive, which they will keep separately from the office PC and PI's laptop. Loughborough IT services are provided from two on-site LPS 1175 compliant data centres and several ISO 27001 accredited cloud suppliers with specific data sharing agreements and model clause contracts. An appropriate number of security controls protects the infrastructure, is subject to regular penetration testing, and has achieved the UK government Cyber Essentials Plus certification.

How will you manage access and security?

Minimal risk of theft or loss of laptop or temporary external storage (e.g. USB transfer between office and RA computers). Offices are locked when unoccupied, and a key card accesses the building outside of hours. Computers are password-protected with a short (2-minute) screen lock, and external storage devices will be password-protected and encrypted. Data transfer between institutions should be via secure Office 365 Groups cloud.

Selection and Preservation

Which data are of long-term value and should be retained, shared, and/or preserved?

In determining what data from my research into sustainable graphic design practices is of long-term value and should be retained, shared or preserved, I will consider legal and ethical obligations and the potential for future use. Data that must be retained or destroyed for contractual, legal or regulatory reasons will include all information collected during ethical application processes, interviews and design practices, ensuring compliance with data protection laws and ethical standards. The decision on what other data to retain should be guided by its potential to validate my research findings, contribute to new studies or enhance the teaching of sustainable design practices. Foreseeable uses of this data include validating the effectiveness of the developed toolkit, informing future research in sustainable practices and enhancing the educational content in higher education. It is anticipated that the data will

be retained at least until the completion and validation of this three-year PhD project. However, given the evolving nature of sustainability and design, longer-term retention could benefit ongoing academic and practical applications. This decision should balance the potential re-use value of the data against the economic viability and additional effort required for data preparation, such as anonymisation or format conversion, for sharing and preservation.

What is the long-term preservation plan for the dataset?

The project will comply with the Data Protection Act 2018 (DPA) requirements and University policies. All data the DPA covers will be encrypted and kept on secure Microsoft OneDrive. Data collection in the project will start only after gaining ethical approvals. Before data collection, all participants will be given an information sheet explaining the purpose of the data collection. They will be asked to sign a consent form granting the project the right to store and share their data. They will be given information to leave the data collection method adopted (e.g., interviews) at any time.
Collected raw data will be stored in the university-approved facilities in partner universities. A master copy will be created in the shared drive of the PI's university. The user-identifiable data will be available only to the project team. A confidentiality agreement will be used for non-disclosure if and when they are shared with external parties (e.g., for transcription).
This project does not have commercial partners to request or collect sensitive or confidential data.

Data Sharing

How will you share the data?

The data will be registered in the LU data repository (https://repository.lboro.ac.uk/).

Are any restrictions on data sharing required?

Restrictions to data sharing (e.g. with competitors) will be in place wherever necessary to ensure novelty for publication or ,where appropriate, to protect IP. Data will be anonymised and may be aggregated if shared before publication. Data sharing will be in accordance with those set our in informed consent, in turn in accordance with LU and TU research ethics.

Responsibilities and Resources

Who will be responsible for data management?

Along with the PI, academic members of the project team will be responsible for study-wide data management, metadata creation, data security and data quality assurance. The University Research Data Management team will be able to advise on best practices in data management and security.

What resources will you require to deliver your plan?

In order to effectively implement the data management plan for this research into sustainable graphic design practices, several key resources will be required.   Firstly, additional expertise or training for the researchers may be required, particularly in the areas of data curation, digital preservation and ethical data handling, to ensure that the team is equipped to effectively manage and preserve the dataset. Secondly, training on the nvivo software may be required. Thirdly, training in advanced data storage solutions, data anonymisation and format conversion software, and metadata creation and management tools may also be required.