C24M/22/029 - REFL³ECT

A Data Management Plan created using DMPonline.be

Creators: Greet Langie, n.n. n.n., n.n. n.n., n.n. n.n.

Affiliation: KU Leuven (KUL)

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Principal Investigator: Greet Langie, n.n. n.n., n.n. n.n., n.n. n.n.

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Project abstract:

Flanders is in need of citizens who are eager to learn throughout their lives. Higher Education Institutions have a great responsibility in this regard: each student should have lifelong learning (LLL) competencies when graduating. This is no different for engineering students, unfortunately there is no scientifically supported framework to define the complex LLL competency for engineers. REFL³ECT will tackle this gap, since we will (1) develop in co-creation with academics and industry a LLL framework, (2) determine the growth of both students' attitudes towards LLL and self-regulation, and (3) develop in co-creation LLL interventions, focusing on self-regulation. The three engineering faculties of KU Leuven have committed themselves to having their students questioned on the subject and to setting up pilots. The developed research-based instruments will be ready-to-implement with the necessary supporting manuals, freely available on the project website.

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Research Data Summary

List and describe all datasets or research materials that you plan to generate/collect or reuse during your research project. For each dataset or data type (observational, experimental etc.), provide a short name & description (sufficient for yourself to know what data it is about), indicate whether the data are newly generated/collected or reused, digital or physical, also indicate the type of the data (the kind of content), its technical format (file extension), and an estimate of the upper limit of the volume of the data.

Dataset name / ID	Description	New or reuse	Digital or Physical data	Data Type	File format	Data volume	Physical volume
		Indicate: **N**(ew data) or **E**(xisting data)	Indicate: **D**(igital) or **P**(hysical)	Indicate: **A**udiovisual **I**mages **S**ound **N**umerical **T**extual **M**odel **SO**ftware Other (specify)		Indicate: <1GB <100GB <1TB <5TB >5TB NA	
SLR WP1-1	overview of Journal articles related to LLL competencies	E	D	T	Excel	<1GB	
Delphi study WP1-2	online survey of academic experts and experienced professionals	N	D	N and T	Excel, SPSS and R	<1GB	
SRIS WP2-1	online survey of engineering students, based on validated questionnaire developed by Grant et al (2002)	N	D	N and T	Excel, SPSS and R	<100GB	
Reflective Journals WP2-2	reflective journals written by students	N	D	T	Word, Nvivo and Excel	<100GB	
in-depth interviews WP2-3	in-depth interviews with students	N	P and D	T	Audio-recorded and transcribed into MS Word, Nvivo and Excel	<100GB	
SLR WP3-1	overview of Journal articles related to the training of LLL competencies	E	D	T	Excel	<1GB	
User need analysis WP3-2	Focusgroup or interviews in the context of a user need analysis	N	P and D	T	Audio-recorded and transcribed into MS Word, Nvivo and Excel	<100GB	
user feedback WP3-3	Focusgroup or interviews in the context of user feedback	N	P and D	T	Audio-recorded and transcribed into MS Word, Nvivo and Excel	<100GB	

If you reuse existing data, please specify the source, preferably by using a persistent identifier (e.g. DOI, Handle, URL etc.) per dataset or data type:

Two systematic literature reviews (SLR) will be part of the output of this project. These SLR's are based on existing papers collected with the help of Scopus.

Are there any ethical issues concerning the creation and/or use of the data (e.g. experiments on humans or animals, dual use)? If so, refer to specific datasets or data types when appropriate and provide the relevant ethical approval number.

- Yes, human subject data (Provide SMEC or EC approval number below)

We have ethical approval for the data collection "SRIS WP2-1": ***G-2022-5676-R2(MIN).***
We will apply for ethical approval for the other data collections involving human participants:

- Delphi study - WP1-2
- Reflective Journals - WP2-2
- In-depth interviews - WP2-3
- User need analysis - WP3-2
- user feedback - WP3-3

Will you process personal data? If so, please refer to specific datasets or data types when appropriate and provide the KU Leuven or UZ Leuven privacy register number (G or S number).

- Yes (Provide PRET G-number or EC S-number below)

We have ethical approval for the data collection "SRIS WP2-1": ***G-2022-5676-R2(MIN).***
We will apply for ethical approval for the other data collections involving personal data of human participants:

- Delphi study - WP1-2
- Reflective Journals - WP2-2

Does your work have potential for commercial valorization (e.g. tech transfer, for example spin-offs, commercial exploitation, …)? If so, please comment per dataset or data type where appropriate.

- No

Do existing 3rd party agreements restrict exploitation or dissemination of the data you (re)use (e.g. Material or Data transfer agreements, Research collaboration agreements)? If so, please explain in the comment section to what data they relate and what restrictions are in place.

- No

Are there any other legal issues, such as intellectual property rights and ownership, to be managed related to the data you (re)use? If so, please explain in the comment section to what data they relate and which restrictions will be asserted.

- No

Documentation and Metadata

Clearly describe what approach will be followed to capture the accompanying information necessary to keep data understandable and usable, for yourself and others, now and in the future (e.g. in terms of documentation levels and types required, procedures used, Electronic Lab Notebooks, README.txt files, codebook.tsv etc. where this information is recorded).

We will provide documentation in the following way:

1. **Quantitative data - SLR's** (WP1-1 and WP3-1): a codebook will accompany the collected information, to explain the meaning of the different columns in the Excel.
2. **Quantitative data - surveys** (WP1-2 and WP2-1): a codebook will accompany the collected data, containing the date the survey was organized, the population, the setting, variable information, etc.
3. **Qualitative data - interviews and focusgroup discussions** (WP2-3, WP3-2 and WP3-3): each original and transcribed audiorecorded file will be accompanied by a standardized overview sheet containing the following elements: date, setting, participants, informed consent, implemented guidelines, etc..
4. **Qualitative data - reflective journals** (WP2-2): the Word document with the overview of the reflective journals will be accompanied by a standardized overview sheet containing the following elements: name student, setting, informed consent, guidelines, etc.

This documentation will be kept in the same folder as the data. The name of the folder will contain the dataset name and the date.
We will anonimise our data where possible, pseudonomise where necessary for longitudinal follow up and work with the non-anonimised data if pseudonomised data is really insurmountable in the long run. The file with the participants ID's in the case of pseudonomised data will be in the appropriate folder.

Will a metadata standard be used to make it easier to find and reuse the data?
If so, please specify which metadata standard will be used.

If not, please specify which metadata will be created to make the data easier to find and reuse.

- Yes

It's our goal to use a project-specific metadata standard to guarantee a feasible, efficient and effective DMP. This metadata standard will be based on DDI and it will be determined by mutual agreement within the project group before the first data are collected.

Data Storage & Back-up during the Research Project

Where will the data be stored?

- Shared network drive (J-drive)
- OneDrive (KU Leuven)

Since we will be working with sensitive personal data that will be pseudonymized (or anonymized where possible), the data will be stored at the university's secure environment for private data: the j-drive of KU Leuven.
A working copy for analyses will be stored at the private REFL³ECT-channel within the KU Leuven Teams environment of the research group FIIW-ETHER, that is only accessible for the researchers of the project.

How will the data be backed up?

- Standard back-up provided by KU Leuven ICTS for my storage solution

Is there currently sufficient storage & backup capacity during the project?

If no or insufficient storage or backup capacities are available, explain how this will be taken care of.

- Yes

How will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?

The j-disk on the university's central servers is a secure environment. Also 'Teams' is a KU
Leuven environment with restricted accessibility.

What are the expected costs for data storage and backup during the research project? How will these costs be covered?

We do not expect costs for data storage and backup during the project.

Data Preservation after the end of the Research Project

Which data will be retained for 10 years (or longer, in agreement with other retention policies that are applicable) after the end of the project?

In case some data cannot be preserved, clearly state the reasons for this (e.g. legal or contractual restrictions, storage/budget issues, institutional policies...).

- All data will be preserved for 10 years according to KU Leuven RDM policy

Where will these data be archived (stored and curated for the long-term)?

- Shared network drive (J-drive)

What are the expected costs for data preservation during the expected retention period? How will these costs be covered?

There are no expected costs.

Data Sharing and Reuse

Will the data (or part of the data) be made available for reuse after/during the project?
Please explain per dataset or data type which data will be made available.

- Yes, as restricted data (upon approval, or institutional access only)

All collected data will remain available for future reuse after the end of the project for the
members of the research unit.
Future reuse by the broader scientific community is only possible after anonymisation of the data since we will be working with sensitive personal data.

If access is restricted, please specify who will be able to access the data and under what conditions.

- The members of the research unit FIIW-ETHER will have access to the data.
- The members of the broader scientific community will have access upon request after signing a data sharing agreement and after anonymisation of the data.

Are there any factors that restrict or prevent the sharing of (some of) the data (e.g. as defined in an agreement with a 3rd party, legal restrictions)?

Please explain per dataset or data type where appropriate.

- Yes, ethical aspects

The data contains personal information.

Where will the data be made available?

If already known, please provide a repository per dataset or data type.

- Other (specify below)

We do not know yet which repository we will select at the end of this 4-year project. Things might change in the meantime.
But since our work contains sensitive data, it might be KU Leuven RDR.

When will the data be made available?

- Upon publication of research results

Since the analysis of the collected data will result in a PhD thesis, the data will only become available after the publication of the PhD thesis.

Which data usage licenses are you going to provide?

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If none, please explain why.

- CC-BY 4.0 (data)

Do you intend to add a persistent identifier (PID) to your dataset(s), e.g. a DOI or accession number? If already available, please provide it here.

- No

What are the expected costs for data sharing? How will these costs be covered?

There are no costs at this moment.

Responsibilities

Who will manage data documentation and metadata during the research project?

The final responsible is the project promotor.
The PhD student and postdoc will continuously collect data, copy it on the KU Leuven Teams of the research group 'FIIW - ETHER' and add the necessary metadata based on the 'standardized overview sheet' and the 'codebook'.
The format of the standardized overview sheet and the codebook will be discussed and finalized in full agreement with all members of the project team.

Who will manage data storage and backup during the research project?

The final responsible is the project promotor.
When a publication of some intermediate research results is accepted, the PhD student and postdoc will copy the considered data for the long term on the j-disk. This secures a systematic follow-up of the collected data, such that all data are securely stored at the end of the project.
The backup is an automatic process.

Who will manage data preservation and sharing?

The final responsible is the project promotor.

Who will update and implement this DMP?

The final responsible is the project promotor.