Guidelines for the Students' Projects and Research Reporting Formats

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Overview of the Guidelines by **Iulianna van der Lek**

Tracking Students' Projects by **Tanja Samardžić**

Students' Projects

- Carry **1-3 ECTS** (25-75 hours of study)
- Addition to the learning content created in T3.2
- **Aim**:
  - ➔ Encourage students to apply the **acquired skills and techniques in an independent research project**.
  - ➔ The lecturer provides no or very limited intermediate feedback.
  - ➔ Can be mandatory, optional or a full-fledged course
  - ➔ Students can showcase their project on the UPSKILLS website

A draft version of the **Guidelines** is available here!

Overview of the Guidelines

Relevant sections:

3.1. Project outline and timeline

3.2. Research-report template with explanatory comments

4. Evaluation and grading

5. Formats for research reporting

Annex: Template for project description

Defining the Learning Outcomes

Students will be able to:

- **apply the research skills and techniques** acquired in the course
- implement established conventions in research reporting, such as
  - the ordering of thematic units in an article/report,
  - clarity of statements,
  - organization of the presentation,
  - amount of text and graphical items on a slide/handout,
  - terminology,
  - citing conventions.

UPSKILLS Research-based teaching guidelines (Simonović et al. 2022)

Selecting the Research-Reporting Format for the Final Deliverable

- Research report + presentation slides
- Blog post + video recording
- Poster presentation or infographic
- Interactive report in the form of a mini-website

- Who is the target audience, a specialised audience or a broad audience?
- Which elements from the research report would be most interesting for the audience, e.g. the methodology, the tools, the dataset?
- How to structure the delivery format (be it text or video) to convey the desired message?

Selecting the Research-Reporting Format for the Final Deliverable

Why use a combination of formats?

- Help students engage with the wider research community and potential future employers
- Students learn to distil complex research
- Good research reporting skills are required in the workplace
- Encourage young people to take an interest in science

Creating Instructions for Students

Provide guidance on the general steps in the research process and a clear timeline:

1. Identifying the problem
2. Reviewing literature
3. Setting research questions, objectives, and hypotheses
4. Choosing the study design
5. Deciding on the sample design
6. Collecting data
7. Processing and analyzing data
8. Report on the findings using the format recommended by the teacher
9. Archiving the research outputs (presentation, report, datasets etc.)

Research-report Template with Explanatory Comments

1. Introduction:
- definition/description of the phenomenon
[Short definition/description by the lecturer or
instructions in which domain the target phenomenon should be looked for and how the choice should be justified.]

- preliminary research question: what do you want to find out about this phenomenon or
- preliminary definition of a research problem: what is it that you want to solve
[Defined by the lecturer or
instructions on how it should be defined (if possible using examples from the course).]

- motivation: why does the society (or at least your research community) need to know about your study
[If necessary, a good example of what counts as a good argument (if possible using examples from the course).]

2. The goal:
- precise definition of what you try to achieve
[Defined by the lecturer or
instructions on how it should be defined (if possible using examples from the course).]

- why this is not trivial
[If necessary, a good example of what counts as a good argument that something is not trivial (if possible using examples from the course).]

3. State of the art:
- what is already known about the phenomenon
[Explicit references to the course literature or other familiar references, or
list of references to be used, or
leaving it to the students to find the relevant literature]

4. Your approach:
- your research question/problem
[If necessary, a good example (if possible, from the course) of what counts as a good research question.]

- expected or possible answers (hypotheses)/proposed solutions (in case of a research problem)
[If necessary, a good example (if possible, from the course).]

5. Data and methods:
- what research data/datasets you use
[Predefined or
specifying that this choice should be justified.]

- how you decided what you need
[Remove if the dataset is predefined.]

- how you looked for any suitable existing research data/datasets
[Remove if the dataset is predefined.]

- if no suitable existing research data/datasets were identified, describe how you collected it yourself
[Specifying that this choice should be justified.

Remove if the dataset is predefined.]

- how you organised the research data
[Predefined or specifying that this choice should be justified.

Research-report Template with Explanatory Comments

Basic RDM Guidelines

- how you archived the dataset and where it can be accessed

[What should the students do with the datasets after the projects?

Option 1: Archive it in the institutional repository.

Give clear instructions on what the students should do and include the relevant links.

Option 2: Deposit it in a public repository to make it available to the research community. Instructions for the students: first, search for a repository, read the requirements for depositing data, prepare the datasets for sharing, deposit the datasets and select an appropriate license. If the students publish their research report, they can link the datasets to their article.]

Evaluation and Grading

Evaluation form for research reports that can be adapted for other reporting formats as well

Step 1 Give a grade on each of the criteria below that apply to work produced in your course. **Step 2** Give the final grade.	
Criterion	Grade
General	
Comprehensibility Is the output comprehensible for the intended audiences (e.g., can a group of students present their research in a way comprehensible to other students)?	
Coherence Is the output internally coherent (no contradictions, consistent terminology etc.)?	
Exploiting conventions Does the output use the conventions typically used in the field?	
Research-related	
General understanding of the research design Does the output reflect a clearly defined and plausible research design?	
Formulation of research questions and hypotheses Are the research questions and hypotheses clearly defined in terms of variables?	
Formulation of predictions of the null hypothesis and alternative hypothesis Are the predictions of the null hypothesis and alternative hypothesis clearly defined?	

Tracking Research Projects

WHY

- To optimise teachers' feedback:
  - students can't learn if they work entirely on their own
  - too many or too specific instructions not good for students' independence
- To understand better the process of research and problem solving
- To ensure continuous progress over the course of a project

HOW

- Students fill in multiple versions of the research report template
- Teachers provide (short) feedback on each version
- The number of versions is agreed at the beginning of the project

Multiple versions (example 4 versions, simplified)

Time step 0	Time step 1	Time step 2	Time step 3
Goals	Goals	Goals	Goals
Literature	Literature	Literature	Literature
Data, methods	Data, methods	Data, methods	Data, methods
Analyses, results	Analyses, results	Analyses, results	Analyses, results
Conclusion	Conclusion	Conclusion	Conclusion
Feedback 0	Feedback 1	Feedback 2	**Grade**

Infrastructure

Currently

a folder with a number of Markdown files, one file per version, time step (the date) in the name of the file

In the future

a web service featuring editable HTML templates

offline package to stay as an option

Notes from the first pilot

Project: *Dependency parsing for Swiss German* (BA thesis at the UZH)

- Timeline needed in the time step 0
- Needed to adapt the template for problem-solving (no RQ)
- Moving the content between the categories
- Helped speed up writing
- Didn’t manage to get regular reports
- Fast feedback extremely important!