Your iterative method to lead research

Let the doctoral students speak: *« Very structuring tool that initiates reflection » ; « Very instinctive and interesting tool »*

When: It is to be done as preparatory work at the beginning of the thesis. This document is to be used with the guide « How to specify the objectives of the thesis work and initiate the collaboration between doctoral student and thesis supervisor … ».

Why: It allows doctoral students to discover the tasks that will be his/her during the thesis and to organize this thesis work between the doctoral student and the supervisor thesis. In order to get the best out of it, it is advisable to do it as a doctoral student and supervisor pair.

Inputs: To structure the thesis work and visualize the main steps and tasks related to each of them.

Presentation of the guide:

The guide contains

•A board (see slide 2): 5 frames are presented according to the differents steps of the conducting research.

•Tasks (see slide 3): 72 tasks are proposed. Users will come and place them in the frames according their own iterative method of conducting research.

•Stickers: 2 kinds of stickers are available. The red stickers refer to tasks perceived as blocking or very difficult. The orange stickers refer as risky or difficult.

•Pictograms (see slide 3): 2 kinds of pictogram are proposed on a certain tasks to highlights because they can be specific to certain disciplines. The pictogramme « » is put on the tasks referring to those involving human participants during the experimentation. The pictograme « » is put on those referring to the tool associated tool with the scientific contribution.

Material to be built from slides 1 and 2

•Print slides 2 et 3 on A3 sheets

•Cut out the tasks

How to use this material: work to be done in pairs (doctoral student/supervisor ou doctoral student/doctoral student)

•Read the tasks, discuss them

•Put them in one of the proposed frameworks

•Add stickers on tasks perceived as blocking or risky

•If needed

    – *You can changer the name of the 5 frames*

    – *You can make subparts in the 5 frames*

    – *You can add tasks, change them or not use them*

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Install and manage the scientific and technical framework
To follow the problematic. Propose a contribution

Communicate results to the scientific community

Testing, experimenting the contribution and/or the associated tool

Conclude on experimentation. Improve the contribution and/or the associated tool

THEDRE

Analyze and interpret the data produced in the experimentation

Stop

Your iterative method to lead research

Obtain a reference literature	Study the scientific context	Study the technical context	Identify the social and economic impact	Select and describe the study area and the users involved	Identify the kind of scientific contribution to be produced	Designing the associated tool to support scientific contribution	Split associated tool into associated components	Elaborate objective indicators and potential risks	Identify the technical equipment available	Know the basic procedures for filing data	Know the technical devices and software available in the laboratory	Diagram work organization	Have a list of journals and conferences in the field	
Specify the profile of users and their involvement	Define experimental objectives	Write hypotheses or experimental questions	Identify the measures to be taken and data to be produced	Choose and justify the methods of data production	Create or develop the associated tools or components	Create or develop the experimental set-up and materials	Write an experimental protocol	Declare experimentation GPRD and ethics	Recruit users	Write the consent form	Carry out a pilot experiment	Do the experimentation	Check the logistics and organization of the experimentation	Study experimental biases
Validate the data produced	Archive the data produced	Correct and enrich the data produced	Checking the objective indicators and the difficulties encountered	Analyzing the results	Interpret results according to research questions	Write the results	Write the thesis	Processing the data	Finding ways to represent results	Schematize the results	Imagining the contribution	Write the thesis	Identify available data	
Identifying the contributions of experimentation	Repositioning in relation to the academic and technical context	Formalizing scientific contributions	Make the decision to report results	Make the decision to stop the process	Make the decision to deepen the contribution and/or the associated tool	Write the thesis	Prepare the thesis defence	Provide the thesis pot	Constitute the thesis jury	Identify in the scientific literature the precise field	Identify related work in the scientific literature	Construct or refine the problem and associated research questions	Write the problematic	
Write an article in accordance with journal and conference recommendations	Submit the article on time	Review article after feedback from reviewers, journals and conferences	Resubmit the article on time	Prepare the presentation of the article	Relying on feedback from reviewers, journals and conferences to advance its research question and scientific contribution	To defend the thesis	Deposit the thesis in the archive of the doctoral school	Write the thesis	Write the thesis	Scripting the experimentation	Identify the limits of the experimentation	Preparing the experimentation	Write the annual thesis follow-up reports for the doctoral school	Describe the reasons why users will be involved (explore, co-construct, evaluate, …)