

Thesis – overview and examples from Wageningen University

Wageningen DEEM team

Mattijs Smits, mattijs.smits@wur.nl

Omid Noroozi, omid.noroozi@wur.nl

Hansje Eppink, hansje.eppink@wur.nl



Contents

- What is a thesis?
- Types of theses
- Constructive alignment for thesis
 - Learning outcomes
 - Learning/teaching activities
 - Assessment (criteria + rubrics)
- Picking a topic, timeline, activities and products
- Thesis guidelines
- Exercise: develop overview of (your own) thesis trajectory
- Optional:
 - first meeting
 - thesis rings

What is a thesis?

- Independent (or group) academic work
- Focus on theoretical and empirical application/innovation
- Usually in the final phase of an academic programme



THESIS WRITING IN
PROGRESS
DO NOT DISTURB

What is a thesis?

- Is a thesis:
 - A proof of competence? (show a student masters certain research skills)
 - A learning activity? (a part of the student curriculum)
 - A research activity? (doing a (small) research project)

- Discuss in small groups

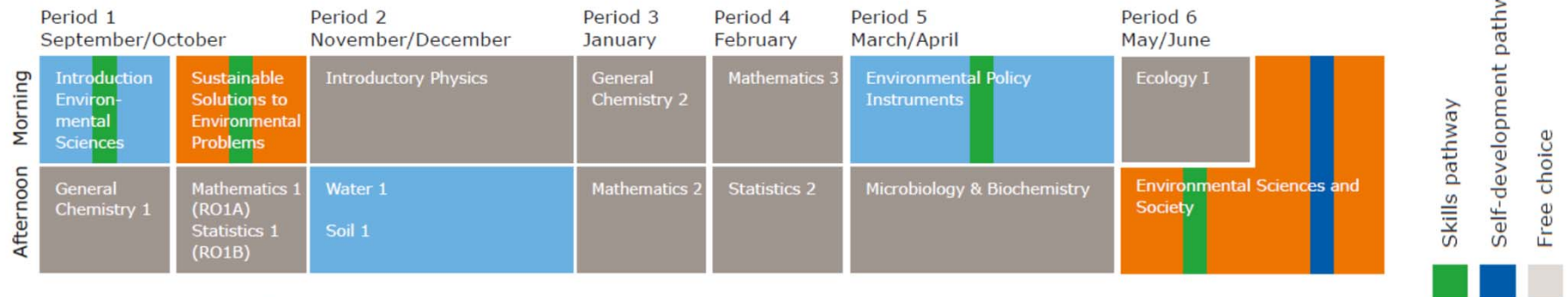
Types of theses

- Different phases of a programme:
 - BSc thesis (2 months)
 - MSc
 - Major thesis (6 months)
 - Minor thesis (3-4 months)
 - PhD thesis

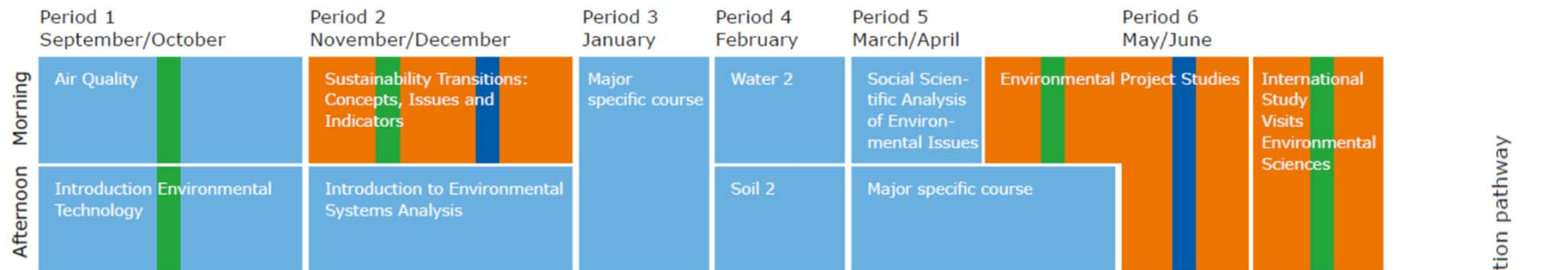
- Place for thesis work:
 - At university
 - In company

Position of thesis in BSc curriculum (example BSc Environmental Science)

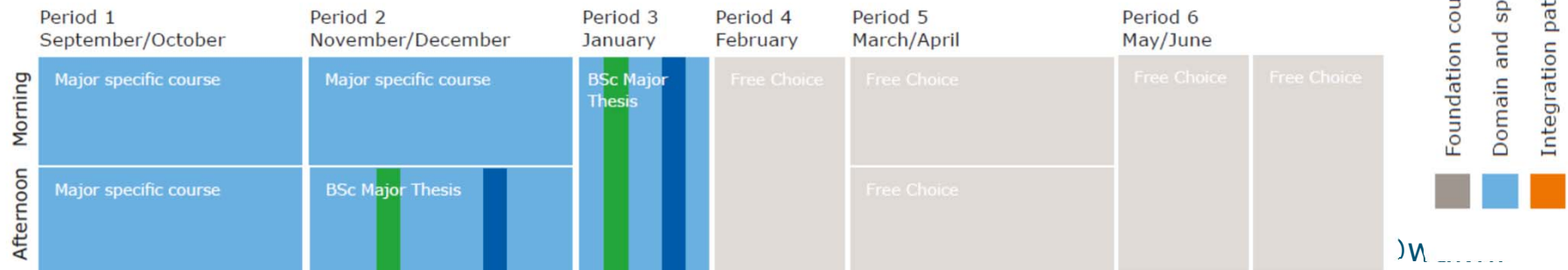
First year (start in September)



Second year (start in September)

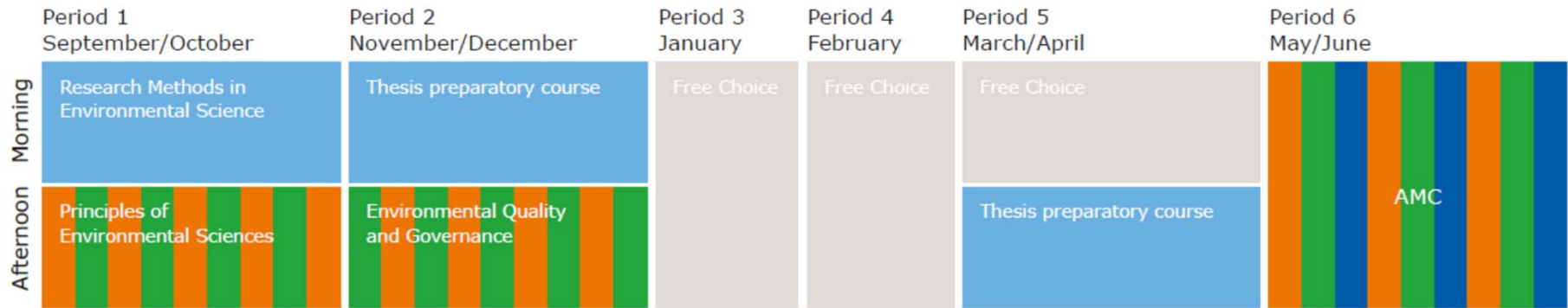


Third year (start in September)

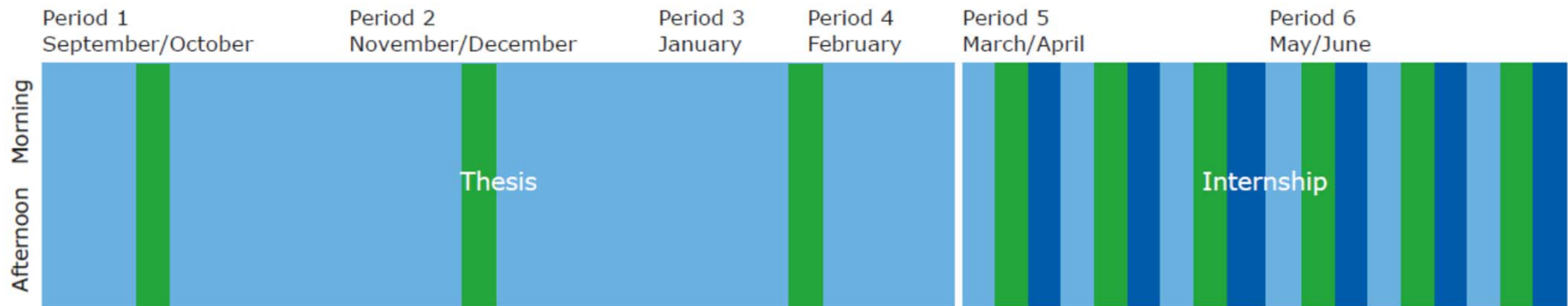


Position of thesis in MSc curriculum (example MSc Environmental Science)

First year

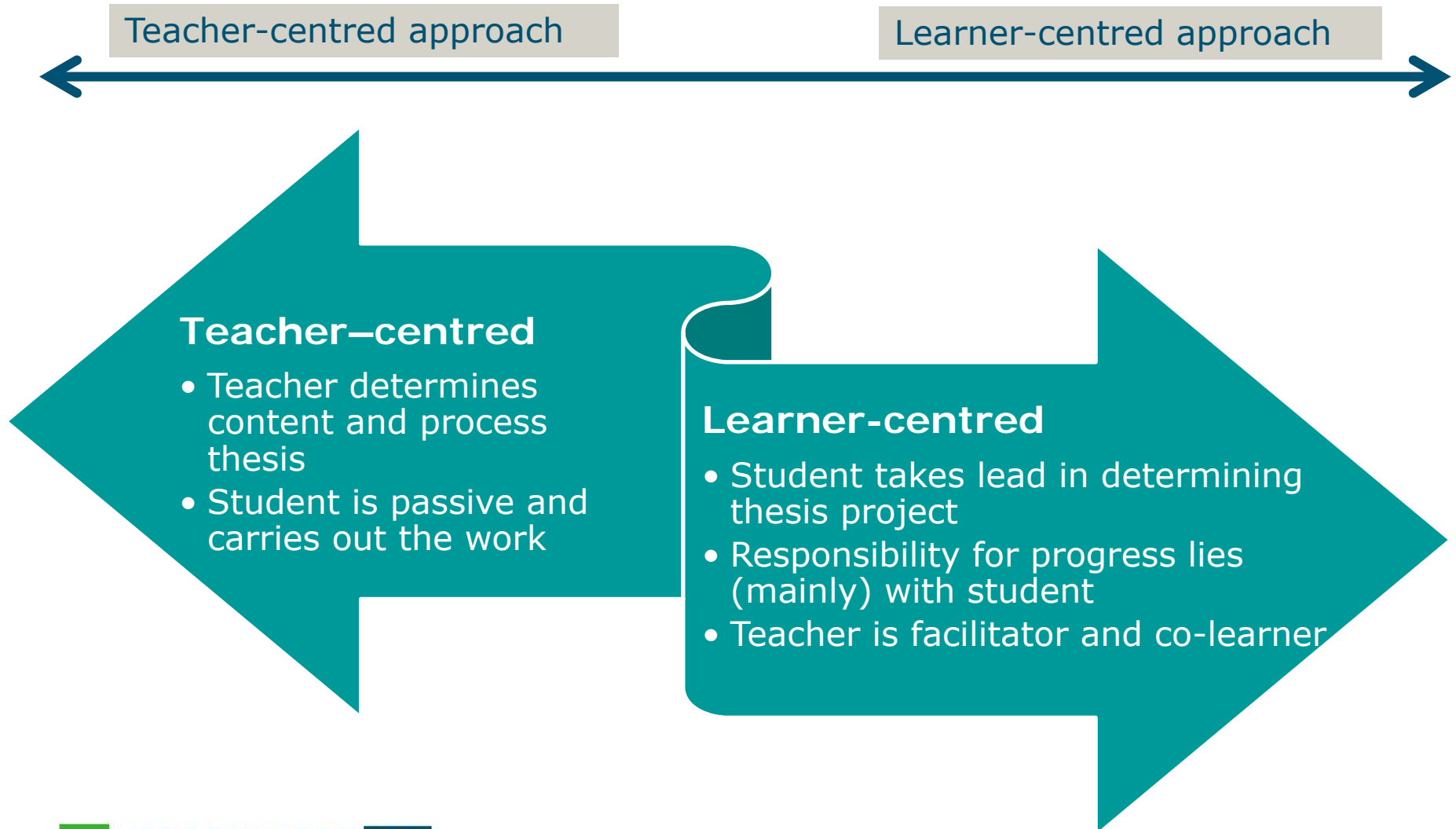


Second year

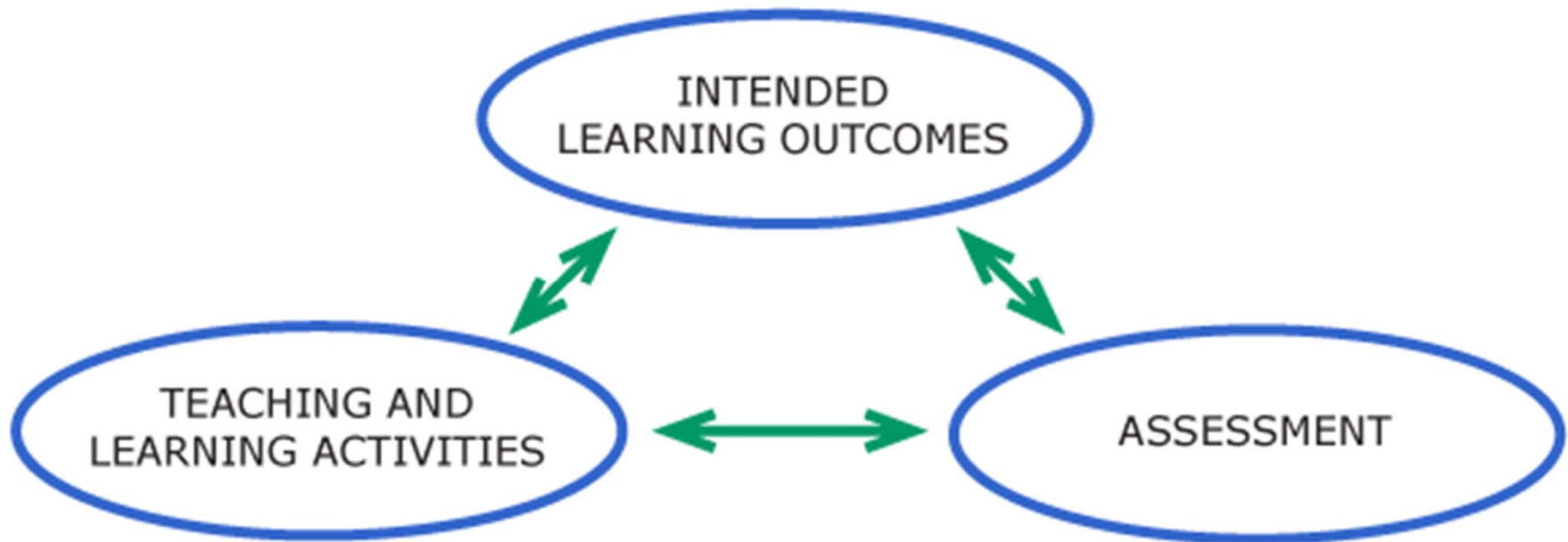


- Integration pathway
- Specialisation pathway
- Skills pathway
- Self-development pathway
- Free choice

Recap: teacher/student-centred



Recap: constructive alignment



Can be applied to all courses/parts of curriculum, including thesis and internship

Intended learning outcomes

Learning goals (example from BSc thesis):

- After finalising the thesis / extended essay, students are able to:
 - formulate a research problem and do (literature) research according to scientific standards;
 - integrate and apply theoretical knowledge obtained in the study;
 - work individually and independently in scientific research (under supervision);
 - plan and carry out the work within the available time;
 - write a state-of-the-art paper on an environmental policy issue, on the basis of information from scientific literature;
 - present and defend the results of such work for an audience of staff and students.

Learning objectives of a MSc thesis at WUR

1. The ability to approach research creatively and systematically, including formulating questions, arriving at conclusions, answers, descriptions and /or designs.

- Implement various states of a research project.
- Apply previously gained knowledge and skills to the questions, results obtained and conclusions formulated.
- Indicate the social implications of possible solutions.
- Work efficiently with a lot of data and/or in a complex situation.
- Make use of writing as an aid to research.
- Use other means of being creative.

Learning objectives of a MSc thesis at WUR

2. The ability to set up and carry out the 'technical side' of the research.

- Acquire specialist-level knowledge of a subject in a reasonable time.
- Collect relevant literature from various sources.
- Apply a range of experimental techniques with skill.
- Apply methodological knowledge.
- Consider safety, environmental, economical and /or technical aspects.
- Work out the implications of a project for the organization or society.
- Make a choice of apparatus, techniques suitable for the problem.
- Maintain and use the apparatus and research material.
- Work out the research data numerically.

Teaching and learning activities

- Learning activities (student)
 - Self-study (literature)
 - Conduct research (lab, modelling, interviews, etc)
 - Report writing
- Teaching activities
 - Regular meetings
 - Expert input (literature/methods)
 - Carry out formative and summative assessment
 - (organise peer feedback with other students: thesis rings)

Assessment

- Formative assessment
 - Feedback on intermediate products
- Summative assessment
 - Thesis report
 - Presentation
 - Research skills/competences



Assessment criteria MSc thesis

	Grading Mark 1-10	Relative weight *
Research competence (30-60%) *		30%
1 Commitment and perseverance		0.00
2 Initiative and creativity		
3 Independence		
4 Efficiency in working with data		
5 Handling supervisor's comments and development of research skills		
6 Keeping to the time schedule		
Thesis report (30-60%) *		60%
1 Relevance research, clearness goals, delineation research		0.00
2 Theoretical underpinning, use of literature		
3 Use of methods and data		
4 Critical reflection on the research performed (discussion)		
5 Clarity of conclusions and recommendations		
6 Writing skills		
Colloquium (5-10%) *		5%
1 Graphical presentation		0.00
2 Verbal presentation and defence		
Oral Defence (5-10%) *		5%
1 Defence of the thesis		0.00
2 Knowledge of study domain		



Discuss criteria

Discuss in small groups

- Are the criteria similar or different from your programme/institution? How?
- How to grade each of these criteria?

Assessment rubric (part!)

Item			
	4-5	6	7
1. Research competence (30-60%) *			
1.1. Commitment and perseverance	Student has little motivation. Tends to be distracted easily. Has given up once or twice	Student is motivated at times, but often, sees the work as a compulsory task. Is distracted from thesis work now and then.	The student is motivated. Overcomes an occasional setback with help of the supervisor.
1.2. Initiative and creativity	Student picks up some initiatives and/or new ideas suggested by others (e.g. supervisor), but the selection is not motivated.	Student shows some initiative and/or together with the supervisor develops one or two new ideas on minor parts of the research.	Student initiates discussions on new ideas with supervisor and develops one or two own ideas on minor parts of the research.
1.3. Independence	The student needs frequent instructions and well-defined tasks from the supervisor and the supervisor needs careful checks to see if all tasks have been performed.	The supervisor is the main responsible for setting out the tasks, but the student is able to perform them mostly independently	Student selects and plans the tasks together with the supervisor and performs these tasks on his own
	No critical self-reflection at all.	Student is able to reflect on his functioning with the help of the supervisor only.	The student occasionally shows critical self-reflection.

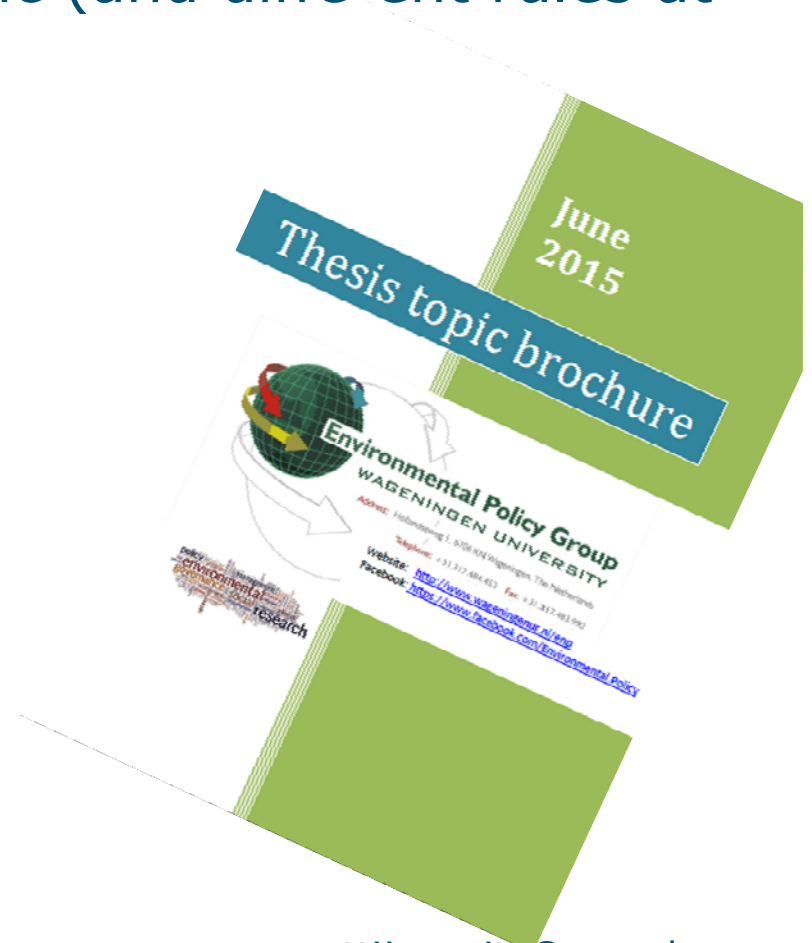
Rubric – exercise/questions

- Read/skim through the rubric
- Ask quick questions for clarification

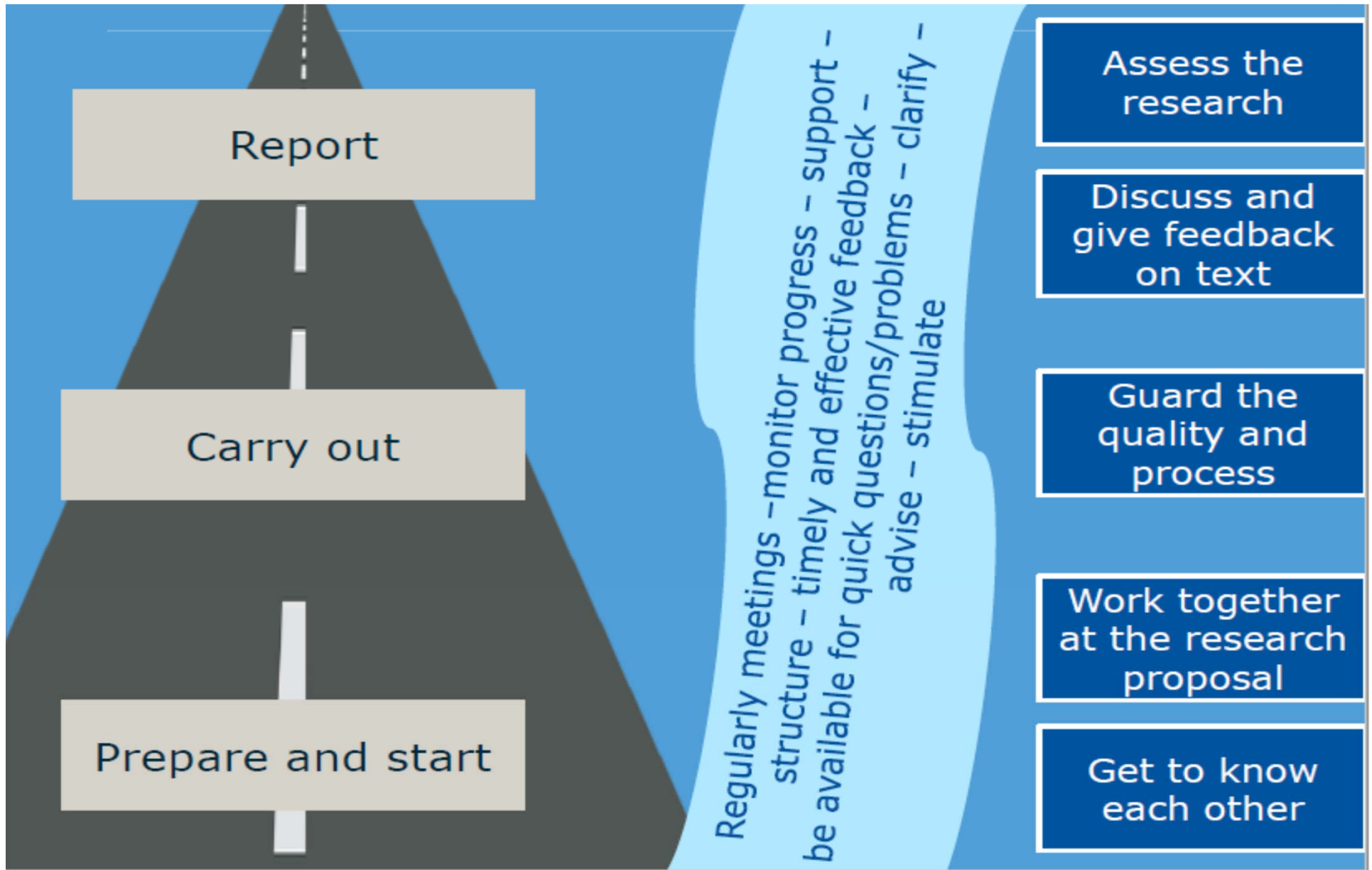
- NB: Rubrics can be used for many (parts of) courses!

Picking a topic (at my group)

- Different ways people pick a topic (and different rules at different departments!)
- Thesis topic brochure
 - Example in course
 - News
- Important: ownership and motivation!



Phases of a thesis supervision



Time line Master thesis

- Proposal writing: 5-6 weeks

Presenting proposal for staff with peer reviews from fellow students

- Field/lab work 1-2 months (may include analysis)

- Writing 2-3 months

Final Colloquium and defence

- Joining thesis ring throughout (peer-group discussions with 6-8 thesis students)

Supervision time/moments

- Proposal writing: 5-6 weeks
 - Every 1-2 weeks
- Field/labwork 1-2 months
 - On demand
 - At the end of field/labwork
- Analysis/writing 2-3 months
 - Meeting to discuss each draft chapter
 - Meeting to discuss final draft

Teacher roles during thesis supervision

- Expert
 - Input on topic: literature, methods, analysis, etc
- Advisor
 - Advise on procedures (registration, contract, etc)
 - Share information on solutions to various problems
- Coach
 - Feedback on products and process
 - Questions about choices (reflection)
 - Pushing the student to go further
- Mentor
 - Provide support when in need on personal issues

Products

At Wageningen University, we require the following products:

- Registration form
- Thesis contract
- Thesis proposal
- Data (+ analysis)
- Thesis report
- Presentation/defence

Thesis guidelines/course guide

Why use guidelines for students?

- Guidelines help to structure processes
- Based on agreements and best practices
- Provide transparency to students (and teachers)
- Can be referred to in case of doubt/conflict
- Exceptions are possible (to a certain extent)

Contents thesis guidelines (example from Environmental Policy group)

- **Preparatory steps:** topics, finding supervisor, etc.
- **Writing and presenting a proposal:** outline, etc.
- **The actual research:** supervision, facilities, etc
- **Writing the report:** outline, sharing drafts, etc.
- **Thesis presentation and grading:** presentation, publication, grading, data management
- **Appendices:** registration form, proposal/thesis outline, rubric, title page format

Exercise

- Develop table with **different phases** of the thesis process
- For each phase, identify (as specific as possible!)
 - **Timing** (roughly which week/month)
 - **Activity student** (what does the student do?)
 - **Activity supervisor** (what does the supervisor do? In which role?)
 - **Products** (are there any (intermediate) products associated with this phase?)
 - **Feedback on the products** (how often and what type of feedback?)

Phases	Weeks	Activity student	Activity supervisor	Products	Feedback on products
<i>Intake/start-up</i>					
<i>Proposal</i>					
<i>Data collection (lab, field, etc)</i>					
<i>Data analysis</i>					
<i>Writing/finishing thesis</i>					

Phases/ weeks	Activity student	Activity supervisor	Products	Feedback on products
<i>Intake (1)</i>	Admin, expectation management	Expectation management, logistics, admin	Thesis contract	Oral, 1-2 meetings
<i>Proposal (1-6)</i>	Literature review, write proposal, planning	Guidance, help finding literature, brainstorming	Proposal + presentation (or intermediate)	Oral and written (on proposal), weekly meetings
<i>Data collection (lab, field, etc) (7-17)</i>	Lab/field work, informing supervisor (any issues), data management	Lab/field introduction, monitoring, advice (including practical/direct), problem solving	Data set	Oral mainly, biweekly meetings, e.g. on data
<i>Data analysis (18-20)</i>	Analyse and interpret data, preliminary conclusions (based on proposal/objectives)	Guidance, problem solving	Manageable/presentable data, from data to information/knowledge	Oral mainly, weekly meetings
<i>Writing thesis (10-26)</i>	Write! And make figures, etc. If necessary, find resources/help/additional literature	Guidance, problem solving, review, help structuring/editing the report	Thesis + presentation	Oral and written (main), meetings when needed
<i>*continuous monitoring (1-26)</i>	Informing supervisor in case of problems, adapting	Monitoring		When needed

First meeting - A good beginning is half the battle



First meeting: What to do?

- Build a good relationship with student
- Synchronize expectations (supervision, role, examining)
- Discover strong/weak points of student
- Formulate personal learning objectives
- Discuss phasing and planning of thesis
- Explain assessment procedure

Critical issues that come up if not sorted out at the start

- Expectations do not meet
- Lack of planning, no timetables agreed
- Lack of sufficient communication
- Disrespectful attitude
- Responsibilities not shared
- Other hidden problems

Meeting in progress: What to do?

- **Social talk**
- **Planning:** Goal, agenda, time, minutes
- **Theme:** Progress, specific points
- **Closing:** Looking back to planning, appointments

Completion: What to do?

- Discuss and give feedback on text
- Making global revisions
- Making sentence-level revisions, punctuations, grammar
- Proofreading

Students expect their supervisors to:

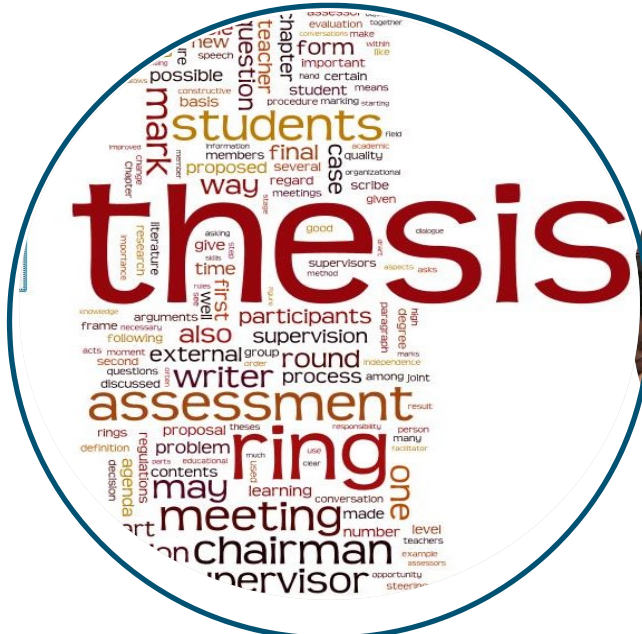
Light & Cox 2001

- Read their work
- Be available for consultation
- Be friendly, open and supportive
- Be constructively critical
- Have good knowledge of the research area
- Structure the meeting – exchange ideas
- Have interest to give more information
- To be sufficiently involved
- Monitor, not control

First meeting exercise: What to do?

- In pairs of two
- One person is student
- One person is supervisor
- First meeting with preparation in mind
- Debrief plenary

Thesis rings: a peer review mechanism for thesis students



WAGENINGEN UR
For quality of life

mattijs.smits@wur.nl

Key question

- How can we handle **more thesis students**
- **without increasing the workload**
- and maintain, or even **increase, the quality of supervision?**

Thesis rings

- Organised peer feedback for thesis students
- Now adopted by many groups within Wageningen University (and other universities)



Thesis rings @ WUR

Why a peer review system for thesis students?

- Handle increasing student numbers

But also a learning experience for the student:

- Role of peer reviewer
- Identification common issues
- Higher level of draft reports
- The importance of giving and receiving feedback (safe environment)



Set-up thesis rings

Organisation:

- \pm 7-10 students per ring
- Proposal and report reviewed once by supervisor
- Weekly/biweekly meetings of 1-1.5 hr.
- Ring supervisor (staff member) is chairman
- Supervisor is still responsible (!!)



Procedure meeting

- Students register and upload documents (submitters)
- Other students review (instructions categories)
- Staff member only facilitates discussion and process

Meeting:

- Discuss 2-3 documents (e.g. proposal, chapter)
- For each document (~30 mins)
 - Short introduction by author (student)
 - Each participant gives feedback (on style, structure, figures, analysis, etc)
 - Summary by author

Positive points (based on student evaluation)

- Most helpful aspect: Reviewing
- Atmosphere: Safe, fun, relaxed.
- Ring supervisor necessary? Yes! → Safety, solving disagreements, general advice scientific writing, structure, timekeeping.
- Extra effects: Getting to know other students and subjects better → visible cohesion
- Recommend to other students: Yes!!



Challenges



- Timing of documents requires flexibility
- Clarity role thesis supervisor vs. thesis ring
- Balance in feedback should be actively guarded by ring supervisor
- Coordination and organization required!

Are thesis rings THE solution to 'handle' larger numbers of students?

- No, it can be part of the solution
- The general organization is a key aspect
 - Intake by supervisor
 - Intake by lecturer
 - Intake by secretary
 - Desks/PCs etc
- 'Logistics' should be well-thought through
- Proper supervision and organisation of practical (lab) work is also required



Discussion

- Could this work for your university? Why or why not?
- What could be the set-up?
 - Which groups of students?
 - How to organize?
 - Any support needed?
- How could you evaluate the success?

Thank you!

Acknowledgements:

Arjen Schots

Jet Vervoort

Other Staff Nematology

Education staff support
(Wageningen)

