How to implement and assess longitudinal skills trajectories

Lessons and guidelines from ongoing projects in BSc Programmes at WUR

Advisory report

Preface

Starting from the academic year 2025-2026, all bachelor programmes at Wageningen University must integrate (a selection of) 16 academic skills into their curricula. All students have to demonstrate competence in these skills upon graduation. Each programme is required to outline how and when students will acquire these skills throughout their studies. This advisory report offers recommendations for skill implementation within bachelor programmes, in particular for skills that require a longitudinal approach. It is the outcome of a collaborative effort involving the bachelor programmes of Environmental Sciences, Food Technology, Soil, Water and Atmosphere, Marine Sciences and Plant Sciences at the Wageningen University.

The report also relates to the document "skills for changemakers" created by the skills team. In this report, we pay special attention to the integration of skills learning trajectories (advise 3), personal leadership and reflection to shape learning trajectories (advise 5), the focus on formative assessment (advise 7) and a bit to the use of edtech-tools for skills development (advise 8). The difference between the reports is that in our report we tried to make these advises more concrete based on examples of different bachelor programmes and to come to more concrete recommendations based on the experiences of these included bachelor programmes.

The report starts with the recommendations for skills learning trajectories, activities for skills courses, skills assessment and skills learning implementation. Subsequent sections provide an overview of the similarities and differences that were noted between the bachelor programmes' skills courses and background information on skill integration within each included bachelor programme.

Recommendations for implementation of skill learning trajectories and assessment

A comparative analysis of skills learning trajectories across various bachelor programmes has resulted in valuable insights for implementation of skills learning trajectories and assessment. We also provided recommendations for setting up skills courses, for often in the bachelor programmes separate skills courses were created to integrate skills learning in the programme. These courses can have different forms. The following recommendations are synthesized from the findings and represent key considerations for programmes seeking to integrate skills learning into their curricula. The advices are ordered in thematic paragraphs.

Design principles for skills learning trajectories

- When a skills course is designed and implemented in the bachelor programme, this course should include skill trajectories based on (a selection of) the 16 WUR bachelor skills.
- It is transparent and explicit in the course how students (should) develop in skills and what progressions in learning they (can) make, for example by using the attainment levels of the WUR skills.
- It is made transparent what skills are put central in a skills course and what skills are part of existing bachelor courses.
- Skills learning trajectories include ideas for instruction, learning activities, feedback and assessment.
- (Core) skills are assessed in some way (summative/formative), with the preference for programmatic assessment in case of skills learning trajectories that span multiple courses.

Structure of a skills course in a bachelor program

- Skills learning is partly implemented within courses of the bachelor program and partly in an extra skills course, which ideally is a ribbon course.
- Skills activities should be linked to the skills learning trajectories and indicate how the activity helps students to develop specific skills.
- Skills meetings and/or activities have to be carefully planned and integrated in the curriculum. Programmes and course coordinators must allocate dedicated time for skills activities.
- Tutors or other guidance need to have dedicated time and compensation (and be trained) to guide students in their reflection and development of skills. These roles are ideally fulfilled by lecturers who are already part of the program
- Use of a form of portfolio to capture skills learning, for example by using an online student portfolio or let students write personal development plans.

The following activities can be included in (a) skills course(s)

- Reflection by students on their skills learning.
- Obligatory skills activities/meetings.
- Activities linked to the content of courses, making clear for each activity what, when, where and how students are learning skills.
- Skills activities differ due to the differences between skills, for example differences between hard (f.e. research) and soft (f.e. diversity & inclusivity) skills.

Assessment of skills learning

- Assessment of skills learning can take many forms and does not need to be graded (for example programmatic assessment).
- Assessment of skills learning should be linked to course content and be part of the course itself.
- Assessment of (more soft) skills could be evaluated through a portfolio and based on reflections of students on their learning and growth.
- Reflection of the student him/herself, peers and teachers on the skills learning of the students is an important part of assessment and can take many forms (not only written).
- An assessment dialogue between students and peers or teachers is a valuable form to help students reflect on skills learning and to think about next steps in their learning.

Students & skills learning

- Skills learning should be made transparent for students: Teachers should make clear for students that they are learning skills in a course and how they are going to learn them.
- Make sure that students feel and take ownership for their own skills learning. For example, students could write a personal leadership plan or assess their own skills learning.
- Try to work from students inner motivation, for example use career profiles to portrait needed skills in future careers.

Summary of skills learning in the bachelor programmes

The following table shows an overview of the bachelor programmes that are included in this advisory report and how they implemented skills learning.

Bachelor programme	Environmental sciences (BES)	Food technology (BFT)	Soil, water and atmosphere (BSW)	Marine Sciences (BMS)	Plant Sciences (BPW)
Focus of implementation	Programmatic Assessment of skills	Explicit integration of the development and reflection of skills	Development, critical self-assessment and reflection of skills	Boundary Crossing and Personal Leadership	BPW Academic journey
Form of implementation	Pilot project from innovation grant	Innovation grant	2.0 version 0 credits course (compulsory)	3 ECTs course, ribbon course	Integrated in courses and in tutorials
Start of implementation	January 2024	September 2023	September 2022	September 2023	September 2023
Short description	In this one year pilot, eight students assess their own skills development and gather evidence in an online portfolio.	Skills Academy in which all students participate and create a portfolio, focus on personal leadership & collaboration + other skills are integrated in the courses	Students assess their skills and decide which skills they want to develop. They build an online portfolio where they plan and demonstrate their progress. They reflect on their progress during live meetings in a supportive environment.	Ribbon course with the focus on boundary crossing, but also integrates (soft) skills learning through activities in the tutor meetings.	Students make a personal development plan to indicate which skills they are going to learn and when. At the end of each year they reflect on their progress and update their plan for next year. In the BSc thesis all core skills are practiced and assessed.

Number of students involved	7	All students (about 130)	All students (40+)	All (100+)	All students (~80)
Meeting schedule in a year	Once per period	3x in total	5x per year (the first 2 BSc years), about 2x per year (the 3rd year)	3x per year	3x
Contact person	Mattijs Smits, Mattijs.smits@wur.nl	Melanie van Berkum, melanie.vanberkum@wur.nl	Antonija Rimac, antonija.rimac@wur.nl	Karen Fortuin & Daan Buijs & Arianne van Ballegooij, arianne.vanballegooij@wur.nl	Lisa Nieuwboer, lisa.nieuwboer@wur.nl
Other relevant documents	Proposal https://shorturl.at/uBqlA		Tbd (planning is to share a full description of the trajectory on https://www.4tu.nl/cee/innovation/)	Website https://www.wur.nl/en/education-programmes/boundary-crossing.htm	BPW Academic journey Brightspace

Similarities and differences between skills courses

In this section you will read what similarities and differences were found between the skills learning implementations in the bachelor programmes. These implementations can have different forms, but are here named as 'courses', since most of these implementations could be seen as a form of a skills course.

Similarities between skills courses

- All involved bachelor programmes acknowledge that most **skills learning happens within existing courses** of the bachelor program, but that some skills need more attention to develop them than is offered in the existing program. Therefore, skills courses in different forms were initiated.
- All courses include some form of **reflection** on skills learning. Reflection is thus seen as an important part of skills learning in all courses. However, how reflection should be used differs and is often not explicitly taught to students. Reflection could also lead to boredom in learning if students do not see the importance and reason of reflection.
- Skills learning is seen as a **personal development**. Students make their personal learning plan and reflect on their personal skills learning. Many courses pay in some way attention to collaborated learning during the process to also learn from each other, for example through discussions and peer feedback.
- All courses still **struggle (a bit) with a vision for the long term** in terms of embedding skills into the curriculum, choosing a form of continuation for skills learning, sustain enough capacity and resources or seeking opportunities to expand these. One of the reasons why programmes struggle is because of lack of long-term budget.
- All courses highlight the **importance of skills learning**, especially to prepare students for lifelong learning and future careers. The courses also indicate that students see the value of skills learning as part of becoming a professional in their field.

Differences between courses

- **Frequency of extra skills meetings**: 2x per year – every period
- **Participation**: voluntary participation - planned participation but with no consequences – obligatory participation with or without credits
- **Form**: tutorials as part of courses – skills academy partly integrated in courses – ribbon course as a alone standing course
- **Focus on skills learning**: Setting a plan for skills learning and following this (How, what and when are you going to learn skills?) – reflection on skills learning (How did it go? What have you learned? Where are you now?) – assessment of skills (What goals have you reached? What to do next?)
- **Freedom of learning**: Preplanned activities (for example, an activity that makes students reflect on skills learning) – planned activities with freedom of choice for students (for example, collecting evidence in your portfolio about skills learning) – freedom of activities (students decide when to do skills learning and how)
- **Choice of skills in skills meetings**: all skills included – focus on core skills – more soft skills learning, other skills integrated in courses – some explicitly chosen skills
- **Student motivation**: Some students are motivated by providing portfolios of alumni showing what skills they need if they work in that profession, many students see the

value of skills learning and are internally motivated, and some students do not yet see why they need skills learning and are less motivated.

Skills implementation in the bachelor Soil, Water and Atmosphere

The following pages provide more background information about the skills learning trajectories of each included bachelor programme.

Description of the skills project/course

1. Describe what the starting point was of the skills project/program. Why did you start the project/program? What gap in skills learning were you trying to fill?

    BSc BSW programme started with the personal development path (hereafter PDP) due to several reasons:
    - Students' recurring observation was that the attention for the professional field, academic skills and scientific development is less than they would like.
    - Although BSW/MEE researchers study diverse and relevant topics, introductory BSc courses were often not well suited to let students connect direct research and its applications, as well as to make connection between their field and society.
    - Students often had difficulty to see overall connection between courses.
    - Students insufficiently reflected on their skills and competencies when choosing for their 3rd year and MSc courses, nor on their role as Earth Sciences scientists in relation to science and society.

2. What is the goal of the project/program? When is it successful?

    - The goal of the PDP is for students to take ownership of their education through an individual learning path in a supporting community. By participating in the PDP they develop awareness regarding their knowledge, skills and attitudes necessary for their personal development, career orientation and impact on science and society.
    - The PDP is deemed successful when: a) the quality of self-assessment, planning, reflection and development of students' skills are of good/sufficient quality (based on guidelines for the skills development and a rubric set up by the course coordinator), b) when students are able to make connections between different domains, and not only developing aptitude for a single domain, and c) when at least 80% of a cohort is actively participating in the course by self initiatively asking for feedback and guidance to develop skills, knowledge and attitude.

3. Shortly describe how the implementation of the project/program went? What were important influences to make the implementation successful?

    Although the PDP is now running for the third year, we are implementing the second course version. The implementation is running smoothly as all the steps are carefully planned by the course coordinator and the programme director based on the experience, learned lessons and feedback obtained from the first course version. The most important learned lesson is that students need live meetings and personal contact with a teacher. The most important influence was done by the students

themselves, as they provided thorough feedback on how they perceive the course and how they would envision a zero-credit skills development course.

4. How do you look back on the implementation of the program/project? What important lessons have you learned?

    The original course idea/plan had two major flaws; mainly that students missed the personal contact with the course coordinator/teacher, and that they missed skills to perform reflection (and/or self-assessment) of their skills, knowledge and attitudes. In the new version of the course this is changed. We now organise 5 meetings (one meeting per period) with the students per year. During these meetings we:
    - Meeting 1: Reflect on the set of skills (each BSc year looks at different skills) and students decide which skills they would like to develop during that academic year.
    - Meeting 2: Write learning goals and make plans on how to develop desired skills.
    - Meetings 3-5: progress meetings in groups with students working on the same skills.

    The implementation process and the feedback we got from our first cohort was a valuable lesson as students are often the best course designers. In this case this proved positive as we are now structuring the course based on wishes and vision of our students.

5. How is the project/program now part of the curriculum? Is it:
    a. bolt on, the skills course is completely separate from other courses in the programme
    b. integrated, the skills course is linked to the programme, but distinct from other courses in the curriculum
    c. Embedded, the skills course is seamlessly woven into the curriculum

    b. yes. The skills course is a separate course but students can use examples and assignments from various courses to develop their skills. Moreover, to develop skills such as professional leadership, we work in close connection with the study association.

Evaluation of the project/program

6. Could you shortly describe the strengths and challenges of your skills project/program?

    The main strength of the PDP is that we develop it based on the feedback of our students, that we use existing activities/assignments from various courses to stress skills, knowledge and attitudes development. Also, we allow students to choose which skills they want to develop, thus stressing their ownership of their education. One challenge we are facing is that students struggle to self-assess and reflect on their skills and knowledge, which highlightes the importance of explicit teaching of these skills. Also, as a coordinator and main developer of a zero-credit course, I miss financial support.

7. What sending home message would you like to give about implementing a skills project/program?

    Link the development of a skill-learning trajectory to other ongoing projects within the study programme and university, to encourage collaboration and input from

colleagues involved in related initiatives. Facilitate connections between colleagues with relevant expertise. When assessing activities, it is essential to consider the perspectives of various stakeholders, including teachers, student assistants, and students. Most importantly, be inovative, original and not affraid to make mistakes and start all over.

Skills implementation in the bachelor Marine Sciences

Description of the skills project/course

1. Describe what the starting point was of the skills project/program. Why did you start the project/program? What gap in skills learning were you trying to fill?

The bachelor Marine Sciences is a new programme. The first cohort started in September 2023. The nature of the marine domain requires graduates who can work in a complex international context. Throughout their upcoming (academic) career, marine students will encounter complex issues which will require collaborations outside their scientific domain, culture and/or context to develop innovative solutions for complex marine issues. This is why we included the Boundary Crossing & Personal Leadership course in the BMS programme. In this course, students are invited to explore the mechanisms of boundary crossing to grow from and recognize situations where these competencies are required; and appreciate and utilize the opportunities present by working in inter/transdisciplinary and intercultural teams.

A new longitudinal course *Boundary Crossing & Personal Leadership* (BC&PL; [ELS11303](ELS11303)) was implemented last year in the new BSc Marine Sciences. This course consists of a 3 ECTS core part in period 2 followed by individual assignments embedded in BMS courses throughout the year. These assignments are supported by tutor meetings (i.e., group meetings of approx. 10 students tutored by a lecturer or skills trainer).

The Boundary Crossing course also encompasses the skills social embeddedness, diversity, personal leadership and collaboration.

The core component is focused on identification and reflection learning mechanisms. The theory of boundary crossing is explained, and students are exposed to boundary crossing situations through serious games and case studies. Students are challenged to recognize their own values, perspectives, disciplinary preferences, strengths and weaknesses, as well as the differences with others. At the end of the core component, students formulate individual learning goals that guide their own learning path within the ribbon component.

The ribbon component is focused on coordination and transformation learning mechanisms. In specific cases of the six courses that are intertwined with the ribbon, students are challenged to collaborate more effectively with others and use differences in a positive way to cocreate new concepts, routines and procedures and to generate innovative solutions together.

2. What is the goal of the project/program? When is it successful?

After successful completion of this course students are expected to be able to:

- Recognize and appreciate their own abilities and growth points relevant to analyse and solve complex (marine) issues [core]
- Identify and value other perspectives relevant to analyse and solve complex (marine) issues [core]
- (Re)consider their own perspectives and team roles, show willingness to learn from others and initiate reflective actions between group members when analysing and solving complex (marine) issues [core]

- Map their current competences and ambition in the spectrum of boundary crossing skills and formulate a personal trajectory to steer personal boundary crossing leadership development [core]
- Seek and utilize the expertise and perspectives of others to collaboratively design and engage when analysing and solving complex (marine) issues [ribbon]
- Engage in and inspire boundary crossing competences during inter/transdisciplinary collaborations to analyse (marine) issues to incite innovative solutions [ribbon]

3. Shortly describe how the implementation of the project/program went? What were important influences to make the implementation successful?

The core course and the longitudinal course and their learning outcomes have been included in the design of the curriculum of the BMS programme from the start. As such they were part of the application dossier for the accreditation of the programme. This made it a normal part of the curriculum and meant that staff involved in creating the linked BMS courses were aware of their course being part of this trajectory. The BMS staff conferences we had were really helpful in creating an understanding of the concept of Boundary crossing and of the coherence in the curriculum with the linked courses.

4. How do you look back on the implementation of the program/project? What important lessons have you learned?

Implementation is still going on. It is too early to draw conclusions yet.

5. How is the project/program now part of the curriculum? Is it:

    a. bolt on, the skills course is completely separate from other courses in the programme

    b. integrated, the skills course is linked to the programme, but distinct from other courses in the curriculum

    c. Embedded, the skills course is seamlessly woven into the curriculum

    Answer: It is a mix of integrated and embedded.

Evaluation of the project/program

6. Could you shortly describe the strengths and challenges of your skills project/program?

Strengths

We have been able to create the space for deep learning experiences (although not always for all students), in opening up new perspectives. Some students really understood the concept and found it valuable and enriching, some didn't understand and were irritated and unmotivated.

By designing the assessment criteria together with the students we have created an assessment that is connected to the level of the students and asked them to think critically about the topic on a meta level.

Students have got clearer picture of who they are as a marine scientist, and what this asks from them in terms of BC&PL.

Challenges

We had some struggles with organisational issues. A longitudinal course is not supported by the Wageningen University educational systems. We faced struggles related to scheduling, assessment, and recognition of efforts put in the course by students and staff.

The students were inclined to think of BC as 'things I can't do/skills I miss' , like learning Excel or presenting. This had to be addressed multiple times.

This year we will not only again implement the BC&PL assignments in year one, but also in second year BMS courses. Questions we still have are:

- What is a proper moment to assess the BC&PL course? Right after period 2, or after one year?

What is a proper way to assess students' BC&PL competencies at the end the bachelor? With an individual or group meeting with a tutor? With a workshop, a group or individual presentation? As part of a course or of the BSc thesis?

7. What sending home message would you like to give about implementing a skills project/program?

- **Reflection on BC & PL Skills is feasible at the start of a bachelor.** Inviting students at the start of their study to reflect on their BC&PL skills is not too early. Students appreciated the open discussions about developing BC&PL. Starting early, provides students the opportunity to become aware of these skills and to start developing them.

- **Design assessment criteria collectively with students.** In the course, students were asked to develop collectively assessment criteria to operationalise BC&PL. Next, they had to assess themselves on these criteria. This approach proved to be valuable for students and staff to make the abstract concepts of BC&PL tangible and personal.

- **A close and clear link to the study programme is needed**. BC&PL should not be a separate part, but clearly linked to the domain of a study programme to ensure a relevant learning experience.

- **For soft skills learning creating a safe environment is key**.

Skills implementation in the bachelor Food Technology

Description of the skills project/course

1. Describe what the starting point was of the skills project/course. Why did you start the project/course? What gap in skills learning were you trying to fill?

   Skills learning is becoming more important and needs to take a prominent role in the bachelor programmes of students. However, some skills are missing at the moment in the bachelor programme and are not (yet) explicitly taught, while they are important for the study and future career of students. Therefore, the skill personal leadership is put focus in the food technology skills academy. Other skills that are relevant in this skills academy are collaboration, writing, researching and reflecting. One of the important requirements for the skills academy is that it is connected to the rest of the bachelor's programme.

2. What is the goal of the project/program? When is it successful?

   Students learn to reflect on their skills learning and take personal leadership in their skills development by setting new learning goals and making new plans to develop skills. The project also aims to stimulate collaboration between students and let students learn from each other, using dialogue and tools to stimulate conversation and feedback.

3. Shortly describe how the implementation of the project/course went? What were important influences to make the implementation successful?

   Important influences to make the skills academy successful were that some people take the lead in setting up the skills academy and get time to do so. In a way these persons could be seen as skills coordinators, organising and facilitating meetings for students, creating assignments for students to do and guiding students by helping them during and between meetings in skills learning. Another important factor that helped the skills academy succeed is the fact that the skills academy meetings were part of students bachelor programme. While taking part in the skills academy is not obligatory, it helps that the meetings are planned in students schedules and are connected to existing courses.

4. How do you look back on the implementation of the program/project? What important lessons have you learned?

   Important lessons were that most students see the value of developing skills and that is necessary to reflect on skills learning, but not all students were equally motivated. Another notable thing was that students showed more personal leadership in their development of skills and for example made more use of talking with study advisors, during and beside meetings. Also improving the personal leadership skill is by providing students with choices during meetings about what they want to focus on. This also helps with improving motivation, since students experience more autonomy over their own learning when options are provided.

5. How is the project/program now part of the curriculum? Is it:
    a. bolt on, the skills course is completely separate from other courses in the programme
    b. integrated, the skills course is linked to the programme, but distinct from other courses in the curriculum
    c. Embedded, the skills course is seamlessly woven into the curriculum

    c. The skills academy is embedded in the curriculum, however still with its own focus, namely putting reflection on skills central and taking personal leadership over skills learning.

Evaluation of the project/program

6. Could you shortly describe the strengths and challenges of your skills project/program?

    Strengths were that the skills academy is integrated in the curriculum and therefore seen by students as part of their study programme. However, the skills academy is not obligatory. If the option was there to make it more into a ribbon course, this would even be better.
    A challenge is to make more teachers getting involved in skills learning. Now the skills academy is mostly coordinated by a few people, while it would be a nice improvement if more teachers get involved and are more aware of how students learn skills in the bachelor programme and their courses.

7. What sending home message would you like to give about implementing a skills project/program?

    Setting up and integrating a skills academy is a nice way to stimulate more skills learning in a bachelor programme. Make sure that skills learning is connected to existing courses and not seen as a stand-alone activity. The skills academy creates opportunities for students to develop certain skills more explicitly, such as personal leadership and to have a moment to reflect on skills learning that helps to set new goals and improve skills development.

Skills implementation in the bachelor Environmental Sciences

Description of the skills project/course

1. Describe what the starting point was of the skills project/program. Why did you start the project/program? What gap in skills learning were you trying to fill?

    After a former project in which the focus was laid to implement three core skills in five chosen courses, questions arose in how to assess skills learning. This led to an innovation project in which we set-up a pilot for a skills academy. In the skills academy 7 students met five times in a meeting to monitor and evaluate their skills learning. We wanted to see if in this way programmatic assessment could be a form to assess skills learning.

2. What is the goal of the project/program? When is it successful?

    The goal was to find out if programmatic assessment could be a good form to integrate assessment of skills learning. The project needed to result in advices for the bachelor programma committee to further develop a skills course/academy that would be embedded in the programme and become a part of BES.

3. Shortly describe how the implementation of the project/program went? What were important influences to make the implementation successful?

    It was a bit difficult to find enough students who wanted to voluntarily participate in their own time in the meetings. But, the students who were involved were all very motivated to work on their skills learning. We managed to have the meetings planned on moments that fitted the students' scheduled and prepared the meetings well. Because the meetings were structured, they went well and we could help students to guide and monitor their own skills learning. The motivation of the students were a main influence in the succeeding of the project.

4. How do you look back on the implementation of the program/project? What important lessons have you learned?

    We learned that students see the value of skills learning and are motivated to work on their skills development from different reasons. This confirms our ideas that we need skills learning needs to get a prominent place in the study's programme and helps them to prepare for their future careers. We also learned that it is very important to have a good overview of when opportunities for skills learning are present in a course, for both teachers and students. Students shared that this was important for them to plan for next steps to be taken in their skills learning and to be able to improve themselves. Also the value of (verbal) reflection on their learning was an important part of skills learning. And that students need certain guidance in how to monitor and assess their own skills learning.

5. How is the project/program now part of the curriculum? Is it:

a. bolt on, the skills course is completely separate from other courses in the programme
b. integrated, the skills course is linked to the programme, but distinct from other courses in the curriculum
c. Embedded, the skills course is seamlessly woven into the curriculum

At the moment b, but this is still under construction and will probably take a form of an integrated course in the bachelor's programme.

Evaluation of the project/program

6. Could you shortly describe the strengths and challenges of your skills project/program?

Strengths of the programme was to have structured meetings in which students had time and space to gather evidence in an online portfolio about their skills learning and reflect on this. Also a strength were having assessment dialogues with an objective assessment committee per student about their skills learning. This really helped students to improve their skills learning. A challenge would be to integrate this course into the whole programme and getting all students motivated to participate in such a course. It will probably help that the course would then be obligatory. However, motivating students for this course will keep on being a challenge and point for attention.

7. What sending home message would you like to give about implementing a skills project/program?

Students really see the value in skills learning, also for their career paths after graduation. It is thus important to take this seriously and integrate skills learning in the curriculum, including assessment of skills (which could take many forms).

Skills implementation in Plant Sciences

Description of the skills project/course

1. Describe what the starting point was of the skills project/program. Why did you start the project/program? What gap in skills learning were you trying to fill?

    *   The starting point of the project was the completion of the BPW Skills Fingerprint as was part of the WUR-wide Skills Learning Trajectory implementation. Then this needed follow-up in the form of setting out the actual skills learning trajectories of BPW.
    *   We were very happy with the final level of our students in most of our core skills; Research skills, writing, presenting. As programme team we monitor these skills in the BSc-theses, as there are four fixed thesis examiners. Therefore we determined the main gap to be the awareness of students that they are learning skills as well as knowledge and the visibility of skills education in our courses.

2. What is the goal of the project/program? When is it successful?

    When our students end their BSc programme with a good understanding of the skills they obtained and can both reflect on their progress as well as look to the future in what they still want to learn. Additionally, the lecturers should be happy with the workload of skills-education and a big bonus would be if the students actually liked/enjoyed their journey.

3. Shortly describe how the implementation of the project/program went? What were important influences to make the implementation successful?

    Quite smoothly, mainly because the lecturers of our core courses were actively involved and very willing and committed to make time for skills tutorials as well as align their skill instructions.

4. How do you look back on the implementation of the program/project? What important lessons have you learned?

    It is still very much a work in progress.
    The main lesson is that sometimes you learn more by just going ahead and doing your envisioned tutorials and not worry too much that you did not plan every detail. Being honest and open about this to the students also provided us with great student-feedback and is still helping us improve the journey.

5. How is the project/program now part of the curriculum? Is it:
    a. bolt on, the skills course is completely separate from other courses in the programme
    b. integrated, the skills course is linked to the programme, but distinct from other courses in the curriculum
    c. **Embedded, the skills course is seamlessly woven into the curriculum**

Evaluation of the project/program

6. Could you shortly describe the strengths and challenges of your skills project/program?

Strengths:
- Strongly embedded in core courses of the programme.
- Skills learning is linked to the professional field by using professional profiles and alumni interviews, which strongly improves students' motivation for skills learning as they are working towards the future version of themselves that they want to be.
- Enthusiastic and involved teachers and study advisors teach the skills-tutorials.
- Each skill-instruction is directly linked to a larger assignment in the courses. E.g. after the Peer Feedback Workshop the students have time to give peer feedback on a review chapter for the larger course group assignment. This makes the instruction highly relevant and helps with the integration of skills in the course.
- So far, mostly happy students that enjoyed or at least saw the benefit of the learning activities.

Challenges

- There is a lot of course material that needs to be kept up-to-date.
- Matching the 16 WUR-skills to the professional profiles – We restructured the skills to make a better fit.
- Making skills learning visible in the third year, when students mainly follow elective courses. Ideally we couple their objectives for skills learning to their free choice, but this requires extensive reading of study guides and sometimes even e-mails with teachers.
- Alignment of skills instruction throughout the courses, especially to achieve increasing difficulty. Since student retention is often poor, many lecturers start their instruction back at the basics. Also, many courses are shared between programmes and all these different skills trajectories may not necessarily align and thus require different instructions.

7. What sending home message would you like to give about implementing a skills project/program?

Just do it and don't get stuck in working out the details.
Let students take ownership of their learning trajectory and don't feel the need to asses and check every little step of their journey. Especially if you are already happy with their final level.
Most programmes already have a solid basis in skills in the current courses, so sometimes just visualising the skills and making the students aware is enough to already form a pretty decent learning trajectory.