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"I was impressed by the participants' creativity and positive energy. I saw many nice examples of Boundary Crossing implementation. We seem to advance from a project to a movement! Apparently, lecturers gain energy from working with Boundary Crossing. I also noticed that relatively simple learning activities can have a big impact. Boundary Crossing is at the core philosophy of Wageningen University education and we need to further elaborate it."

Arnold Bregt, Dean of Education and project leader of the BC@WUR project

BC@WUR – Reflections from the inspiration meeting 13 April

April/May 2021

Since 2018, the Comenius Leadership project "Boundary crossing as modus operandi @WUR" is running. Project leader Arnold Bregt, a core team, and four Bachelor Pilot programs (BFT, BIL, BES, BAS) are working on boundary crossing learning outcomes, activities, assessment, learning trajectories, teacher training and policy. As we speak, boundary crossing is spreading throughout the university. On April 13, 2021, we organised an inspiration meeting to showcase several of the initiatives at various levels. Via this blog we like to share what was presented, discussed, and learned in the various parallel sessions. Additional background information can be found in the BC@WUR: Bigger Group MS teams site.

Please note that four BC knowledge clips are now available for you to use, we plan to organise a next inspiration session in the autumn, and that a BC teacher training will be offered in October 2021!

- What is a Boundary, a Practice, and Boundary Crossing
- The importance and relevance of Boundary Crossing
- Boundary Crossing learning mechanisms
- Cultivating your Boundary Crossing Competences

Enjoy reading,
BC core team

Boundary crossing learning activities in two food technology courses

Melanie van Berkum and **Julia Diederen** presented two courses: the first course of year 1 "Introduction to Food Technology" and the last course of year two "Discipline Integrating Product Practical". Their PowerPoint and accompanying documents show very specifically how they integrated the disciplinary, cultural, and university-society boundaries in these two courses. An interesting discussion focused on when and how the term "boundary crossing" should be explicitly used and discussed with students.

"It takes little effort to implement boundary crossing activities, while the newly gained insights by students lead to better outcomes."

Julia Diederen

Using a boundary crossing portfolio and assessment interview in the Master Biobased Science

Sonja Isken and **Emiel Wubben** presented a very tangible way to implement a BC learning line throughout the MSc BioBased Science. A crucial aspect of this MSc programme is crossing disciplinary boundaries. The BC learning line is scheduled as a one credit ribbon course: *Boundary Crossing in Biobased Sciences*. Students are expected to reflect four times by writing a reflection paper to be uploaded in a digital portfolio, twice as part of an existing course (e.g. ACT) and twice on top of selected courses and their thesis. The fourth and final reflection is done after students completed their thesis followed by an assessment interview. Students are asked to reflect upon and explain the added value of creating bridges between disciplines.

Because of increasing student numbers, the programme is currently facing issues such as, how to find sufficient thesis topics with BC elements, how to provide sufficient feedback to the students, and how to find sufficient qualified examiners for the assessment interview. Participants of this sessions suggested to look for creative ways of reflecting, such as developing a mood board or a clip.

Facilitating boundary crossing in online learning: 4 exemplary learning activities

Gerlo Borghuis shared his experience with designing and facilitating BC learning activities in the MOOC 'Agricultural Water Management'. He nicely shows that the majority of participants 'scores' themselves as having a disciplinary background at the beginning of the course, but at the end of the course they see themselves as being more interdisciplinary focussed. This impact is also noticeable when looking at the end products (a consultancy advice) of the course. Using real-life cases, and combining knowledge from several disciplines, the set-up of the course makes participant cross boundaries along the way. To be able to understand how this process is guided or facilitated in the MOOC, more explicit monitoring of the learning mechanisms would be interesting.

"Online (BC) interaction among students requires a lot of attention. The purpose of the interaction (learning outcome /BC activity) needs to be very clear to the students."

Gerlo Borghuis

"Boundary Crossing as the profile for the new Master Data science for Food & Health"

Lukasz Grus and **Sabien van Harten** explained how they use "the boundary crosser" (also called "the integrator" or "the analytic translator") as a key profile for their new Master programme in which the data scientists and the food & health specialist learn to speak each other's language. They visualized their planned curriculum (2 years) and how they intent to facilitate the development of boundary crossing via the learning mechanisms of identification, coordination, reflection, and transformation. Their main questions focusses on "how can we support students in developing these boundary crossing skills throughout the program?"

"The implementation of boundary crossing has to be built in and communicated, with teachers and students in various phases throughout the educational program."

Lukasz Grus

Boundary Crossing as a catalyst for skills learning trajectories. Opportunities for smart integration? The example of Bachelor Environmental Sciences

The BES programme aims to combine the implementation of BC and BSc skills. Firstly, **Marjo Lexmond** explained that five core courses in the BSc Environmental Sciences (BES) are selected to train BC competence development. Some of these courses focus on various boundaries, whereas others train specifically disciplinary, cultural, or university-society boundaries. Together they form the BC learning trajectory. Secondly, **Renske Dijkstra** showed how the BC learning mechanisms, identification, coordination, reflection, and transformation are related to various academic and professional skills. Currently a fingerprint of all the BES courses is being made to identify the skills that are trained in all BES courses.

During the discussion the questions were raised, how to communicate the skills and BC development to involved teachers (and students), and how to implement BC competence in programmes that started already implementing skills learning trajectories.

"BC puts academic and professional skills in the right context. BC clarifies why an academic requires skills."

Ruth Tennekes

What and how to integrate Boundary Crossing in the teacher professional development opportunities?

As learning across boundaries does not happen automatically for students, teacher support is needed to be able to facilitate students' boundary crossing. **Marieke van Schaik, Hubertie Kroon** and **Annemarie Zijlmans** shared that the Education Support Centre (ESC) are making plans to integrate Boundary Crossing in the teacher professional trainings (UTQ/BKO). To get input and share ideas, Hubertie and Annemarie prepared a Miro board for discussion during the session to investigate what course coordinators/ teachers would like to see in the course as well as what teachers would need to be able to help their students cross boundaries. Some of the wishes from participants includes having concrete examples of boundary crossing learning activities (e.g. examples of questions that teachers can ask students to trigger them to cross boundaries) as well as ways to assess students' boundary crossing learning.

"BC teachers need to earn to deal with emotions and to ask questions instead of giving answers."

Hubertie Kroon

Managing Public Spaces: boundary crossing between Master and Professional students

Marlies Brinkhuijsen (LAR) and **Sarah de Vries** (ESA) presented their brand new mixed-age classroom course Managing Public Spaces. Thirteen Master students and fifteen professional students collaborate on the design and management of public spaces. The most important boundaries to cross are the ones between the (sub) disciplines of design and management AND between 'regular' university students and professionals, following the course as students/learners.

Boundary crossing is used as a red thread throughout the course: students do self-assessments (pre-, mid-term and post) of their boundary crossing competence levels, they describe boundary crossing learning goals in their personal development plans,

work in living labs, conduct a 'stand in the shoes of...' assignment and reflect on BC development. First insight: the boundary between students and professionals is less present (or hinderly...) than the boundaries between our design and management disciplines. A lot to learn there!

"The most effective learning activity for boundary crossing turns out to lean back and have an informal chat amongst the participants."

Marlies Brinkhuijsen

Boundary Crossing in Bio-Med-Tech-Nutrition Interdisciplinary Team Training Challenge

Bio-Tech-Med-Nutrition Interdisciplinary Team Training (BITT) is an interdisciplinary, case driven elective jointly organized by Wageningen University, Utrecht University, UMC-Utrecht and Eindhoven University of Technology. Groups consisting of Medicine (UMCU), Nutrition & Health (WUR), Biomedical Engineering (TU/e) and Biomedical Sciences (UMCU) students, are introduced to a disease-related problem by a patient and its doctor. They are supposed to develop a solution for this problem by making use of everyone's expertise and experts they will find themselves.

Doing this, they develop design thinking and entrepreneurial skills which are not covered in the regular program, but very useful in the students' future career. This also goes for adopting other perspectives such as the views of both other disciplines and the end user (patient). As this elective makes use of real-life cases it is a great addition to the rest of the curriculum that mostly approaches problems in a generic way. It should also be noted that, as this project includes both nutrition and related disciplines in the field, it is very interesting to MNH-students who have a broad interest.

In the 2022 edition of BITT (February - June 2022) students of other study programs of WUR are welcome to join as well. This opens up the opportunity for students interested in this field to broaden their horizon outside of their own specialization. Note that the type of challenges will remain the same (disease-related patient problems). For more information about boundary crossing in the BITT Challenge, please contact Sanne de Jong (UMCU) or Anneke Berendts (WUR).

The overall picture of the inspiration session showed that participants got to see the relevance, necessity ánd possibilities of making boundary crossing explicit, often within existing activities. As a core team, we have gathered a lot of input on what can be done (more) to support teachers, PC members and others to implement BC even more. Be sure to hear from us with lunch meetings, peer-meetings, and teaching materials!

"I see other universities looking at how we @WUR work on boundary crossing. WUR is a frontrunner in this respect, both in culture and experience. Our challenge now is to show this much more and give it a more formal place in our education."

Arnold Bregt, Dean of Education and project leader of the BC@WUR project