

Teaching Portfolio.

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1. Formal educational training

I have completed the course higher education teaching (Adjunktpædagogikum) at University of Copenhagen.

2. Administrative tasks related to education

In 2011 I was course coordinator of Freshwater Ecology (4th year biology at the University of Copenhagen). I have participated in the development and structure of the course since 2008 and the creation of the written exam.

I have participated in the development of the course Pelagic Production from 2006 till 2010 (4th year biology at the University of Copenhagen).

I have been course coordinator from 2008 till 2018 of water quality and environmental condition in lakes and streams (3th year biology at the University of Copenhagen). I have developed the course myself and I have produced all lectures and written a compendium for the course (200 pages). As course administrator of the course water quality and environmental condition in lakes and streams I have participated in a board related to the study program of Nature and resources. This was regarding implementing this course as limited optional, for the bachelor education in nature and resources.

I have been responsible for one of the themes in the course Ecology and management of nature and semi-nature areas since 2012 (4th year biology at the University of Copenhagen). I have furthermore participated in the development of the course and the creation of the written exam.

3. Experience with teaching, supervision and examination

From 2003 and onwards I have been a part of the teaching team on nine different undergraduate and graduate courses.

Freshwater Ecology.

Significant teaching of Freshwater Ecology since 2006 (4th year biology at the University of Copenhagen). The course is 7.5 ETCS and has a duration of 6 weeks. My workload on the course have varied over the years from teaching from 2-4 weeks of the course. I have been part of the creation and correction of the written exam and I have developed my own lectures and exercises.

Water quality and environmental condition in lakes and streams.

Course coordinator and only teacher on the course water quality and environmental condition in lakes and streams (3th year biology at the University of Copenhagen) from 2008 and till 2018. I have developed the course and it is 7.5 ETCS. I have produced all lectures and written a compendium for the course (200 pages). The course has a maximum uptake of 24 students and is very popular with students from biology, geology, geography, nature and resources and chemistry.

The teaching of the course has the following focus.

Ecology and environmental conditions of lakes and streams

Effect of nutrients and carbon on lakes and streams

Analysis of the biological structure and nutrient turnover on a functional level using lake modelling and GIS

Field Course III.

Significant teaching on Field Course III, topics in lake and stream ecology, from 2003 till 2012 (1.th year biology at the University of Copenhagen). It's a field course of 3 ETCS, which is held 7-8 times each summer. I have been teaching from 1-3 of these courses each summer in the mentioned period together with another teacher and an assistant.

Pelagic Production.

Significant teaching on Pelagic Production from 2006 till 2010 (4th year biology at the University of Copenhagen). The course was 7.5 ETCS and I held approximate 50 % of the teaching. I have participated in the development of the course. I have produced my own lectures and exercises.

Ecology and management of nature and semi-nature areas.

Significant teaching on the course Ecology and management of nature and semi-nature areas since 2012 (4th year

biology at the University of Copenhagen). I have participated in the development of the course since it was created in 2012. The course is 6 weeks full time course (15 ECTS). I am responsible/coordinator for last week of the course focusing on:

Carbon dynamics and regulations - Carbon balances in plants, soils and ecosystems
Regulation of primary production and decomposition processes
Nitrogen and phosphorus dynamics in air, soil and water
Phosphorus models in lakes as an analytical management tool
Carbon and nutrient balances for terrestrial and aquatic habitats

General Ecology.

Significant teaching on General Ecology from 2004 till 2007 (1st year biology at the University of Copenhagen). The course is a 6 week and 7.5 ECTS. I have taught lectures and exercises all years in the above-mentioned period for 2 weeks.

Freshwater Ecology – DTU/KU Master.

Significant teaching on Freshwater Ecology from 2012-2014 (4th year DTU-KU). I have participated in the development of the course and the creation and correction of the written exam. I have produced my lectures and exercises.

Metodevalg og Prøvetagning i Miljøforvaltning.

Minor teaching input on Metodevalg og Prøvetagning i Miljøforvaltning since 2008 (4th year biology at the University of Copenhagen)

Advanced Ecology.

Minor teaching input on Advanced Ecology 2016 (4th year biology at the University of Copenhagen)

Feltkursus i økologi - BB548. SDU. 2020 onwards

Økologi A - BB547. SDU. 2020 onwards

Danske naturtyper og deres udvikling - BB507. SDU. 2020 onwards

Methods, materials and tools

Lecture based teaching is commonly used to teach larger classes, however I think it's very important to incorporate understanding about how memory, motivation, and learning works when delivering a lecture. There are several things I keep in mind and think is very important while preparing my lectures. The lecture should be inspiring, interesting and an eye opener for the students presenting them with something that they can't achieve through just reading the curriculum. During lectures I show my enthusiasm and interest in the topic and try to get the students involved and start a dialog. I have had good success during lectures with.

- Asking a question or stating a problem in the beginning of the lecture that is central to the material I will be talking about.
- Using active learning during the lectures – asking the students to raise a question to be discussed during the class.
- Linking the lecture to previously taught matter.
- Using video in order to illustrate important points.

My teaching material including lectures are available online for the students before each class in order to for the students to be able to take notes directly on the slides and thereby being able to focus on the actual lecture instead of having focus on taking detailed notes.

Case oriented teaching can be very motivating for the students as learning new skills and knowledge is the means of solving a case. This makes it evident for the students what they can utilize the newly gained knowledge for and through that ensure motivation and deep learning. I have used case based learning during exercise classes where the students apply their knowledge to real-world scenarios, promoting higher levels of cognition.

I have furthermore taught using problem-based learning (where the students learn through an open-ended question), Field trips, laboratory work, flipped classroom and used pretests. Whenever possible I use blended learning where differentiated instruction is occurring simultaneously in the classroom.

I both use Science based teaching where e.g. lectures can be based on research results and teaching based science where the students take the role of research assistants and get insight into an ongoing research project, where they are participating actively.

Description of experiences with various methods of teaching assessment

In regard to assessment I think that different courses and situations demand different methods. I have quite a bit of experience with summative feedback in form of individual and group exams as both oral and written exams. I have furthermore experience with multiple choice exams, project exams and other various forms of exams based on e.g. reports, active participation and presentations.

When there is summative feedback at the end of a course I have experienced that high proportion of the students have focused only on the matters that are relevant in relation to the summative evaluation. Some students have no or very little focus on important elements if there are not being tested.

There is no doubt that summative feedback in the end of a course increase the learning of the tested curriculum. However,

there is also arguments for the importance of formative feedback to increase deep learning.

In order to try and optimize the feedback and increase students deep learning I have used different methods for feedback on different courses.

There are some general matters I find important when using summative feedback in my teaching.

1. At the beginning of the course I would like the students to apprehend where they are in their learning process of the course matters.

a. A way of doing this is by using summative test in a formative way, in order for the students themselves to gain knowledge of their strengths and challenges. This way the students realize where they need to focus.

2. I explain to the students what they are going to learn and how it's going to develop their competences.

a. I use examples of the knowledge the students will develop and how it can be used. This helps the students to focus on the competences that they are going to obtain and not only focusing on passing the exam with a high grade.

3. I explain to the students what we need to do to achieve the goal of the course.

a. I explain the processes and what's expected from the students in order to achieve an environment with high and deep learning.

I have also used formative feedback in my teaching. An important part of using formative feedback is that the students participate in giving other students feedback on their work. When I started involving students in giving formative feedback to other students presenting results from a case study I found that students presenting were very involved, while the other students giving peer feedback did not take responsibility in the learning process. This meant that the effectiveness of the peer feedback often was sub optimal. Thus, as a consequence of this, I altered the structure of the course in a way that all students had to submit a report concluding their own and other groups presented results.

During the course I make it clear several times for the students that the final report is made from discussing own results and the results that the other groups present. I also clarify that if the groups doing active peer feedback take good notes and ask questions in order to understand the matter presented – then they have all the information needed for the report.

The change in course structure made the students realize how important it was to ask questions to the other groups results in order to understand the results and being able to discuss them in a final report. In order for this to work the different groups are working with different parts of an ecosystem and end up being able to do a total evaluation of the ecosystem. The final summative evaluation in form of a report, which has the purpose to activate the students in formative peer feedback work well.

Description of experiences with various supervision methods

I really like to supervise students and I'm in daily contact with the students that I supervise. I have experience with supervising students of all levels from laboratory technicians to Ph.D. students. The projects that I have supervised have a wide range from field sampling, laboratory experiments to theoretical projects and ecological modelling projects. I have both supervised groups and individuals.

Description of experiences with various analogue and digital teaching materials, including original productions

In all of the courses I have been teaching I have been involved in the coordination of the course and production of course material I have needed for my teachings. I have developed a wide selection of PowerPoints and exercises relevant for the scope of the courses. Furthermore, I have developed laboratory manuals, manuals for field work and have written a compendium. Video feeds in PowerPoints can be very useful to illustrate points and I have produced quite a few of those. I have furthermore created an introduction video to a field course (<https://www.youtube.com/watch?v=c2dSuw0Scto>). I use models in some of the courses I'm teaching and of that I have developed different ecological models for both streams and lakes that can be utilized for teaching purposes.

5. Educational development and educational research as well as educational awards

2019	I graduated The Lecture Training Programme including various courses about educational development. I made a project about how to motivate the student to prepare better for class.
2018	I have participated in colleague sparring program to facilitate development educational skills.
2017	I have held a course for EnviNa members on restoration and recreation of lakes.
2016	Participated in a board related to the study program of Nature and resources. This was regarding implementing a course "Water quality and environmental condition in lakes and streams" as limited optional, for the bachelor education in nature and resources.
2015	Constructive alignment of the course "Water quality and environmental condition in lakes and streams" in participation with study administration and head of studies.