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## Teaching experience

### Artificial Intelligence for Healthcare Data - Summer School E21

Jürgen Herp, Manuella Lech Cantuaria & Jan-Matthias Braun  
09/08/2021 → 20/08/2021

### Profylaktisk audiologi (co-teacher)

Manuella Lech Cantuaria & Jesper Schmidt  
01/04/2021 → 30/06/2021

### Videregående Audiologiske Målemetoder (co-teacher)

Manuella Lech Cantuaria & Christian Brandt  
03/09/2020 → 10/12/2020

### Profylaktisk audiologi (co-teacher)

Manuella Lech Cantuaria & Jesper Schmidt  
01/04/2020 → 30/06/2020

### Bachelor students supervision

Manuella Lech Cantuaria  
01/04/2016 → 30/06/2021

### Applied Statistics and Experimental Design (course for bachelor's students)

Manuella Lech Cantuaria  
01/03/2016 → 30/06/2016

### Applied Statistics and Experimental Design (external students)

Manuella Lech Cantuaria  
01/09/2015 → 30/11/2015

## Educational Development Experience

- Development of the course Artificial Intelligence for Healthcare Data (summer school)
- Development of a new format for the semester project on the master course Videregående Audiologiske Målemetoder (Audiology program)

## Teaching Skills and Philosophy

My teaching methods and philosophy are closely aligned to the Vygotsky's theory of learning and development. This approach views knowledge as a tool for problem solving, and the process of learning relies on placing people in their 'zone of proximal development' – where they can practice a skill or understanding with the support of a teacher (Harland, 2003; Kozulin, 2003). The teacher helps construct supportive 'scaffolding' by explaining and guiding students through new concepts, who then can build further upon existing knowledge and skills. The aim of this approach is to create a welcoming and encouraging learning environment for the students in order to facilitate effective learning. Thus, the role of the teacher is viewed as less of a 'transmitter' of knowledge and more as a guide who helps students understand and apply newly acquired skills in practice (Harland, 2003; Kozulin, 2003). This approach, therefore, supports the creation of a learning environment based on problem-solving activities, in which more complex concepts explained in lectures will be

visualized and practiced in various forms during group work.

In my teaching, especially for the courses which are focused on Master students, I make an effort to engage the students in real research scenarios, by designing different in-class activities based on research papers' interpretation, discussion of research results, and real research scenario tasks. In this context, I have also re-structured the assessment method (i.e. semester project format) of one of the courses I was teaching to students of Audiology, by creating an active and encouraging learning environment for students and facilitating effective learning and participation in "real-life" research projects. Using the diagram proposed by Healey (2005) on the different ways of connecting research and teaching, this new project format was designed to emphasize research processes and problems and to place students as participants in research processes. Given all knowledge in audiology built upon the previous semesters, students were put in a situation where they had to identify and formulate a research problem that they think is relevant within the field, and define the appropriate framework for that. Students also had to evaluate the research project of their peers, as a way to engage them in research discussions and develop their critical skills. All in all, I believe this project format has increased the students' engagement with a super complex world, as they not only improved and acquired new skills (e.g. how to conduct a research project, and how to write a scientific report), but they also learned how to produce and how to be critical with their own and their peers' research framework.

### **References**

- Harland, T. (2003). Vygotsky's Zone of Proximal Development and Problem-based Learning: Linking a theoretical concept with practice through action research. *Teaching in Higher Education*, 8(2), 263-272. doi: 10.1080/1356251032000052483
- Kozulin, A. (Ed.). (2003). *Vygotsky's educational theory in cultural context*. New York: Cambridge University Press
- Healey, M. (2005). Linking research and teaching: Exploring disciplinary spaces and the role of inquiry-based learning. In: R. Barnett (Ed.), *Reshaping the university. New relations between research, scholarship and teaching*. (1st ed., pp 67-78). Open University Press