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HALLITUKSEN  
KÄRKIHANKE

AINEDIDAKTINEN OSAAMINEN

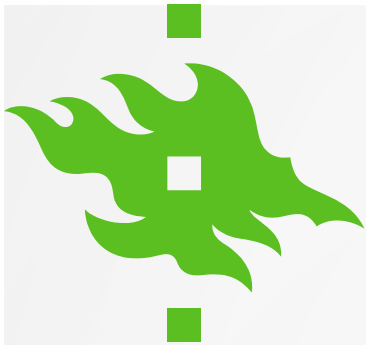


AMMATILLINEN KEHITYMINEN

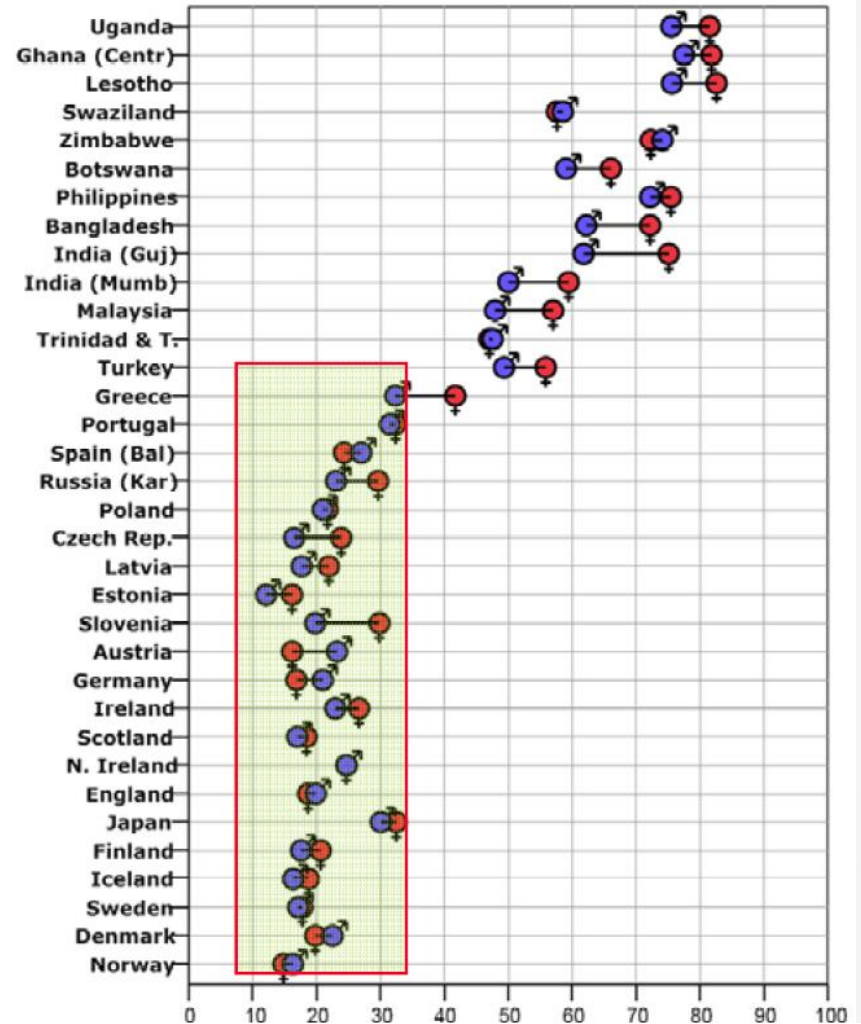
# DEVELOPING BIOLOGY TEACHERS' PROFESSIONAL GROWTH AND DIDACTIC SKILLS

Kurt Fagerstedt  
University of Helsinki / Faculty of Biological and Environmental Sciences

# INTRODUCTION

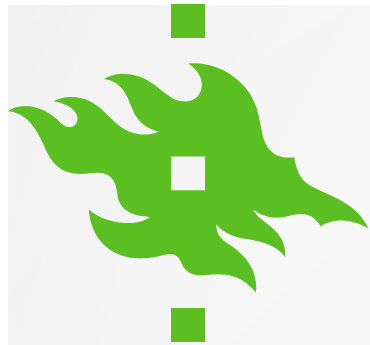


- Declining interest in science among children and youth (e.g. ROSE, PISA)
- Especially boys are less interested in science than before
- Biological topics are not perceived to be relevant for everyday life
- **There is a growing need to educate better teachers as eg sustainability and biology behind this is vitally important for the world!**



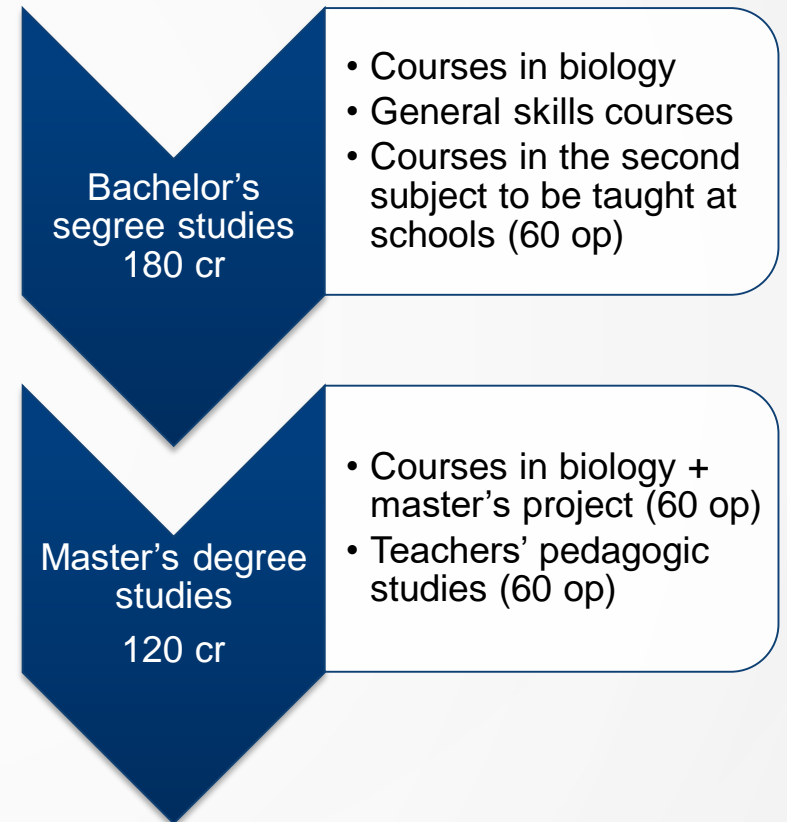
Interest level (%) in 'How plants grow and reproduce'. From Sjøberg & Schreiner, 2010.

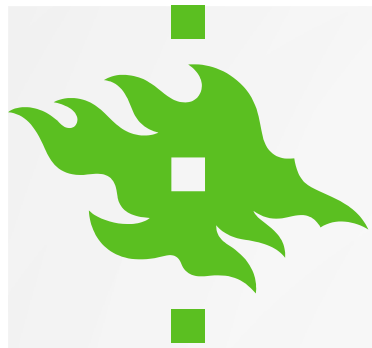




# BACKGROUND

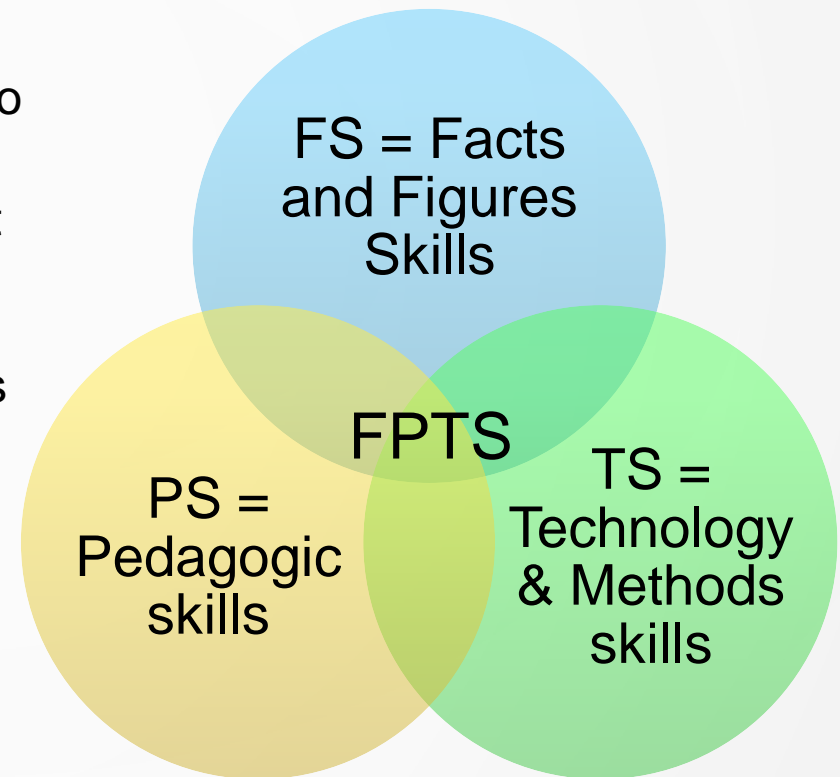
- **Biology teachers do 80 % of their studies in our own Faculty!** → How can we support professional growth already during their Bachelor studies?
- The present study structure places the pedagogics course towards the end of the Master's degree. → As the students have to choose their teacher identity already at the Bachelor level, we have to develop our pedagogics studies at the Bachelor, level, too.





# CHALLENGES WITH THE PRESENT TEACHERS' EDUCATION

- Challenges in contents of studies:
  - Concentration in one subject leads to less wide skills in factual knowledge
  - The connection between the subject Faculty and pedagogic studies is weak
  - No teacher-student directed courses before the pedagogics courses in biology
  - No biology teacher-student societal context and hardly any connections with other teacher-students nor with schoolteachers before the pedagogics courses

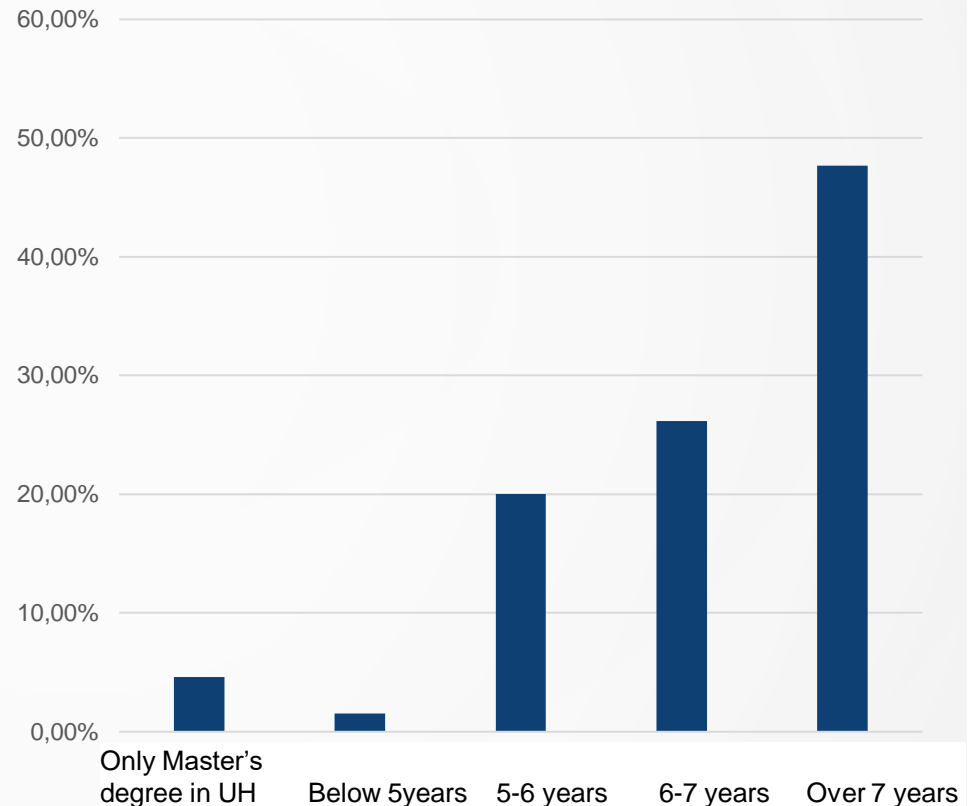




# CHALLENGES IN THE PRESENT TEACHER-STUDENT EDUCATION

- Structural challenges:
  - Pedagogics studies are placed at the end of studies → Little time for development of professional growth and status
  - Degree programmes are tight, (few optional courses)
  - Degree programme is fragmented
  - Degrees take a long time, and are overly large with students of two subjects
  - "Demands and offers" do not always meet

Length of studies of biology teacher-students

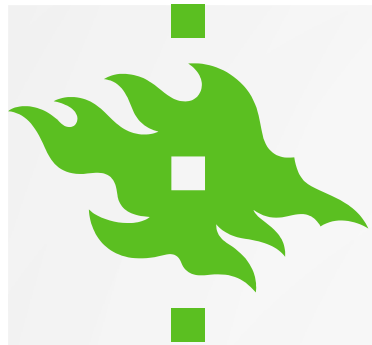




# AAKE-PROJECT

- "Developing Biology Teachers Professional Growth and Didactic Skills in Natural sciences"
- The aims are:
  - To develop a work-life study module for BSc level
  - To develop a mentoring system between teachers and students with a continuum
  - To develop **supplementary teaching material for schoolteachers** in the form of a MOOC.
- During the project **research data** is collected from the students and of all the actions in the project

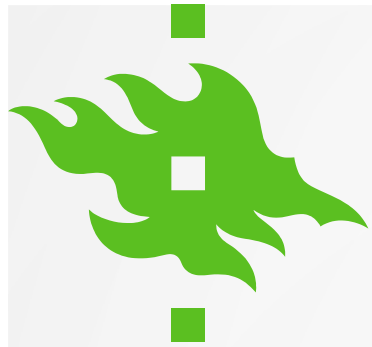




# ACTION MODELS DEVELOPED IN THE AAKE-PROJECT



- Worklife studies (5 cr)
  - A practical course has been created to help in the development of working life skills in teacher students
  - "Beginner's guide to practical didactics in biology and Geography" has been written
- Worklife practice in BSc degree studies (5 cr)
  - A tailor-made practical experience for the BSc-level
- Teacher-mentors for BSc students
  - Experienced schoolteachers as mentors
  - The students work together with schoolteachers in schools
  - Our students prepare teaching material for the schoolteachers and organize a visit to the University → Reciprocity created
- Supplementary teaching material prepared for schoolteachers by our students



# TOPICS FOR DISCUSSION IN THE AFTERNOON NETWORKING SESSION

- How is schoolteachers' education organized in you Faculty or Institution?
- How to ensure enough knowledge in the subject as well as orienteering towards a professional teacher's career?
- How do we organize a streamlined schoolteacher's curriculum in BSc and MSc studies?
- How to advance the development of wide-scale abilities in factual knowledge and didactic skills?
- How to create distinct connections between the teacher's pedagogic studies (60 cr) at the Faculty of Educational Sciences and studies in our Faculties?
- At what stage should application to teachers' studies take place: Directly at the entrance level or later during the studies?



# THANK YOU FOR YOUR ATTENTION!

I am looking forward to  
interesting discussions in the  
afternoon session!

