



KTH IT Portfolio for education

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Digital Learning division

Digital learning is a division within the Department for Learning in Engineering Science at the School of Industrial Engineering and Management (ITM) at KTH Royal Institute of Technology

Staff

- 25 employees in total.
- 4 senior researchers.
- 6 PhD students, 1 post doc.

Areas of operation

- Research.
- Postgraduate education.
- Courses in digital learning in higher education, lifelong learning and teacher training.
- Development of KTH's digital educational environment and education/supervision of teachers.
- Course development in collaboration with different subjects.

Research in Digital Learning

Research profile

- Research in compulsory school, upper secondary school, higher education and popular education.
- Participates in three VR-funded graduate schools.
- One of the leading developers of Community of Inquiry.
- Special interest in design research and integrated research and development,

Current external funding

- Swedish Research Council (VR)
- Marcus and Amalia Wallenberg
- Erling Persson Foundation (H&M)
- School principals
- Swedish Council for Higher Education (UHR)
- Digital Futures

Key research areas

- The development of the teacher's role in a digital world.
- Digital assessment and examination.
- Collaborative digital learning.
- Learning in hybrid environments.
- How students support their own and others' learning.
- AI and supervision of students.
- Critical studies of the future of education.

Constructivist Learning



Social/Collaborative Constructivism



Social collaborative discourse

Critical thinking, reflection, individual analysis. ...



KTH Digital Learning Environments





Overall goal

...it should be just as natural for KTH's courses to be conducted in digital as in physical environments.

Blended learning

... **organic** integration of thoughtfully selected and complementary face-to-face and online approaches and technologies.

... an opportunity to **fundamentally redesign** how we approach teaching and learning in ways that higher education institutions may benefit from increased effectiveness, convenience and efficiency.

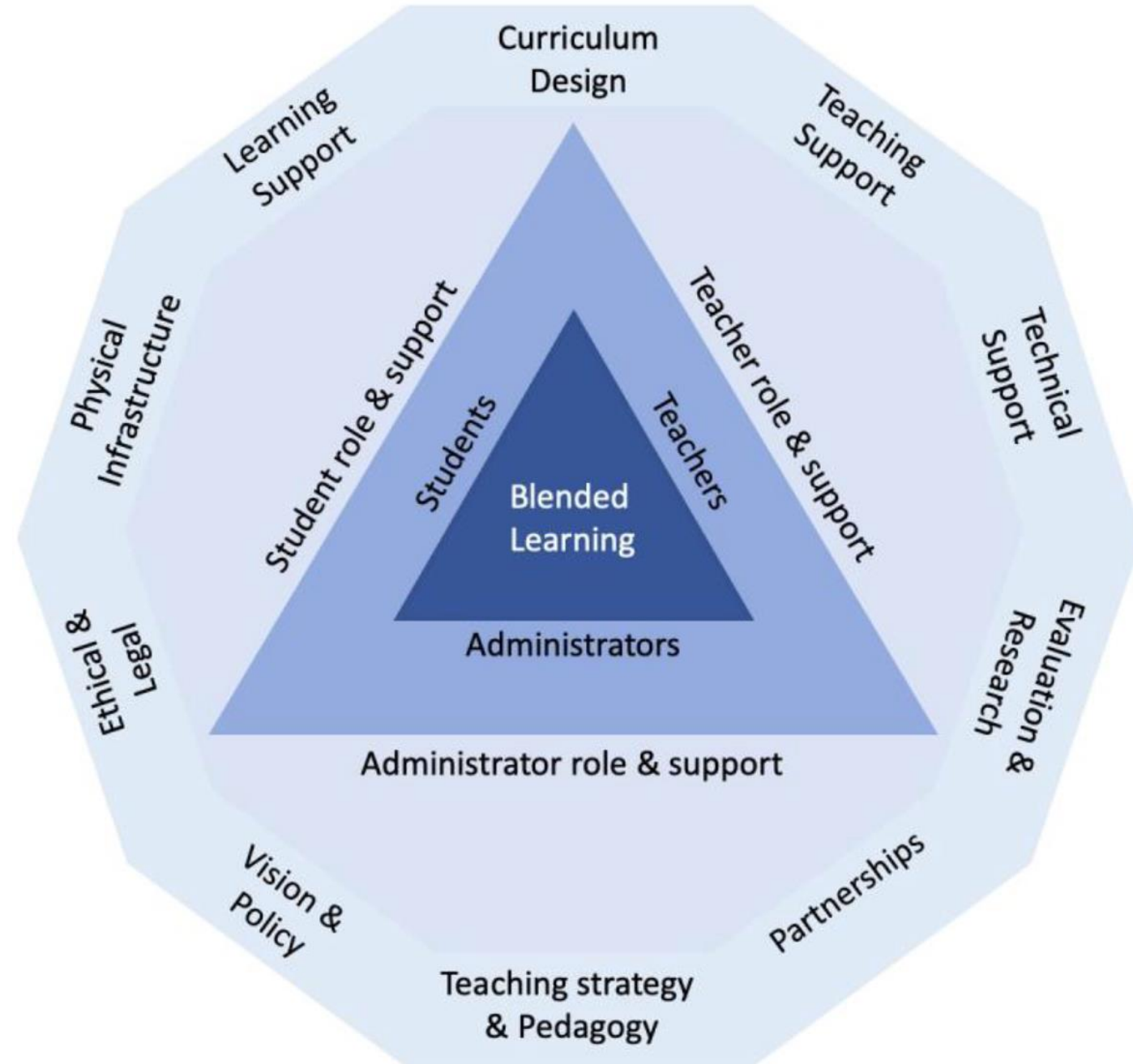


Perspectives

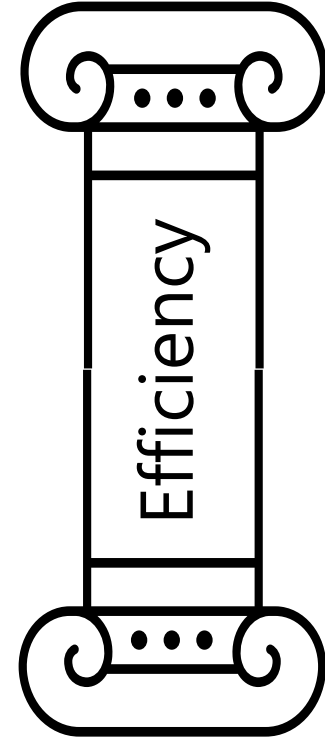
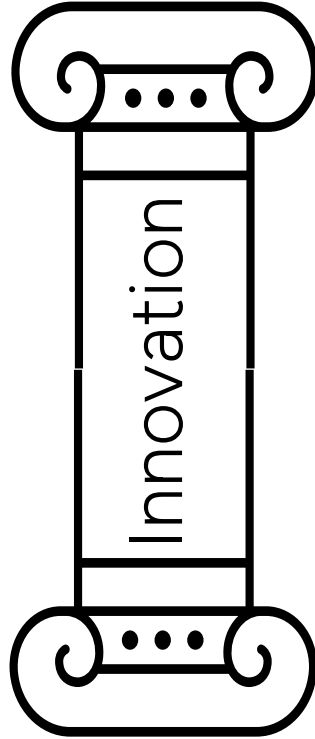
Access to a digital educational environment of high international standard.

Skills and abilities to co-create digital education of high international standard.

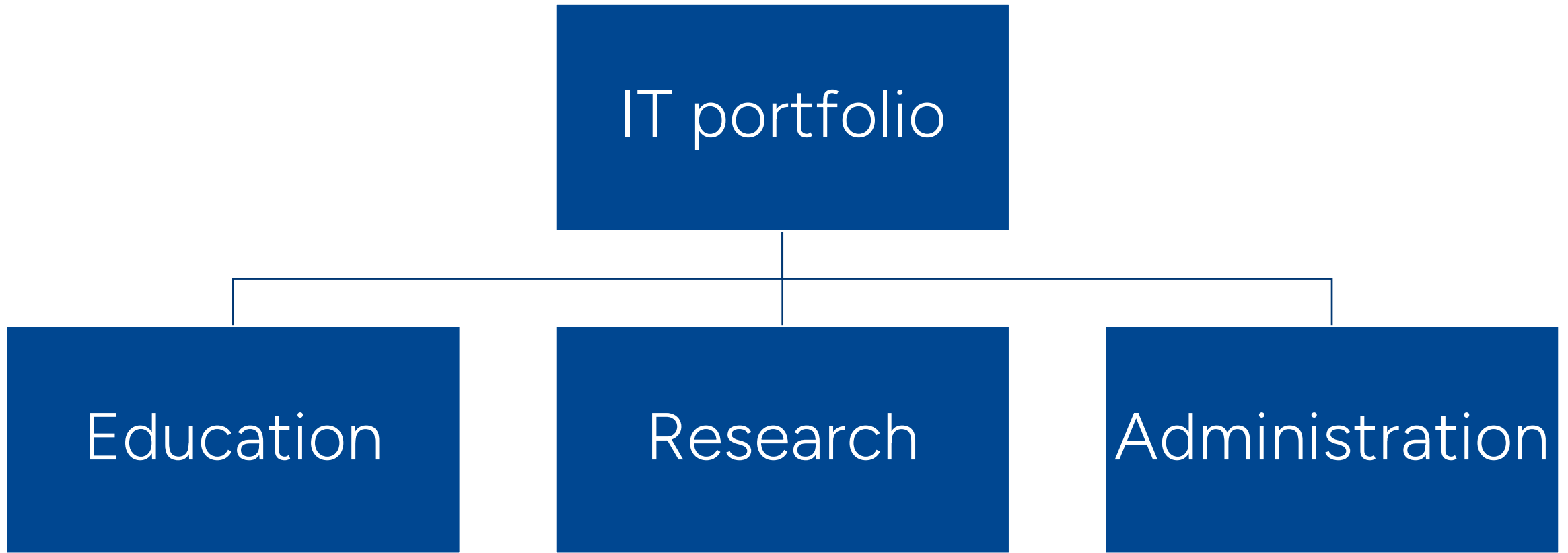
Perspectives in reality



The two pillars



KTH IT-portfolio



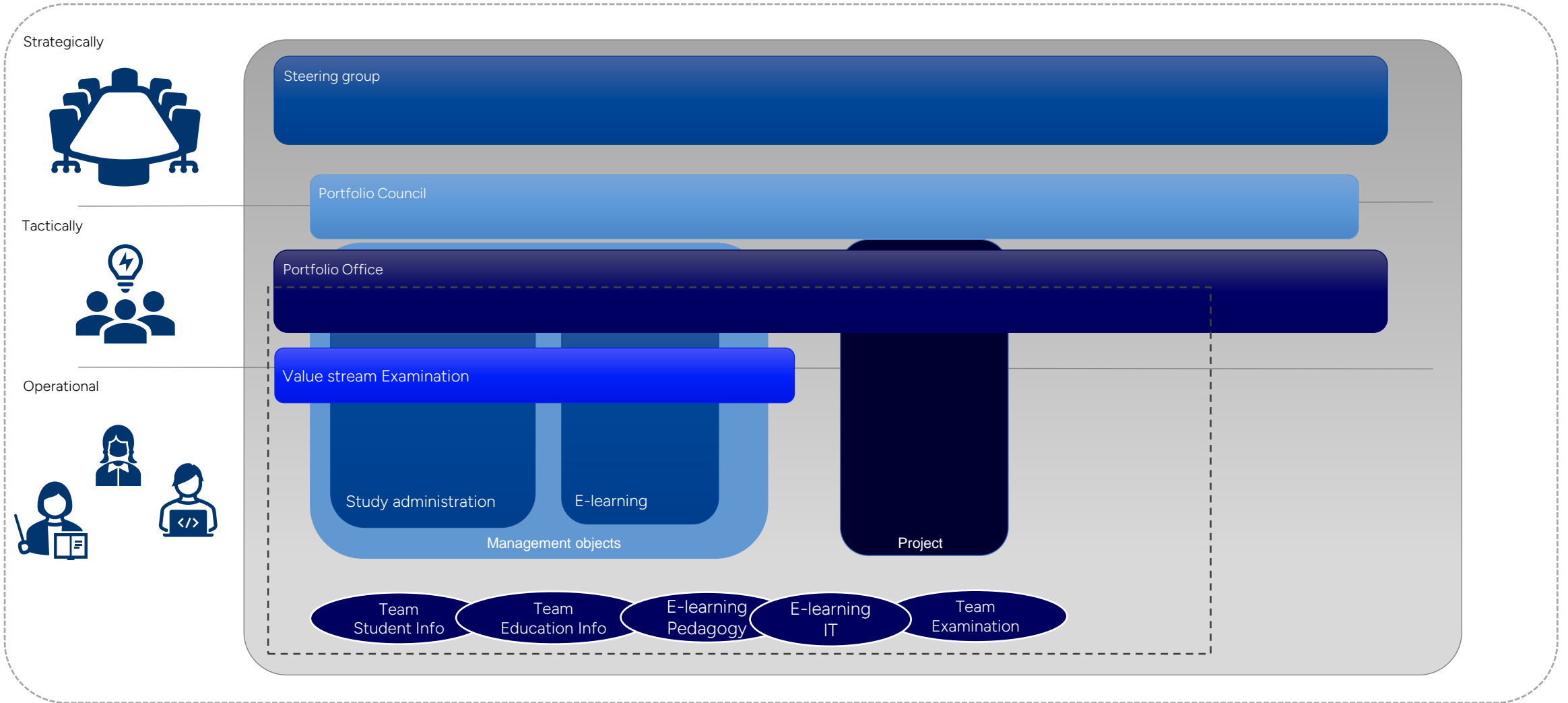
Mission

The portfolio for educational IT coordinates and is responsible for digitalization initiatives and management of the education's IT support at KTH.

KTH Portfolio for Educational IT:

- provides teachers and administrators with the tools to create world-class education programs,
- offers teachers a way of working that is efficient, pedagogical and legally secure,
- is perceived as a whole and is constantly evolving to automate work and offer new opportunities to enhance the quality of education.

Organization



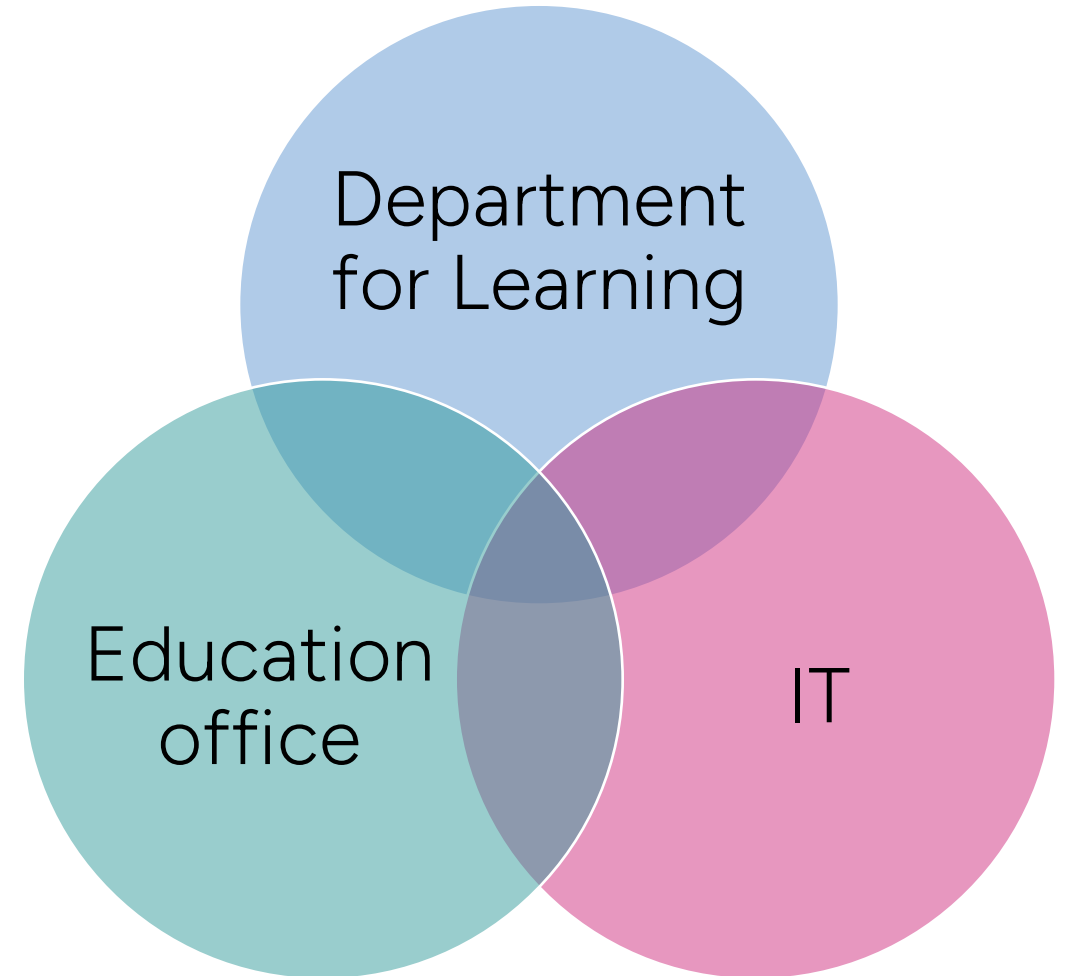
Steering group

Representation	Person
Chair / Research	Stefan Stenbom (ITM/LES)
Students	Maja Rosén (THS)
Director of First and Second Cycle Education (GA)	Eva Liedholm Johnsson (ABE)
Director of Third Cycle Education (FA)	Christina Divne (CBH)
Education administration managers (UA)	Marianne Lundin (EECS)
Director of Studies	Katarina Gustavsson (SCI/Math)
Management	Leif Kari (KTH VP Education)
Departement for Learning	Arnold Pears (ITM/LES)
Education Office (Owner study admin)	Katarina Johnsson Berglund (VS/EDO)
IT departement	Hans Wohlfarth (VS/IT)
Owner E-learning	Tecla Malmström (ITM/LES)
Owner IT	Bo Sundin (VS/IT)
Education Portfolio Office	Maria Lingman (VS/IT)

Matrix organization

The teams within the education portfolio is staffed with personnel from mainly IT and Education office at the university administration and from the Department for Learning.

- Project/team leaders
- Programmers
- Researchers
- Specialists
 - Learning design
 - Education administration
 - Teacher support/supervision
 - Tech solution
 - UX
 - Communication



KTH:s Digital Learning Environment



- Personal menu
- Course- and program catalogue
- About the course
- Admission
- Doctoral study plan
- Exam scanning
- Exam admin

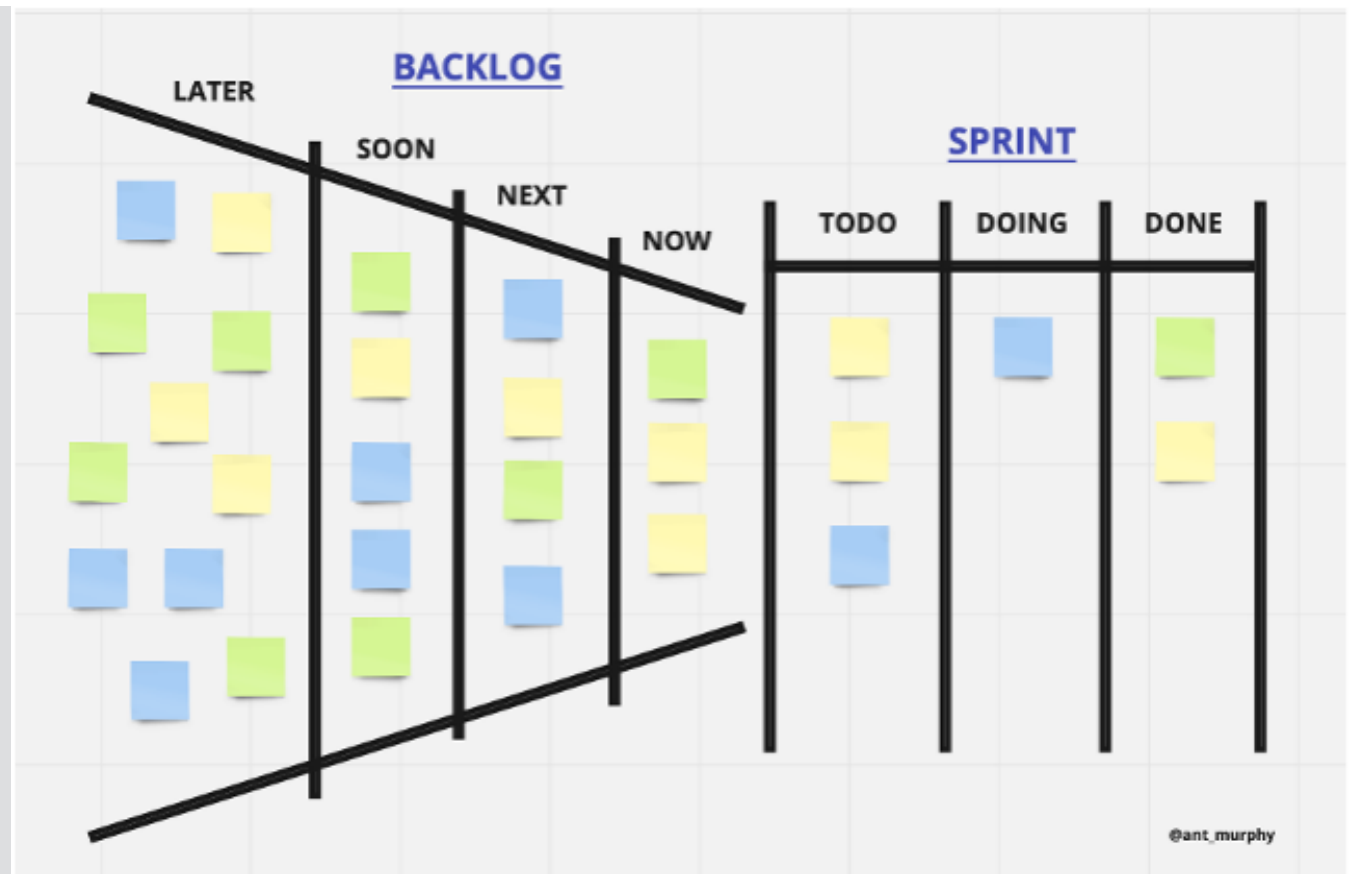
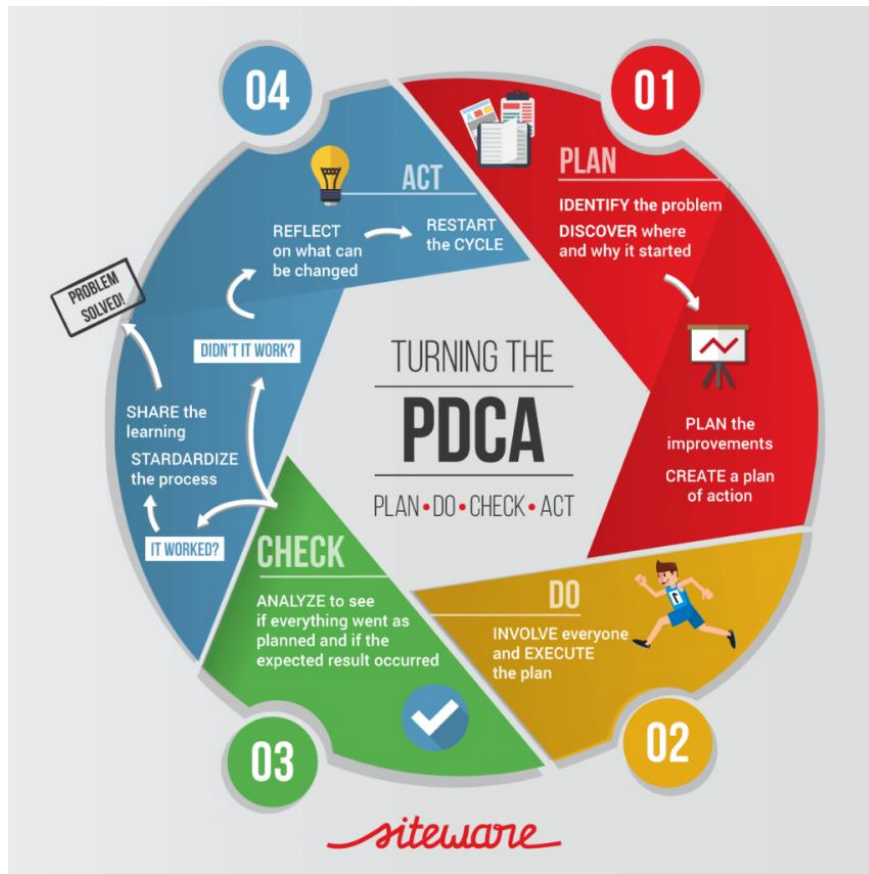
In total, about 30 systems



Examples of current strategic important activities

- Educational planning system (replace/improve)
- Course evaluation and analysis (replace/improve)
- Anonymous assessment (introduction)
- Value stream for Examination (establish)

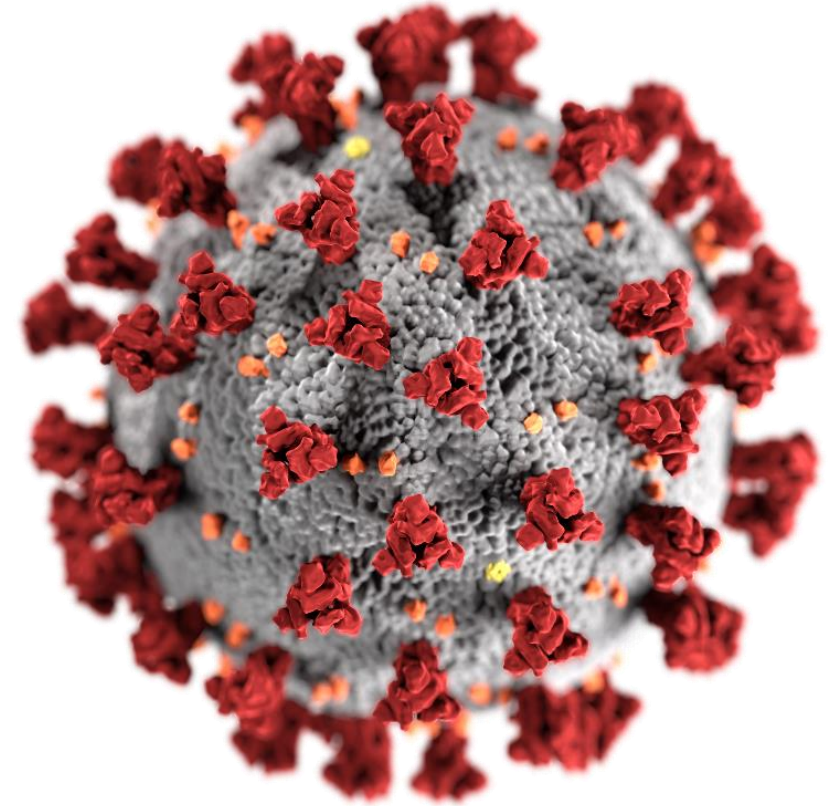
Agile approaches



Covid-19

Crisis organization for education

- Extended committee for first and second cycle education.
- Appointed an operational leader (me) to coordinate and prioritize KTH's resources (with steering group of department heads)
- Established the Taskforce for digitalization of education



Mission for the Taskforce for digitalization of education

- Digital infrastructure (capacity).
- Teacher support, education, and supervision.
- Administrative routines.

Teaching and learning during Covid-19

Scale

Emergency remote teaching

Education should be based on
research and **proven experience.**



Complexities of Educational Culture for Integrated Campus and Digital Education



Purpose and RQ:s

Purpose

Identify motivators and deterrents for traditional HEIs' development of integrated campus and digital education.

Research Questions

1. How do teachers, students, and educational leaders describe the educational culture at a traditional technical university?
2. What incentives are discussed by teachers, students, and educational leaders as drivers for integrated and combined campus and digital education?

Method

- Focus group discussions with teachers, students, and educational leaders.
- Five focus groups met on two occasions.
- Analyzed using reflexive thematic analysis.





Findings

Culture

- Multiple educational cultures
- Streamlining education
- COVID-19 as a game changer

Incentives

- Clear goals, unclear incentives
- From vision to action
- Conditions for development
- Students as drivers

Q & A

Here are links to the material I referred to during the Q&A session.

- Teaching science labs online:
 - <https://www.aupress.ca/books/120162-accessible-elements/>
 - <https://learn5.open.ac.uk/>
- Examples of set ups and products for sharing annotations in a digital meeting
 - <https://www.wacom.com/en-us/products/pen-displays>
 - https://play.kth.se/media/Inspelning+av+whiteboard/O_e4g63d3l
 - https://play.kth.se/media/Hemmagjord+dokumentkamera/O_9ybue328
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KTH

VETENSKAP
OCH KONST