FOLLOW-UP WORKSHOP ON THE AARHUS UNIVERSITY DIGCOMP EXPERIENCE

Agenda:

- Short introduction to Aarhus University
- How do we work with our Faculties?
- Step 1-3 of the workshop
- Summery step 4
- Evaluation

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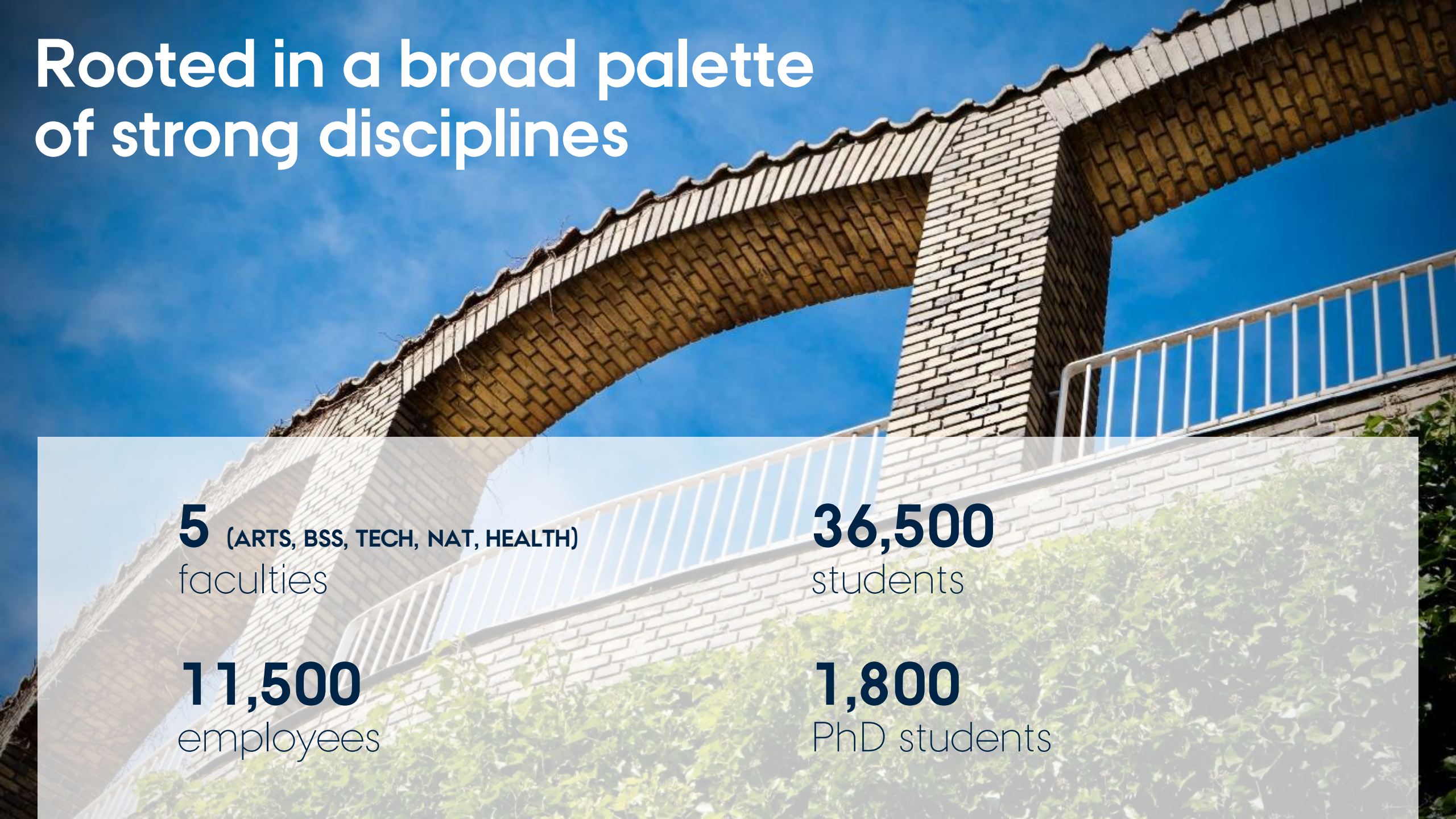
A national university

RESEARCH AND EDUCATION

RESEARCH ACTIVITIES AND OTHERS

AARHUS UNIVERSITY

Rooted in a broad palette of strong disciplines



5 (ARTS, BSS, TECH, NAT, HEALTH)
faculties

36,500
students

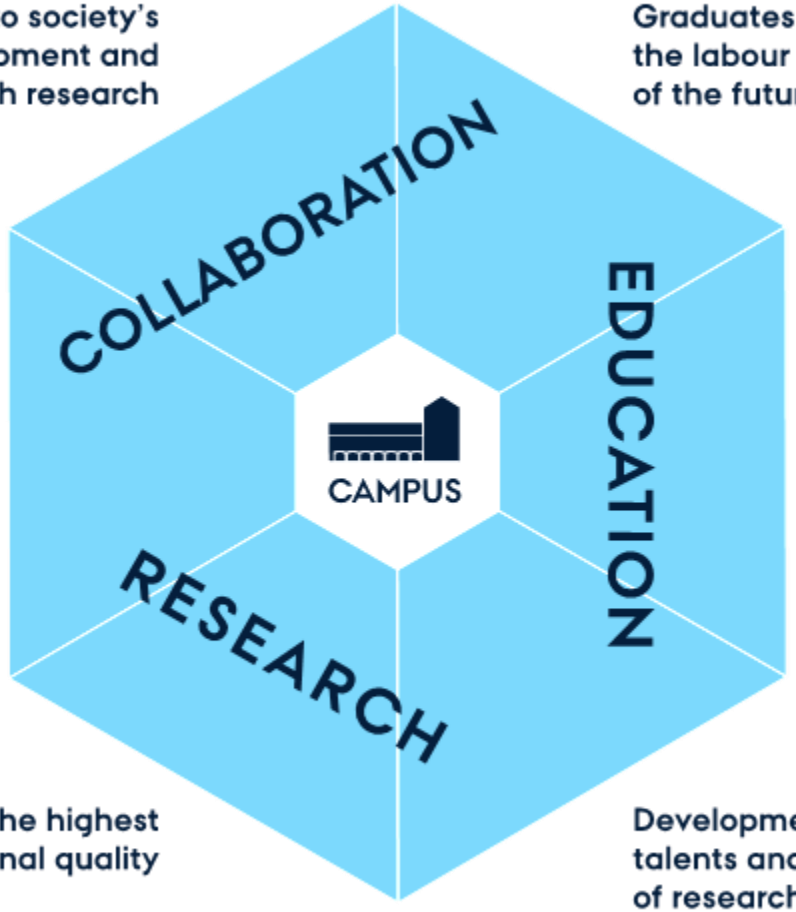
11,500
employees

1,800
PhD students

Strategy 2020-2025

Contributing to society's development and welfare through research

Graduates for the labour market of the future



Interdisciplinary research to address societal challenges

Research-based degree programmes of the highest international quality

Research of the highest international quality

Development of research talents and integration of research into the degree programmes

"Digital competencies for all students"

HOW DO WE WORK ON DELIVERING "DIGITAL COMPETENCIES FOR ALL STUDENTS"?

- **Common terminology for Digital competencies**

- Focus on the written curriculum of the educations
- Respect for the individual educations and subjects
- Focus on Exam forms
- Workshops for individual educations (Step 0-4)

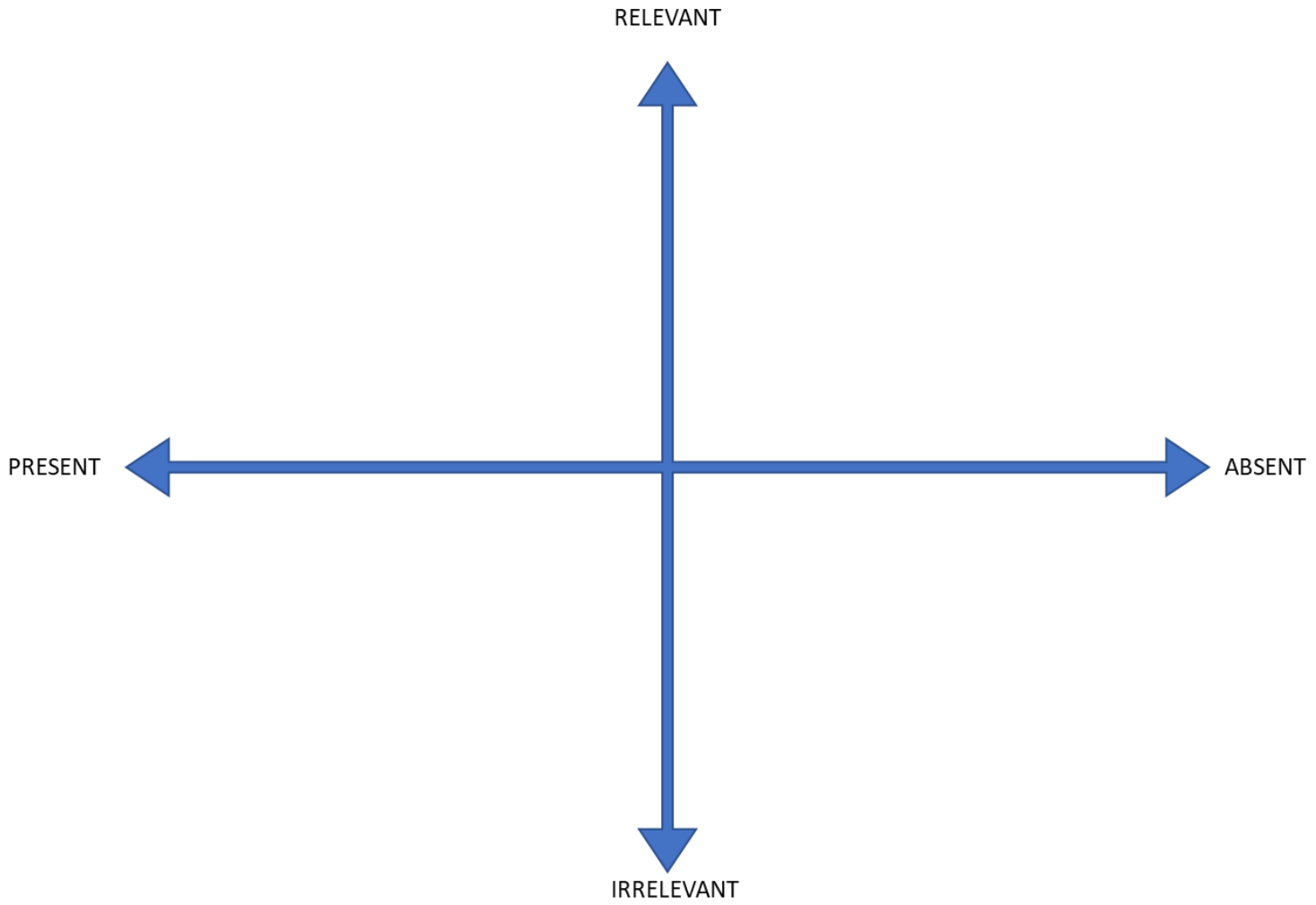
- Deliver **suggestion** for future process for the individual educations

STEP 0

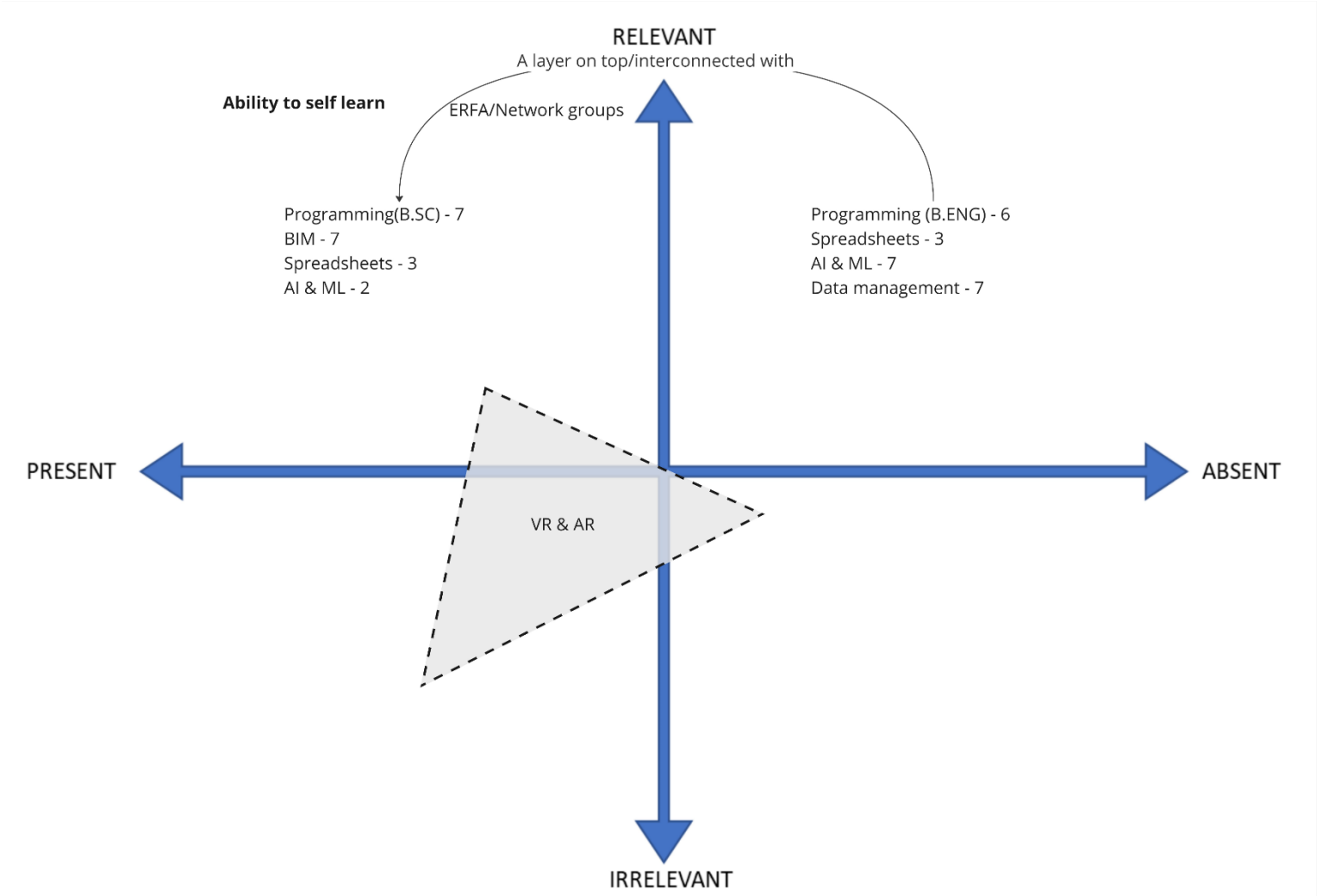
To get all participants activated and aligned towards thinking on:

1. **Digital competencies for FUTURE graduates**
2. **The issues of NOT having a terminology**
3. **Looking across the semesters**

STEP 0: MAPPING AND PRIORITISING DIGITAL COMPETENCIES



RESULTS STEP 0: DEPARTMENT OF CIVIL AND ARCHITECTURAL ENGINEERING



STEP 1

HTTPS://PADLET.COM/MADS/DIGCOMP23

Less relevant		Relevant		Most relevant
-2	-1	0	+1	+2

PROBLEM SOLVING

INFORMATION AND DATA LITERACY

DIGITAL CONTENT CREATION (creativity)

COMMUNICATION AND COLLABORATION

SAFETY AND RESPONSIBILITY

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POPULAR EDUCATIONS

1. Business

Median Annual Salary (May 2020): $72,250

Job Growth Rate (2020-30): 8%

Common Specializations: Accounting, business administration, business intelligence, business management, entrepreneurship, finance, international business

2. Health Professions

Median Annual Salary (May 2020): $69,870

Job Growth Rate (2020-30): 16%

Common Specializations: Health informatics, health sciences, health services, healthcare administration, healthcare management, medicine, nursing, nutritional science, public health, sports medicine

3. Social Sciences and History

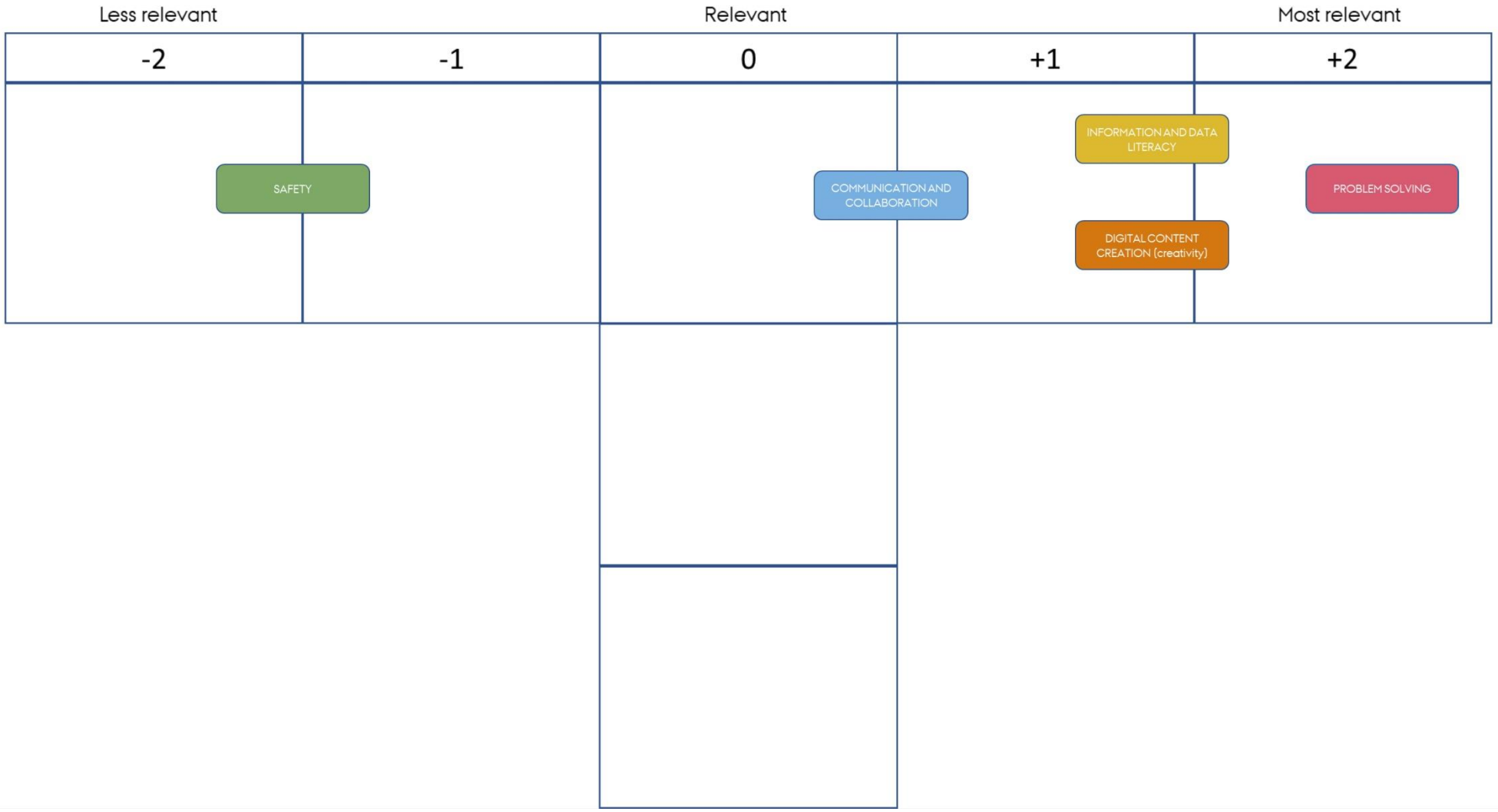
Median Annual Salary (May 2020): $69,760 (all life, physical, and social sciences)

Job Growth Rate (2020-30): 8% (all life, physical, and social sciences)

Common Specializations: Anthropology, criminology, economics, geography, history, legal studies, political science, social work, sociology

https://www.bestcolleges.com/blog/most-popular-college-majors/

STEP 1: SUMMARY



Model for Digital Competency Development

Digitally Competent Graduates from_____

Faculty level

Competency element

Programme level

Themes, curriculum, and competence profile

PROBLEM SOLVING	DIGITAL CONTENT CREATION (creativity)	INFORMATION AND DATA LITERACY	COMMUNICATION AND COLLABORATION	SAFETY

Source: Hansen and Dahl, 2023

STEP 2: DETAILED VIEW

Programme level

Information and data literacy

Data management
- Data managment
- Data handling

(Data) analysis
- Data analysis
- Analysis (Digital)
- Research and analysis
- Analyze and evaluate results
- Dataset analysis
- Analyzing datasets

Misc
- BIM
- Collecting data

AI & ML
- Critical use of AI
- AI

Communication and collaboration

Communication as engineer
- Digital interdisciplinary professionel communication
- Professional communication
- Scientific communication
- Communations tools
- Most effective way to communicate
- Project owner/engineer communication
- Scientific communication and collaboration
- Professional collaboration and communication

Collaboration
- Team work
- Digital collaboration
- Collaboration
- Interdiscplinary collaboration

Tools for collaboration
- Digital platforms
- Collaboration between tools
- Digital collaboration platform
- Collaborative technologies

Sharing (Information and data)
- Data sharing
- Information sharing

Writing and presenting
- Reporting
- Writing skills
- Presentation skills

Digital content creation

Creating and modifying
- Create & modify digital content
- Assertive production of drawings and reports
- Visualization of data/design
- Digital representation
- Digital fabrication
- Scoping of the digital product

Thinking and learning
- Critical thinking
- Independent learning

Creation of digital tools
- Tools development
- Tool design
- Programming

Misc
- Open mind
- Parametric design

Safety

Data safety
- Data security
- Data protection
- Storage/backup of digital files
- Ownership of data
- Protect sensitive data
- Data storage
- Information safety

Misc
- Copyright
- Online behavior
- Awareness of phising
- Digital risks
- Cyber security

Problem solving

Misc
- Problem identification (read charts, drawing...)
- Problem identification
- Chosing a model
- Select the right tool
- Identifying and utilizing digital tools
- Analyze and evaluate solutions
- Solution framing
- Analyszye situation
- Simulation based problem solving
- Assess information
- Simulations to analyze
- Analyse information

Critical thinking
- Critical & creative holistic thinking
- Critical thinking
- Critical of the calculation program
- Critical analysis

Computer assisted work
- CAD
- CAM

Misc
- Interdisciplinarity
- Methodology
- Innovation

Computational thinking
- Computational engineering
- Computational thinking
- Algorithmic thinking

Course teaching level

Information and data literacy

Data handling & sourcing
- Database management
- Data sourcing
- Data resourcing
- Data bank
- Data handling
- Data collection

Statistics
- Data filtering
- Statistics

AI & ML
- Machine learning
- Training of neural networks

Misc
- File sharing course
- Technical report
- Peer teaching and feedback
- Research methodology
- Interdisciplinary projects
- Online image

BIM
- Revit
- BIM

Communication and collaboration

Tools for collaboration
- Reports and presentations using digital tools
- Presentation skills and tools
- Active use of platforms in group work

Group work
- Groups and project work
- Group working
- Team work

Misc
- File sharing course
- Technical report
- Peer teaching and feedback
- Research methodology
- Interdisciplinary projects
- Online image

VR
- BIM + VR
- VR

Digital content creation

Programming
- Advanced programming lanuage
- Programming
- Computer programming & Algorithms
- Programming
- Algorithmic creation

Modelling
- Digital models
- Computer modelling
- Building models and prototyping
- 3D modelling ← - - - - - - → 3D printing

Misc
- Sensitivity analysis
- Experiment design
- CAD programs

BIM
- BIM
- BIM & VR
- Revit

AI
- AI

Safety

- Cloud storage
- Quality assurance & safety
- Data exhange with companies
- Robustness of solutions
- Data security

Problem solving

Use of digital tools
- Solve tasks using commercial software
- Numerical tools
- Teaching different digital tools
- Critical assessment of software results

Modelling & design
- Modelling
- Modelling structures and alternatives
- Building performance simulations
- Numerical models
- Computational design
- Applied simulation

Programming
- Programming
- Programming
- Algorithmic application
- Computer models

Misc
- BIM
- Reading charts, drawings
- Exhaustive seach of errors
- Smart devices
- Complex design
- Presenting tools to self learn
- Digital manufacturing
- Process
- Selecting and producing data

AI & ML
- AI
- ML

Projects
- Semester projects
- R&D projects

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Model for Digital Competency Development

Digitally Competent Graduates from CAE

Faculty level

Competency element

Programme level

Themes, curriculum, and competence profile

PROBLEM SOLVING	DIGITAL CONTENT CREATION (creativity)	INFORMATION AND DATA LITERACY	COMMUNICATION AND COLLABORATION	SAFETY
Computational thinking	Creating and modifying	Data management	Sharing Data / Information	Data safety
Framing and evaluation	Ability to self learn	Data analysis	Eng. Digital terminology	
Computer assisted work	Digital tool development	AI and ML	Eng. Digital collaboration	
Critical thinking			Eng. Writing disciplines	
			Presenting and mediation	

Source: Hansted and Dahl, 2023

STEP 3: Model for Digital Competency Development

Digitally Competent Graduates from _____

	PROBLEM SOLVING	DIGITAL CONTENT CREATION (creativity)	INFORMATION AND DATA LITERACY	COMMUNICATION AND COLLABORATION	SAFETY
Faculty level Competency element					
Programme level Themes, curriculum, and competence profile					
Course/teaching level Subject integration and learning objectives **(examples)**					

Source: Hansen and Dahl, 2023

GROUP NO:____ DATE: _____

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Model for Digital Competency Development

Digitally Competent Graduates from CAE

	PROBLEM SOLVING	DIGITAL CONTENT CREATION (creativity)	INFORMATION AND DATA LITERACY	COMMUNICATION AND COLLABORATION	SAFETY
Faculty level Competency element					
Programme level Themes, curriculum, and competence profile	Computational thinking Framing and evaluation Computer assisted work Critical thinking	Creating and modifying Ability to self learn Digital tool development	Data management Data analysis AI and ML	Sharing Data / Information Eng. Digital terminology Eng. Digital collaboration Eng. Writing disciplines Presenting and mediation	Data safety
Course/teaching level Subject integration and learning objectives **(examples)**	Use of digital tools Modeling and design Programming	Programming Modeling BIM AI	Data handling & sourcing Statistic Spreadsheets AI and ML BIM	Tools for collaboration Group work Network and ERFA VR/AR	

Source: Hansted and Dahl, 2023

GROUP NO:____ DATE: _____

Common Faculty Model for Digital Competences

Digitally Competent Graduates at the Faculty of Health

	PROBLEM ANALYSIS AND CRITICAL THINKING	SAFETY AND RESPONSIBILITY	CREATIVITY	INFORMATION AND DATA LITERACY	COMMUNICATION AND COOPERATION
Faculty level Competency element					
Education Level Themes, curriculum, and competence profile	Computational thinking Methodology	Information security Legal classifications Ethics	Create content Innovation Development	Data handling Data management Data analytics	Scientific communication Client/Patient communication Citizen involvement Interdisciplinary collaboration Professional communication Professional collaboration
Course/teaching level Subject integration and learning objectives **(examples)**	- Artificial intelligence - Digital technologies - Research based	- GDPR - Data security - Privacy - Legislation	- Entrepreneurship - Image processing and analysis - 3D printing - Open assignments - Programming - Algorithms	- Big Data - Information search - Statistics - Databases - Documentation - Machine Learning	- Telemedicine - Journalizing - Group work - Study groups

Source: Hørsted and Dahl, Taskforce Health, 2023

FUTURE PROCES

- By chosing competency goals, we can explore how they are supported today and how they can be strengthed in the future
- Examples
    - Data management: Teaching library with datasets
    - Programming (Python in Excel)
    - AI tools
    - Communication and collaboration
    - Exam forms
- PIX: Online training digital competencies (Pilot at Aarhus stared on 2. Oct)

AARHUS
UNIVERSITY

SLIDE INSPIRED BY WORKSHOP PARTICIPANTS

Proficiency level (PL) development through the educational system