Current trends and future directions for doctoral education in Europe
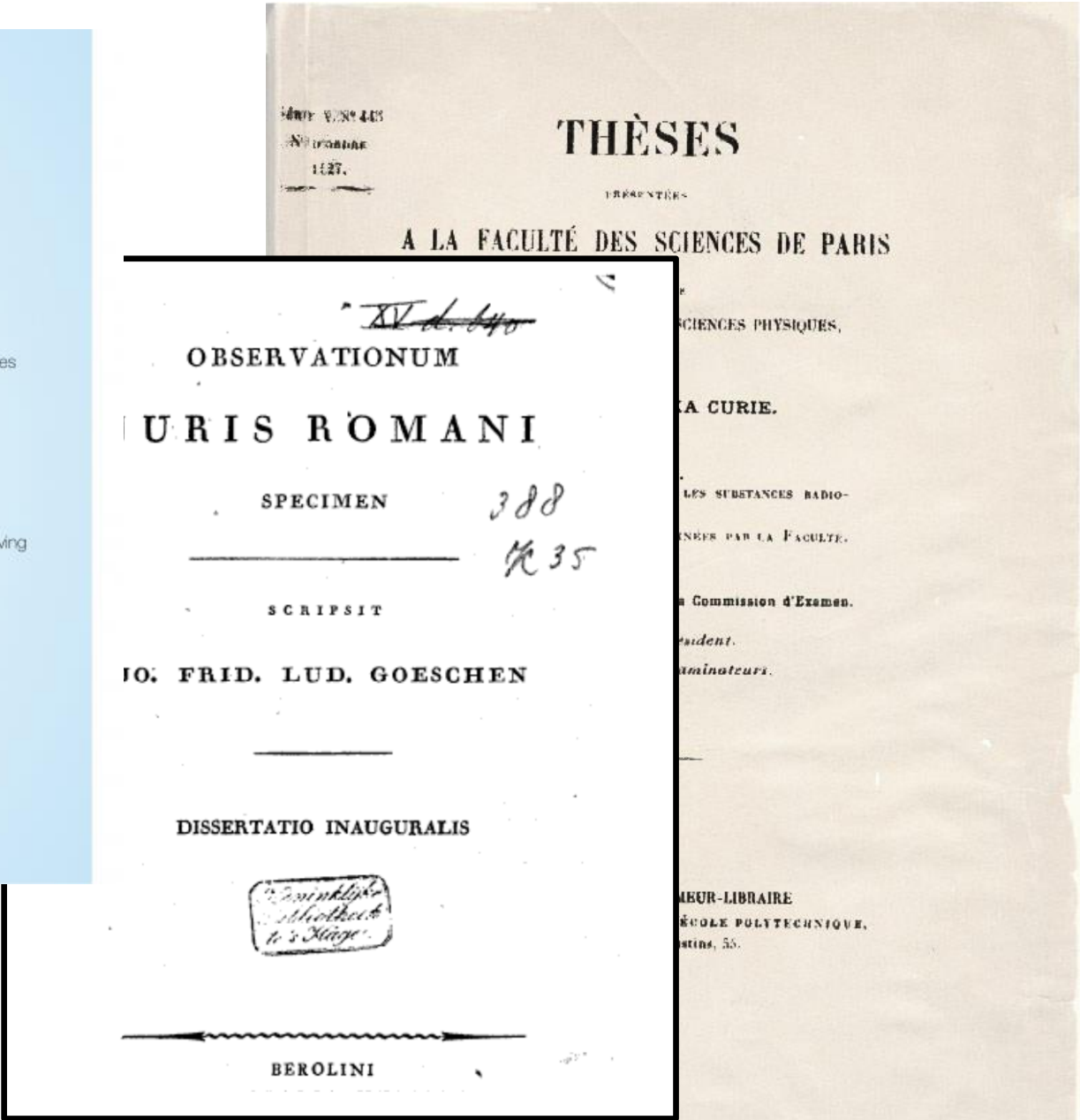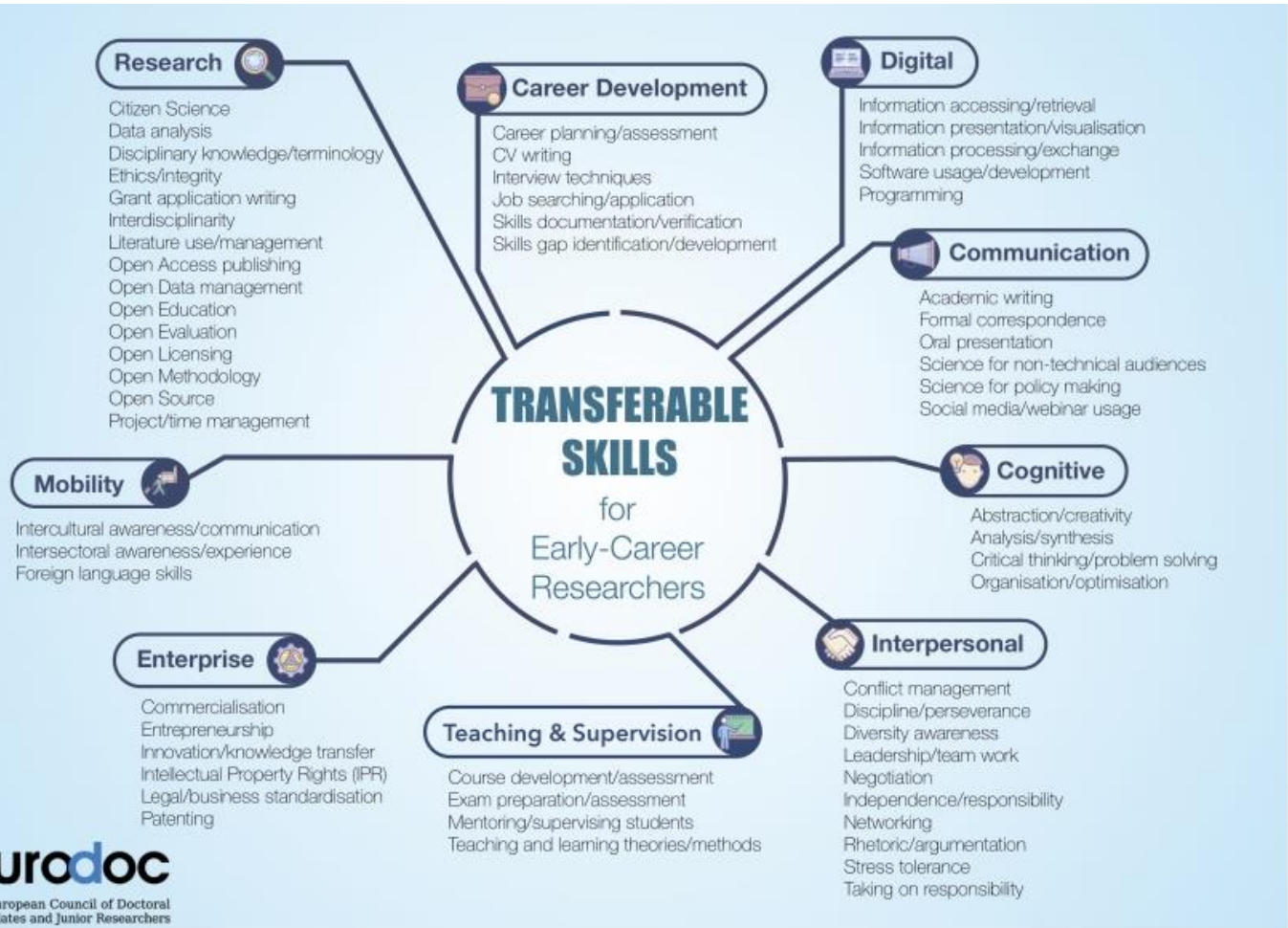
Dr Alexander Hasgall

From the middle ages to the modern knowledge society

TRANSFERABLE SKILLS for Early-Career Researchers

Research
Citizen Science
Data analysis
Disciplinary knowledge/terminology
Ethics/integrity
Grant application writing
Interdisciplinarity
Literature use/management
Open Access publishing
Open Data management
Open Education
Open Evaluation
Open Licensing
Open Methodology
Open Source
Project/time management

Career Development
Career planning/assessment
CV writing
Interview techniques
Job searching/application
Skills documentation/verification
Skills gap identification/development

Digital
Information accessing/retrieval
Information presentation/visualisation
Information processing/exchange
Software usage/development
Programming

Communication
Academic writing
Formal correspondence
Oral presentation
Science for non-technical audiences
Science for policy making
Social media/webinar usage

Cognitive
Abstraction/creativity
Analysis/synthesis
Critical thinking/problem solving
Organisation/optimisation

Mobility
Intercultural awareness/communication
Intersectoral awareness/experience
Foreign language skills

Enterprise
Commercialisation
Entrepreneurship
Innovation/knowledge transfer
Intellectual Property Rights (IPR)
Legal/business standardisation
Patenting

Teaching & Supervision
Course development/assessment
Exam preparation/assessment
Mentoring/supervising students
Teaching and learning theories/methods

Interpersonal
Conflict management
Discipline/perseverance
Diversity awareness
Leadership/team work
Negotiation
Independence/responsibility
Networking
Rhetoric/argumentation
Stress tolerance
Taking on responsibility

eurodoc
The European Council of Doctoral Candidates and Junior Researchers

THÈSES
PRÉSENTÉES
A LA FACULTÉ DES SCIENCES DE PARIS

OBSERVATIONUM
IURIS ROMANI
SPECIMEN
SCRIPSIT
JO. FRID. LUD. GOESCHEN
DISSERTATIO INAUGURALIS
BEROLINI

3

BOLOGNA SEMINAR

DOCTORAL PROGRAMMES FOR THE EUROPEAN KNOWLEDGE SOCIETY

Salzburg, 3-5 February 2005

SALZBURG II RECOMMENDATIONS

EUROPEAN UNIVERSITIES' ACHIEVEMENTS SINCE 2005 IN IMPLEMENTING THE SALZBURG PRINCIPLES

DOCTORAL EDUCATION – TAKING SALZBURG FORWARD

IMPLEMENTATION AND NEW CHALLENGES

euacde COUNCIL FOR DOCTORAL EDUCATION

Building the Foundations of Research

A Vision for the Future of Doctoral Education in Europe

June 2022

Salzburg Principles

The core component of doctoral training is the advancement of knowledge through original research.

Embedding in institutional strategies and policies

The importance of diversity

Doctoral candidates as early stage researchers

The crucial role of supervision and assessment

Achieving critical mass

Duration

The promotion of innovative structures

Increasing mobility

Ensuring appropriate funding

Diversity of doctoral education in Europe

Diversity of doctoral education

Varying funding models, legal frameworks, statuses, definitions, and doctorate durations across institutions and countries.

Beyond "pure" research, doctoral candidates/ PhD students engage in tasks like proposal writing, teaching, data management, scientific publishing, collaborations, and science communication.

Institutions offer multiple (transversal) skills training programs to enhance doctoral candidates' capabilities.

Diversity of doctoral education

Diverse Doctoral Education Practices include traditional doctorates (still the overwhelming majority) professional doctorates, arts-based doctorates with diverse outcomes (e.g., books, journal articles, artefacts).

Centralization and structuring of doctoral studies, increasing role of schools and formal programs while maintaining diversity and fit for purpose approach

There are two outcomes of the doctorate: Doctoral work and doctoral researcher!

Structural diversity of doctoral education

International doctoral programmes	National doctoral school	Institution wide doctoral school	Doctoral programme on faculty level

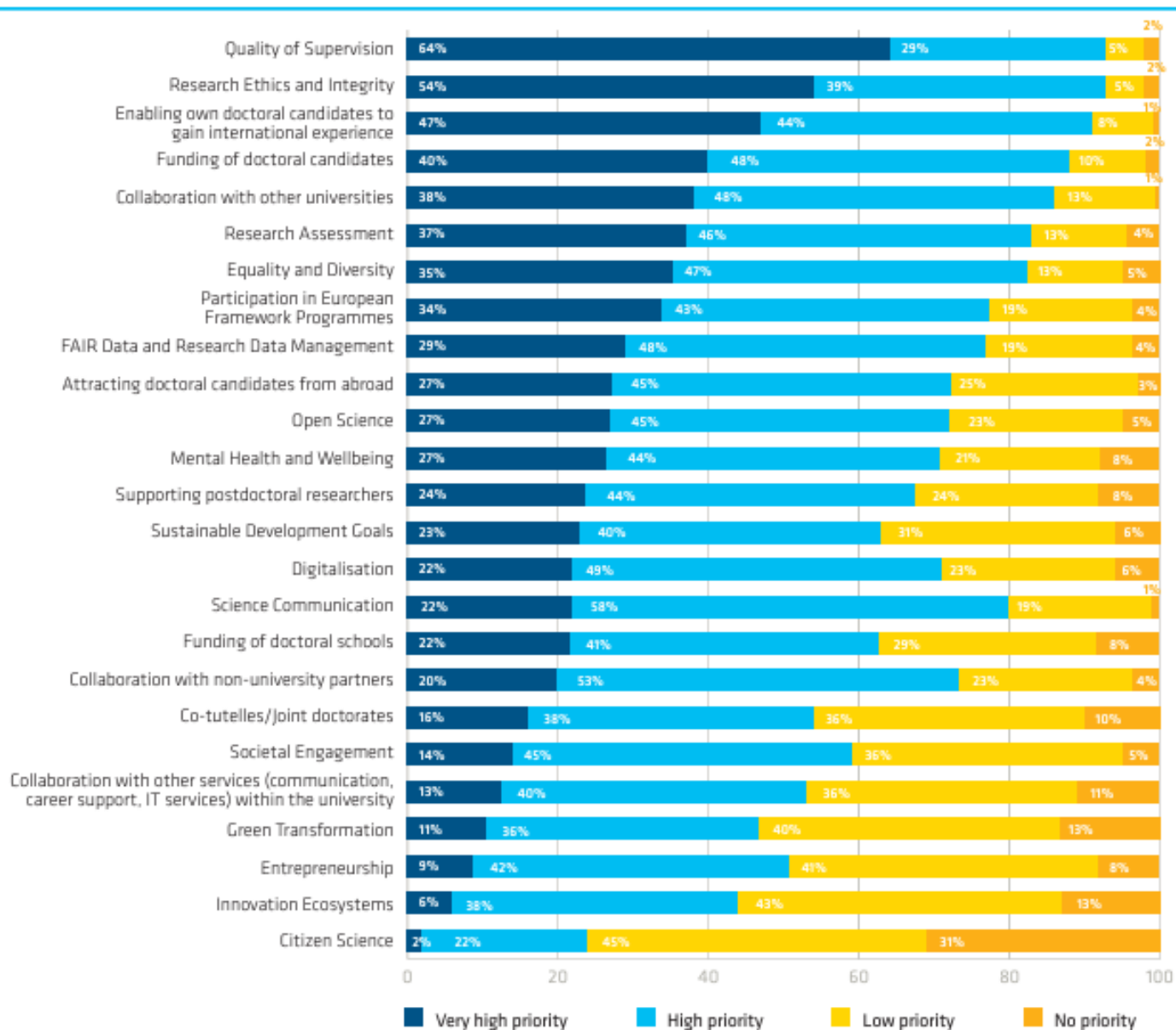|	Interdisciplinary doctoral schools	Disciplinary doctoral programmes	Themes or challenges

Strategic priorities of doctoral education in Europe

Strategic priorities

Figure 12: Institutional priorities
Which of the following topics are a priority in the area of doctoral education at your institution?
Number of respondents: 134-137/138

	Very high priority	High priority	Low priority	No priority
Quality of Supervision	64%	29%	5%	2%
Research Ethics and Integrity	54%	39%	5%	2%
Enabling own doctoral candidates to gain international experience	47%	44%	8%	1%
Funding of doctoral candidates	40%	48%	10%	2%
Collaboration with other universities	38%	48%	13%	1%
Research Assessment	37%	46%	13%	4%
Equality and Diversity	35%	47%	13%	5%
Participation in European Framework Programmes	34%	43%	19%	4%
FAIR Data and Research Data Management	29%	48%	19%	4%
Attracting doctoral candidates from abroad	27%	45%	25%	3%
Open Science	27%	45%	23%	5%
Mental Health and Wellbeing	27%	44%	21%	8%
Supporting postdoctoral researchers	24%	44%	24%	8%
Sustainable Development Goals	23%	40%	31%	6%
Digitalisation	22%	49%	23%	6%
Science Communication	22%	58%	19%	1%
Funding of doctoral schools	22%	41%	29%	8%
Collaboration with non-university partners	20%	53%	23%	4%
Co-tutelles/Joint doctorates	16%	38%	36%	10%
Societal Engagement	14%	45%	36%	5%
Collaboration with other services (communication, career support, IT services) within the university	13%	40%	36%	11%
Green Transformation	11%	36%	40%	13%
Entrepreneurship	9%	42%	41%	8%
Innovation Ecosystems	6%	38%	43%	13%
Citizen Science	2%	22%	45%	31%

(Source: EUA-CDE 2021 survey)

Strategic priorities

(Source: EUA-CDE 2021 survey)

Figure 13: Top priorities
Please identify which of the following topics you consider most important for doctoral education at your institution. Please indicate max. 3-4.
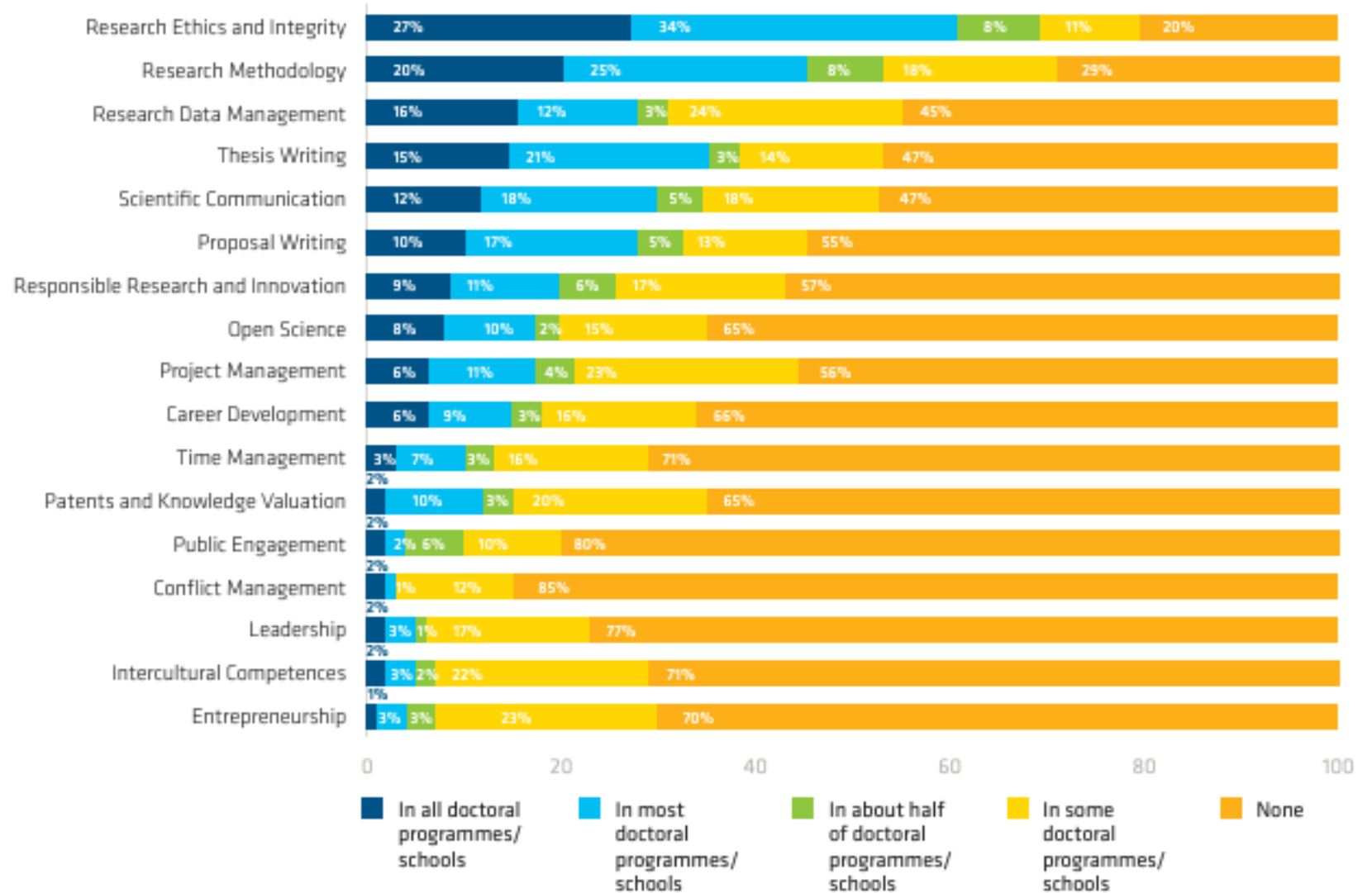
Topic	Percentage
Quality of Supervision	54%
Funding of doctoral candidates	41%
Enabling own doctoral candidates to gain international experience	40%
Research Ethics and Integrity	35%
Attracting doctoral candidates from abroad	31%
Collaboration with other universities	30%
Collaboration with non-university partners	20%
Mental Health and Wellbeing	17%
Co-tutelles/Joint doctorates	17%
Supporting postdoctoral researchers	12%
Equality and Diversity	11%
Open Science	10%
Research Assessment	9%
Participation in European Framework Programmes	9%
Digitalisation	8%
Societal Engagement	6%
Sustainable Development Goals	5%
Funding of doctoral schools	5%
FAIR Data and Research Data Management	4%
Collaboration with other services (communication, career support, IT services) within the university	4%
Science Communication	3%
Entrepreneurship	2%
Innovation Ecosystems	1%
Citizen Science	1%
Green Transformation	0%

Figure 5: Mandatory transversal skills training

What type of mandatory transversal skills training is offered to doctoral candidates at your institution?

Number of respondents: 124-133/138

Mandatory transversal skills training

(Source: EUA-CDE 2021 survey)

	In all doctoral programmes/ schools	In most doctoral programmes/ schools	In about half of doctoral programmes/ schools	In some doctoral programmes/ schools	None
Research Ethics and Integrity	27%	34%	8%	11%	20%
Research Methodology	20%	25%	8%	18%	29%
Research Data Management	16%	12%	3%	24%	45%
Thesis Writing	15%	21%	3%	14%	47%
Scientific Communication	12%	18%	5%	18%	47%
Proposal Writing	10%	17%	5%	13%	55%
Responsible Research and Innovation	9%	11%	6%	17%	57%
Open Science	8%	10%	2%	15%	65%
Project Management	6%	11%	4%	23%	56%
Career Development	6%	9%	3%	16%	66%
Time Management	3%	7%	3%	16%	71%
Patents and Knowledge Valuation	2%	10%	3%	20%	65%
Public Engagement	2%	2%	6%	10%	80%
Conflict Management	2%		1%	12%	85%
Leadership	2%	3%	1%	17%	77%
Intercultural Competences	1%	3%	2%	22%	71%
Entrepreneurship		3%	3%	23%	70%

Optional transversal skills training

Figure 6: Optional transversal skills training

What type of optional transversal skills training is offered to doctoral candidates at your institution?

Number of respondents: 127-133/138

Skill	In all doctoral programmes/schools	In most doctoral programmes/schools	In about half of doctoral programmes/schools	In some doctoral programmes/schools	None
Scientific Communication	30%	38%	6%	15%	11%
Research Ethics and Integrity	30%	36%	7%	8%	19%
Research Methodology	27%	42%	5%	11%	15%
Thesis Writing	27%	36%	6%	14%	17%
Career Development	27%	36%	4%	14%	19%
Proposal Writing	26%	40%	4%	13%	17%
Research Data Management	25%	35%	8%	13%	19%
Project Management	24%	37%	5%	15%	19%
Open Science	22%	32%	8%	16%	22%
Time Management	22%	28%	6%	12%	32%
Entrepreneurship	21%	31%	6%	23%	19%
Responsible Research and Innovation	20%	27%	6%	21%	26%
Public Engagement	17%	23%	3%	21%	36%
Conflict Management	17%	16%	3%	20%	44%
Leadership	17%	24%	4%	23%	32%
Patents and Knowledge Valuation	15%	28%	7%	21%	29%
Intercultural Competences	12%	19%	5%	27%	37%

(Source: EUA-CDE 2021 survey)

The future of doctoral education in Europe

Building the Foundation of Research

The 2022 EUA-CDE Vision paper

"

1 Doctoral schools serve as a place where the **opportunities and challenges of new digital technologies** are embraced in the pursuit of research goals and in their own enabling frameworks.

"

"

2 Universities should embrace the **Sustainable Development Goals** as a holistic framework providing a context for and supporting the delivery of doctoral education

"

Monday, November 25, 2024

" 3 Even when not connected to a specific mission, research and education at doctoral level contributes to the **resolution of the environmental, demographic, socio-economic, and political challenges** that Europe and the world are facing.
The path to resolving these challenges may lie in addressing fundamental research questions where the application is not evident at the time. "
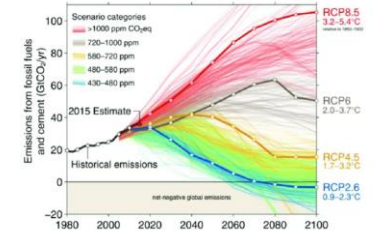
" 4 A **diverse doctoral education must be sensitive to the different backgrounds** that doctoral candidates bring with them. Doctoral education should encourage reflection on and the overcoming of any social, economic or cultural barriers. It should foster a diversity that goes hand in hand with excellence and a shared understanding of research quality "

> **5** Doctoral education should promote a **dialogue about the different dimensions of academic freedoms** and raise awareness about where any are at risk. It should create an open space for critical debate and the exchange of opposite views, while defending the rights of doctoral candidates to engage in these activities.

> **6** Doctoral education needs to embrace the **variety of formats** which have emerged to meet specific needs but at the same time to ensure that the **core principles, including the importance of conducting original research, remain integral to all of these**. Structured approaches should be used as a means of ensuring that the voice of doctoral education is properly embedded in university structures.

"

7 A **fit-for-purpose quality assurance system is essential** but the overarching goal is the quality of research, not the use of a particular tool. The focus should go beyond administrative processes to also value the education and research content. That should include an understanding of core skills and values such as research ethics and integrity and the adoption of a **critical approach to research assessment not confined to publication metrics.**

"
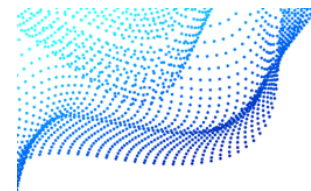
CoARA
Coalition for Advancing
Research Assessment

> 8. Doctoral candidates must be **equipped with the knowledge and skills to meet the modern demands of research** and pursue their chosen career paths. At the same time, they need **to map, visualise and verbalise their skills and communicate those capabilities to others**. Doctoral education should develop both tacit and explicit skills. Transversalskills should not be seen as an add-on but as a key element of the doctorate, maintaining the essential role of original research as the key feature of doctoral education

"9. Supervision is crucial. Its form adapts to the needs and resources of an institution. Universities should invest in the **training of supervisors**, enabling them to embrace their roles fully and ensure that the doctoral school or environment

plays its appropriate supportive role"
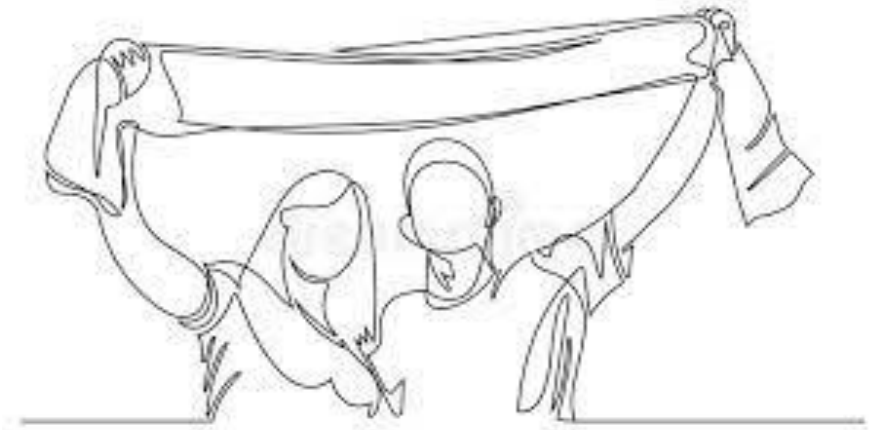
> **10** The level of **living support for doctoral candidates needs to take into consideration the relative attractiveness of the careers** and the incomes of early-career knowledge workers in other sectors. This means that that the work of doctoral candidates should be appropriately rewarded. **Duration of funding should be based on a realistic assumption of the duration of a doctorate. An increase in salaries or duration of the doctorate should not, however, be at the expense of the availability of doctoral positions.** The increased need to tackle societal challenges with high-quality research demands the availability of such positions, but this should not lead to a reduction in other university services.

Thank you for your attention