

Competence Profiles, Grids and Professional Development: A complementary German approach to a Competence Development Framework for Early Stage Researchers

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The Tradition of Doctoral Education in Germany


- Germany: 2nd largest producer of doctoral graduates worldwide
Graduations (ISCED 6) in 2011: USA: ~73,000
Germany: ~27,000
UK: ~20,000¹
- Transition rates (2011) to doctorate at German universities:
~19% (including medicine) /14.9% (excluding medicine)²
- Percentage of German citizens with doctoral degrees (2.6%)
quite high compared to OECD average (1.6%)³
- PhD Degree opens access to broad range of higher positions
in academic, public as well as private sector
- Traditional apprenticeship model (individual doctorate) ⇔
growing demand for highly skilled academics requires improvement

Sources: ¹Online Education Database – OECD: Data drawn August 24th 2013
²HIS:Forum Hochschule 11/2013 (based on Data from 2011)
³HIS:Forum Hochschule 11/2013 (based on Data from 2010)

Individual Doctorate vs. Structured Doctorate

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Doctoral candidate...



... has got one supervisor

... is free to choose a subject

... is left to his/her own devices

... has no courses or other opportunities to choose from


Individual Doctorate

... does research largely independently

... is flexible

... gets a qualification 'for free' (no fees)

... has to demonstrate personal initiative and responsibility



... has got a team of supervisors

... can discuss with other experts (e.g. with professors, colleagues)

... takes his/her first steps in the scientific community

... has a time frame and a supervision agreement

... benefits from a study program

... is funded (quite frequently)

Structured Doctorate

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The Doctoral Landscape in Germany

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Once upon a time

- 1st Research Training Group in 1985
- Dynamic development of doctoral education especially over last 15 years
- Boosted by German Excellence Initiative

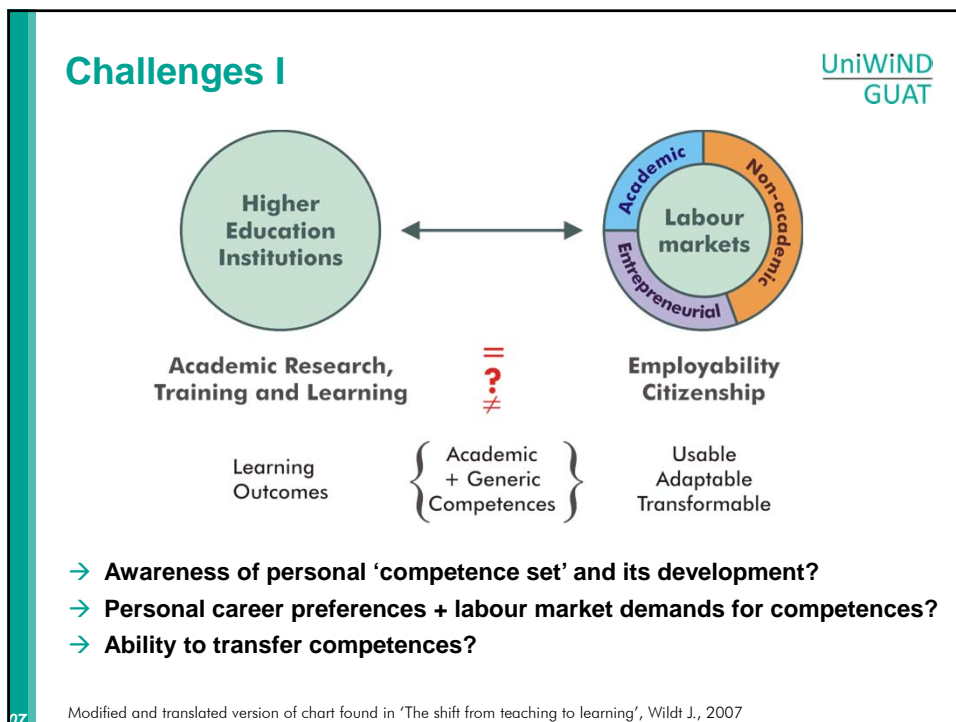
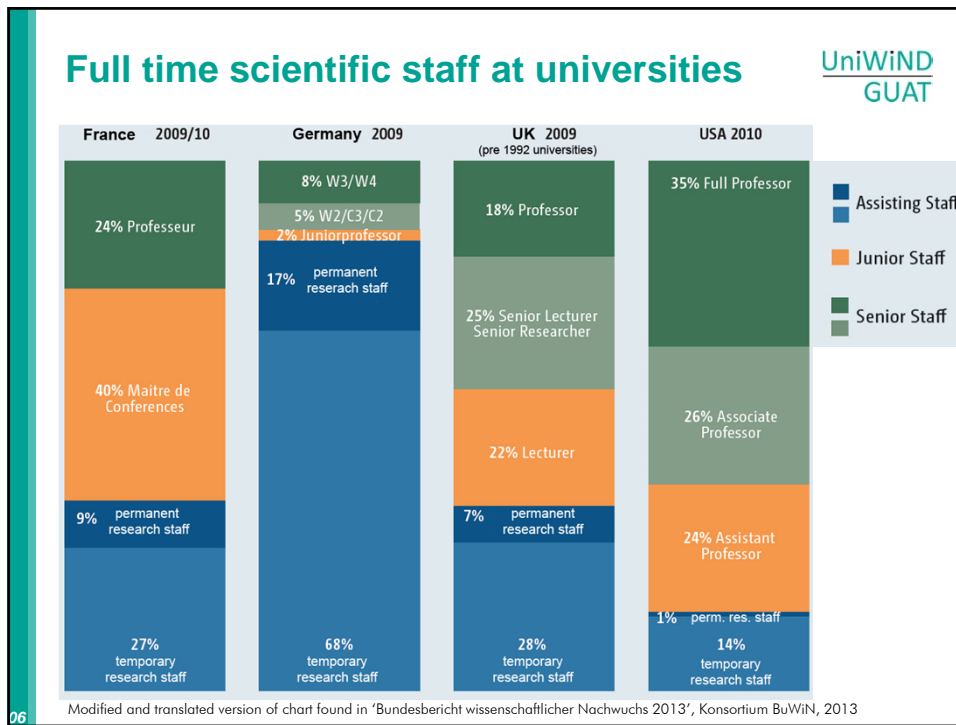
Today

- Highly diversified types of PhD Programs on national level and on university level (usually coexisting at same institution)
- Development of Structured Doctorate influenced Individual Doctorate

Common Characteristics

- Third Party Funded (mostly)
- Temporary (mostly)
- Diversity of structures and concepts (involving part of doctoral candidates or whole departments)
- Variety concerning research spectra (from very broad to quite focussed)
- **Training Programs to develop research and transferable skills**

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Challenges II & Windows of Opportunity

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Frequent observation:

- Awareness: Limited reflection on current action patterns
- Attitude: Limited openness to topics relevant for future career
- Behaviour: 'Muddling through' with current action patterns

Windows of Opportunities:

- Usual patterns not sufficient to handle situational challenge:
Increased willingness to learn is likely

Example situations:

- Not finding mistakes in experimental setup
- Difficulties to integrate into research team
- Having a writer's block

Guiding questions

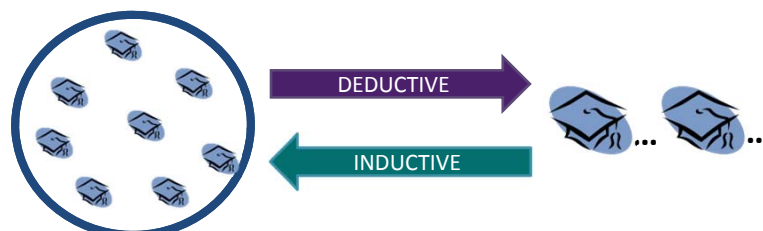
- ▶ When do stages of increased willingness to learn occur during the doctorate?
- ▶ How to raise awareness for important topics which seem to be less pressing now?

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UniWiND WG / Competence Profiles of Early Stage Researchers

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- **Objective**
Development of a competence framework for doctoral candidates and postdocs targeting academic careers as well as careers beyond academia.
- **Strength**
Early stage researcher development experts from different universities: Broad range of practical experiences; input from external expert doing research on competences
- **Approach**
 1. What does already exist?
 2. Deductive and Inductive Approach



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UniWiND WG / Approach

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Deductive Approach	Inductive Approach
1. Definition of doctoral stages	
2. Collection of general and interdisciplinary competences	2. Collection of <i>Critical Incidents</i> for each stage
3. Combination of competences into clusters	3. Description of desirable behaviour for each stage
4. Attribution of the relevant competences to each doctoral stage	4. Deduction of the competences needed

▪ **Objective: Dynamic model**

Development of a competence framework for doctoral candidates and postdocs targeting academic careers as well as careers beyond academia **taking into account doctoral stages**

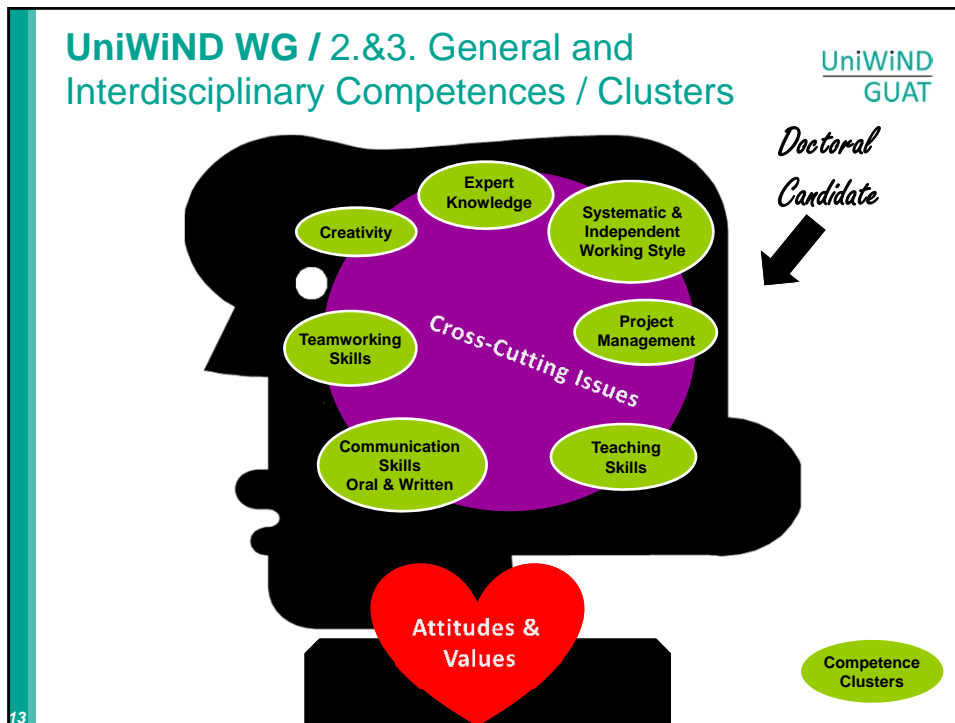
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UniWiND WG / 1. Definition of Doctoral Stages

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Doctorate					
Stages:	Orientation stage	Initial stage	Research stage	Finishing stage	
Duration:	~1-3 months	~3-9 months	~2,5-3 years	~3-12 months	
Stage characterised by:	Finding: <ul style="list-style-type: none"> • Topic • Supervisor • Financing • Type of doctorate 	<ul style="list-style-type: none"> • Exposé/Planning of project • Initial Training 	<ul style="list-style-type: none"> • Realisation of project • Validation • Modification/Adaption • Securing results/Documentation 	Completion: <ul style="list-style-type: none"> • Project • Dissertation 	<ul style="list-style-type: none"> • Exam • Publications
Typical additional demands:		<ul style="list-style-type: none"> • Research integrity 	<ul style="list-style-type: none"> • Scientific communication (publications, presentations, etc.) • Networking • Scientific collaboration 		
Typical challenges and crises:	Preparation	Overwhelm crisis (e.g. material, methods)	„Crisis of Meaning“ (Relevance of own research)	Finishing crisis	Career Orientation

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- **Example for Competence Cluster: 'Teamworking Skills'**
 - Capability to cooperate,
 - to work in interdisciplinary contexts,
 - to deal with conflicts,
 - to give and receive feedback,
 - to communicate with team and its members
- **Cross-Cutting Issues**
Diversity, Work/Life Balance, Think and act in interdisciplinary contexts etc.
- **Attitudes & Values**
Curiosity, ability to motivate oneself and others, ethical thinking and acting etc.

4. Attribution of relevant competences to each doctoral stage

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UniWiND WG / Deductive Approach

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Deductive Approach	Inductive Approach
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UniWiND WG / Inductive Approach

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Deductive Approach	Inductive Approach
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- Critical Incidents: Examples for Initial Stage
 - I don't know how to narrow down my subject
 - I don't know how and where to start
 - I have difficulties in integrating into the team / into the lab
 - I don't know what an *exposé* is (project synopsis) and how to write it
 - ...

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	Doctorate				Postdoc
	Orientation stage	Initial stage	Research stage	Finishing stage	Transition to postdoc stage
Stages:					
Support topics, e.g.:	<ul style="list-style-type: none"> General information about doctorate Premises of a doctorate Career implications of a doctorate Clarification of personal objectives 	<ul style="list-style-type: none"> Research integrity Project management Self/Time management Objective/Strategy Development Supervision agreements 	<ul style="list-style-type: none"> Scientific communication Internationalisation/intercultural topics Networking Progress Reporting/Minutes Career development Applying for funding Basics of teaching at university level Working in Teams Basic leadership topics Creativity methods Feedback methodology 	<ul style="list-style-type: none"> Disputation/Examination Career options PR and Media Self marketing Job applications Leadership topics Entrepreneurial thinking 	<ul style="list-style-type: none"> Applying for funding Professional teaching Moderation techniques Creativity methods Advanced leadership topics Team development topics
Training:		<ul style="list-style-type: none"> Workshops covering above stated topics 	<ul style="list-style-type: none"> Workshops and training programs covering above stated topics 	<ul style="list-style-type: none"> Workshops covering above stated topics Disputation simulations 	<ul style="list-style-type: none"> Workshops covering above stated topics
Coaching:	<ul style="list-style-type: none"> Objective Clarification Decision finding 	<ul style="list-style-type: none"> Strategy development Reflection 	<ul style="list-style-type: none"> Career development (group coaching) 	<ul style="list-style-type: none"> Career development (individual coaching) 	<ul style="list-style-type: none"> Decision finding Leadership
Mentoring:	<ul style="list-style-type: none"> e.g. by doctoral candidates to support decision finding 	<ul style="list-style-type: none"> e.g. by advanced doctoral candidates 	<ul style="list-style-type: none"> e.g. by PhD professionals/alumni from academia, public institutions or private enterprises 	<ul style="list-style-type: none"> e.g. by PhD professionals/alumni from academia, public institutions or private enterprises 	<ul style="list-style-type: none"> Senior PI's, emeriti, alumni: from academia, public institutions or private enterprises
Counselling/consulting, e.g.:	<ul style="list-style-type: none"> Doctoral topics Objective clarification Financing 	<ul style="list-style-type: none"> Formal doctorate process Status of doctoral candidates Premises of a doctorate International doctoral candidates 	<ul style="list-style-type: none"> General and formal topics Challenges/conflicts with supervisor General challenges of doctoral candidates Competence and career development, career options and preferences Reconciliation of family and work life 	<ul style="list-style-type: none"> Examination procedure Career options Job applications 	<ul style="list-style-type: none"> Academic career Funding applications Academic appointment procedures
Additional events:	<ul style="list-style-type: none"> Information events on doctorate 		<ul style="list-style-type: none"> Information events on career options (e.g. career talks) 	<ul style="list-style-type: none"> Information events on career options Networking events e.g. with alumni, companies, etc. Assessment center training 	
Additional instruments:	<ul style="list-style-type: none"> Self reflection with guiding questions 	<ul style="list-style-type: none"> Form/Examples of supervision agreements 	<ul style="list-style-type: none"> Forms/examples of progress reports Portfolio/reflection with guiding questions 	<ul style="list-style-type: none"> Portfolio/reflection with guiding questions 	
For Supervisors:	<ul style="list-style-type: none"> Guideline for doctorate 	<ul style="list-style-type: none"> Recommendations for structuring initial phase Support supervision agreements 	<ul style="list-style-type: none"> Ombudsperson in case of supervision challenges and conflicts 	<ul style="list-style-type: none"> Ombudsperson in case of supervision challenges and conflicts 	

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Outcome

- Dynamic model: Doctoral stages, windows of opportunity and related competences
- Measures and actions for each doctoral stage

Universities

- May create a more distinct profile
- May more strategically optimise the situation of their doctoral candidates

Umbrella Institutions for Doctoral Candidates

- May systematically develop measures and actions that are competence development oriented
- Better argumentation (intra-university as well as beyond)

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Doctoral Candidates

- Reflection:
 - ✓ What may I expect during my PhD?
 - ✓ Which competences do I want to develop?
 - ✓ Which competences do I have now / at the end of my PhD?
 - ✓ How can I 'sell' myself with my competences?

Remarks

- It is not to be understood as a requirement profile for doctoral candidates
- Competences developed in non-professional contexts and/or earlier in life have to be taken into account as well
- Objective: Raise awareness for competence development while taking transition to labour markets into account (i.e. employability)

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Working Group Members 2010-2012

- Dr. Christian Dumpitak, Heinrich Heine Universität Düsseldorf
- Dr. Stephanie Großmann, Universität Passau
- Dr. Sebastian Huster, Leibniz Universität Hannover
- Dr. Wolfgang Röhr, Universität Hamburg
- Dr. Regina von Schmeling, Humboldt Universität Berlin
- Dr. Carolin Schuchert, Albert-Ludwigs-Universität Freiburg
- Dr. Markus Steinmayr, Universität Duisburg-Essen
- Valentina Vasilov, Universität Duisburg-Essen
- Dr. Klaus Vosgerau, Universität Bremen
- Dr. Sibel Vurgun, Freie Universität Berlin
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