



„Competence Models for Assessment of Individual Learning Outcomes and the Evaluation of Educational Processes“

A Priority Program 2007 – 2013
of the German Research Foundation (DFG)

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Goals

◆ Priority Programs (PP)

- PPs are established by DFG for 6 years, based on a proposal of individual researchers (here: Eckhard Klieme & Detlev Leutner).
- Nation-wide call for individual project proposals by DFG.
- The project proposals are individually reviewed and approved.
- Here: PP “Competence Models” has 25 such projects (out of about 100 submissions).

◆ Goal of PP „Competence Models“

- to bring together experts of domain-specific competencies with experts of measurement and assessment
- in order to develop and to validate structural & developmental models of competencies that can be used to construct state-of-the-art measurement instruments



Definition

◆ Competencies

= context-specific cognitive dispositions that are acquired and needed to successfully cope with certain situations or tasks in specific domain

– Examples:

Reading in native language, writing in foreign language, mathematical modeling

◆ Different from

– Intelligence: Competencies are context-specific, can be learned and taught.

– Competencies in action (Weinert, 2001): Focus on cognitive models, not on motivation.



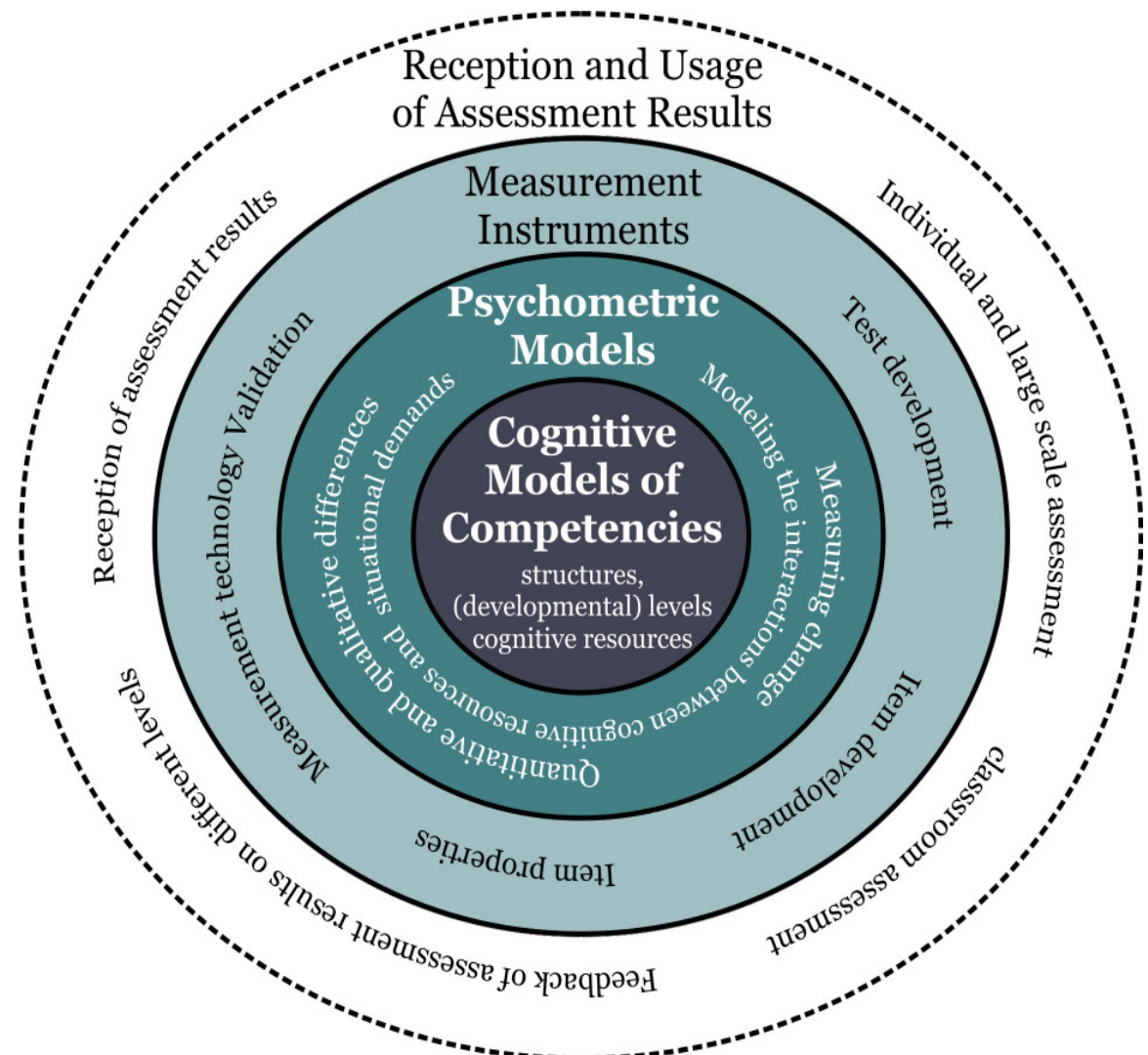
Research Areas & Content Domains of the PP

◆ Research Areas

- Cognitive models
- Psychometric models
- Measurement instruments
- Acceptability & usage of assessment results

◆ Content domains

- Mathematics
- Science & Technology
- Language
- Cross-curricular competencies
- Teacher's competencies



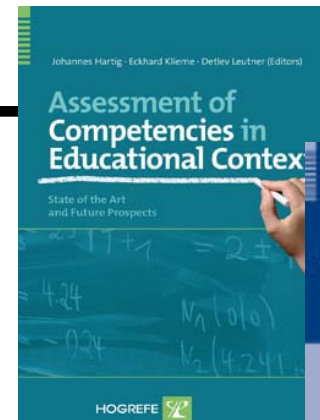


Focus of PP Projects (Research Area X Domain)

	Mathematics	Science & Technology	Language	Cross-Curricular Competencies	Professional Competencies (Teachers)	Sum
Cognitive Models		3	2	3	1	9
Psychometric Models	3		2		1	6
Measurement Instruments	1	2	1	2	1	8
Acceptability & Usage of Results	1		1			2
Sum	5	5	6	5	4	25



◆ <http://kompetenzmodelle.dipf.de/>



- Klieme, E. & Leutner, D. (2006). Kompetenzmodelle zur Erfassung individueller Lernergebnisse und zur Bilanzierung von Bildungsprozessen. Beschreibung eines neu eingerichteten Schwerpunktprogramms der DFG. Zeitschrift für Pädagogik, 52, 876-903.
- Leutner, D. & Klieme, E. (Eds.). (2008). Assessment of competencies [introduction to special issue]. Zeitschrift für Psychologie / Journal of Psychology, 216 (2).
- Klieme, E., Leutner, D. & Kenk, M. (Hrsg.). (2010). Kompetenzmodellierung. Zwischenbilanz des DFG-Schwerpunktprogramms und Perspektiven des Forschungsansatzes (Zeitschrift für Pädagogik, 56. Beiheft). Weinheim: Beltz. Online unter: http://www.pedocs.de/frontdoor.php?source_opus=3324&la=de.



Projects of the 2nd PP period (2010-2011)

◆ BiTe

- *Development and assessment of competence models for an integrative processing of texts und images (Schnotz / Baumert / Horz / McElvany)*

◆ COCA

- *Use and effects of competence assessment in mathematical learning and teaching processes (Klieme)*

◆ Competence changes in German and Mathematics Achievement

- *Describing and explaining of competence changes in German and Mathematics (Wilhelm/ Robitzsch)*

◆ Competence-oriented assessments

- *Competence-oriented assessments in VET and professional development (Winther)*

◆ Counselling competencies

- *Modelling the counselling competencies of teachers with a specific consideration of diagnostic competence (Schmitz / Bruder)*

◆ Development of physics competencies

- *Development of physics competencies (Neumann / Fischer)*



Projects of the 2nd PP period (2010-2011)

◆ Diagnostic Competence

- *Diagnostic Competence of Primary School Teachers Regarding School Transition Recommendation: An Analysis from the Perspective of Social Judgement (Gräsel / Krolak-Schwerdt)*

◆ Dynamic problem solving

- *A theory-based construction of tasks to assess problem-solving in dynamic situations (Funke)*

◆ Dynamic Testing

- *Dynamic testing of reading competence: Assessing and fostering reading competence by means of feedback and (meta-) cognitive aids using technology-based assessments (Artelt / Dörfler)*

◆ EWIKO

- *Meta-cognitive knowledge and domain-specific pre-existing knowledge with secondary level students: A longitudinal study for assessing the relation of both knowledge components in the development process (Schneider / Artelt)*

◆ HEIGIS

- *Theory-guided survey of competency levels within the framework of probabilistic measurement models - a contribution to building a Heidelberg Inventory of Geographic System Competency (HEIGIS) (Funke / Siegmund)*



Projects of the 2nd PP period (2010-2011)

◆ HEUREKO

- *Heuristic work with representations of functional coherencies – Diagnosis of the mathematical competencies of students (Leuders / Bruder / Wirtz)*

◆ MAT

- *Multidimensional adaptive competence diagnostics (Frey)*

◆ MIRT

- *Modelling competencies with multidimensional IRT-models (Hartig / Harsch)*

◆ Modelling competencies and competence development in education and training

- *Modelling competencies and competence development in industrial and technical vocational education and training (Nickolaus / Geißel / Gschwendtner)*

◆ Literary-aesthetic competencies

- *Literary-aesthetic competencies (Frederking / Stanat / Dickhäuser / Meier)*

◆ OBSERVE

- *Recognising basic conditions of effective teaching. Analysis of the pedagogical psychological competencies of prospective teachers (Seidel / Prenzel)*



Projects of the 2nd PP Period (2010-2011)

◆ Problem-solving

- *Competence structures of interdisciplinary and subject-specific problem-solving (Leutner / Sumfleth / Wirth / Rumann)*

◆ Science-P

- *Development of science competencies in primary education (Möller / Sodian / Beinbrech / Körber / Schwippert / Hardy)*

◆ Self-regulating competence

- *Self-regulating competence in learning from non-fiction texts~ development and evaluation of a competence structure model for assessing levels (of competence) (Wirth / Leutner)*

◆ Standard-Setting

- *Validating standard setting procedures for competence-orientated achievement assessments (Pant / Rupp / Köller)*