Motivations for Teaching and Relationship to Pedagogical Knowledge

Conceptual Frameworks
Measurement Instruments
Empirical Findings
Recommendations for Future Research

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Implications for Teachers' Pedagogical Knowledge and Professionalism
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Introduction

Knowledge of future teachers: growing body of research

- answer to TIMSS and PISA
- teacher quality and the quality of teacher education
- teachers' contribution to an increase in student achievement

Model of teachers' professional competencies

(cf. Baumert et al., 2010; Tatto et al., 2012)

- cognitive domains

  (cf. Shulman, 1986, 1987)

  - content knowledge (CK)
  - pedagogical content knowledge (PCK)
  - general pedagogical knowledge (GPK)

- motivational-affective variables

  such as motivations for teaching as a career

This Presentation

- What conceptual frameworks have been used to consider the relationship between motivations for teaching and GPK (e.g., what hypotheses are used)?
- What do the empirical findings show to explicate the relationship (e.g., to what extent and how are motivation and knowledge connected)?
- What could be recommended for future research?

This Presentation

1 General Pedagogical Knowledge (GPK)

2 Teaching Motivations (Fit-Choice Scale Inventory)

3 Studies

- 2.1 Study I (König & Rothland, 2012)
- 2.2 Study II (König et al., 2013)

4 Discussion

1 GPK: Conceptual Framework

Test Design (König, Blömeke, Paine, Schmidt & Hsieh, 2011)

Content dimensions and cognitive processes

		cognitive processes		
		recall	understand/ analyze	generate
content dimensions	structure			
	motivation/ management			
	adaptivity			
	assessment			

1 GPK: Selected Findings

TEDS-M and further research

- International assessment validated through expert reviews and confirmatory approaches in TEDS-M, comparative analysis with pre-service teachers from the US, Taiwan, and Germany
  (cf. König et al., 2011; König & Blömeke, 2012)

Table 8. Overall General Pedagogical Knowledge Test Score

Country	*M*	*SE*	*SD*
Germany	576	4.9	85
Taiwan	572	3.2	52
International	**500**	**2.2**	**100**
United States	440	3.0	66

1 GPK: Selected Findings

- Pre-service teachers at the end of training outperform pre-service teachers just entering training
  (cf. König, 2013)

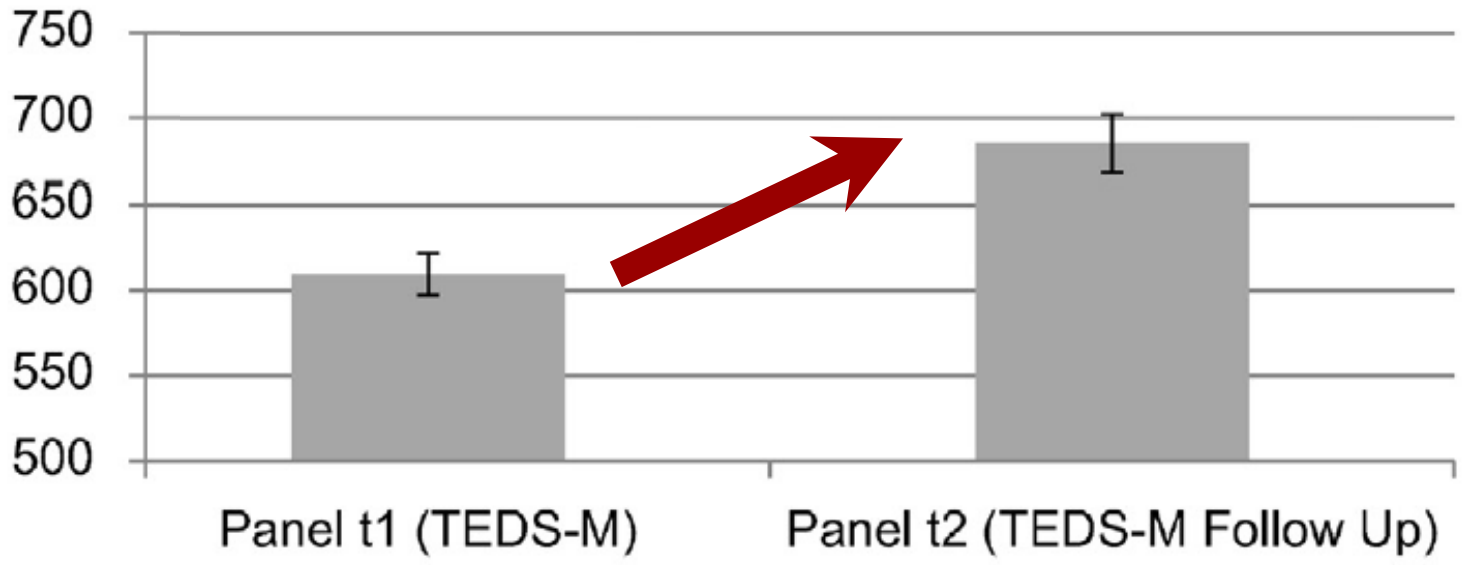
Overall general pedagogical knowledge test score

	M	*SE*	*SD*
Start of training (LEK)	372	7,6	130
After two years training (LEK)	525	7,1	98
End of training (TEDS-M)	613	5,3	84

TEDS-M Teacher Education and Development Study in Mathematics, *LEK* Longitudinal Survey of Student Teachers' Pedagogical Competencies

1 GPK: Selected Findings

- In-service teachers outperform pre-service teachers
  (cf. König, Blömeke, Klein, Suhl, Busse & Kaiser, 2014)

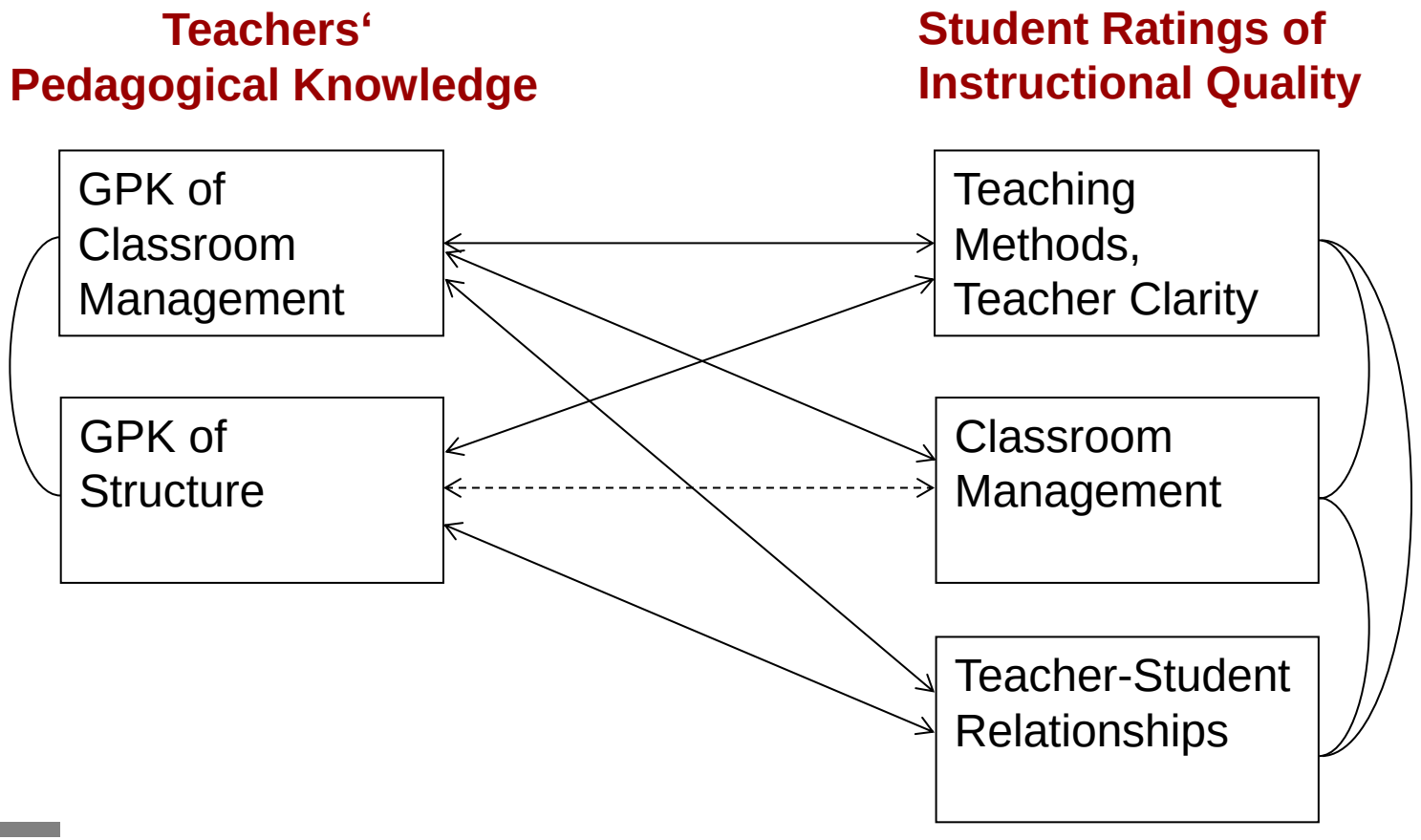


End of Training – Teacher Candidates

After Transition into Teaching – Early Career Teachers

1 GPK: Selected Findings

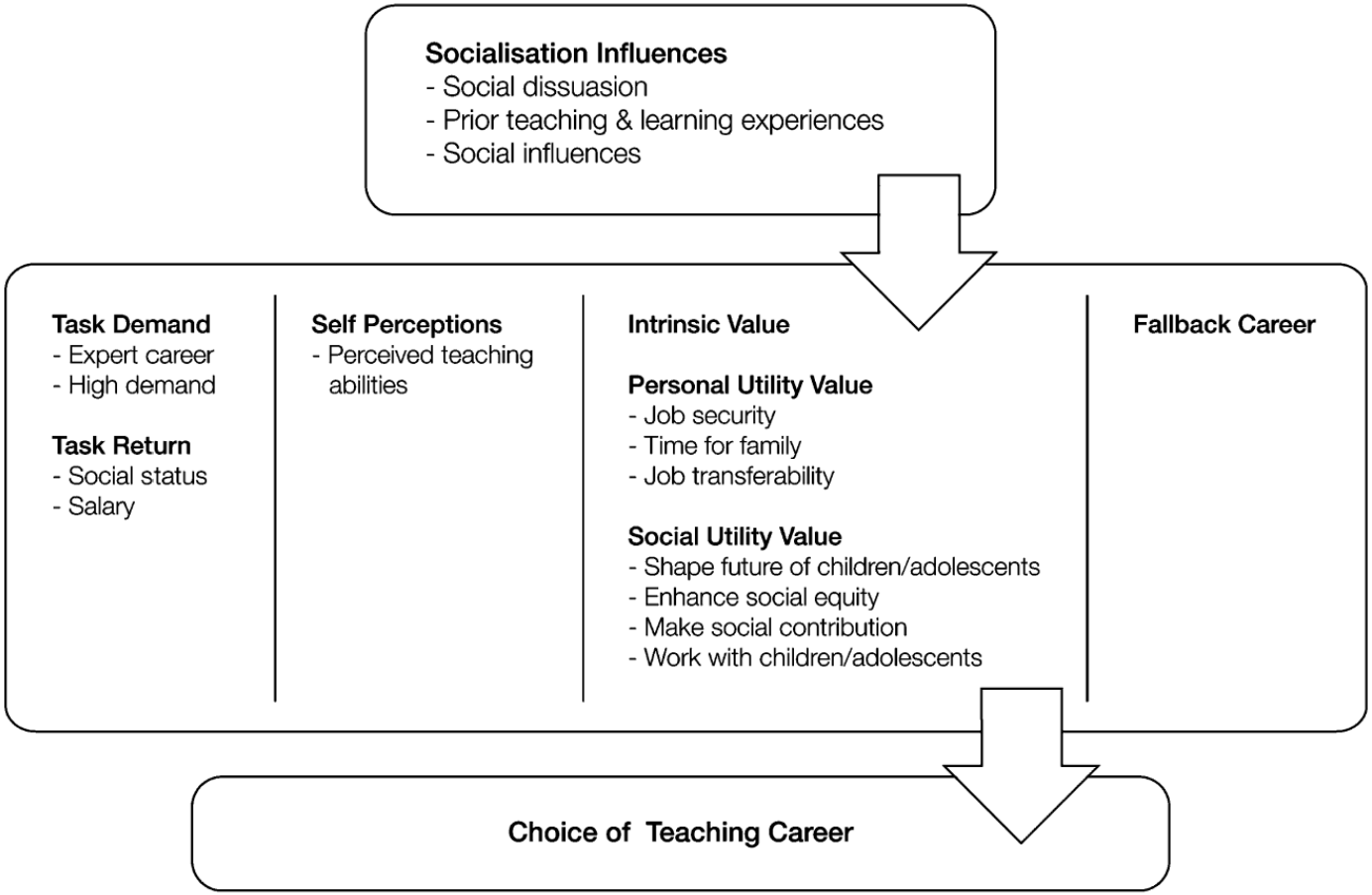
- higher GPK test scores are associated with higher quality of instruction delivered to students
  (König & Pflanzl, under review)



2 Teaching Motivations: Conceptual Framework

Fit-Choice (Watt & Richardson, 2007)

Factors influencing Teaching as a Career Choice



3 Study I: GPK as a motivational outcome

(König & Rothland, 2012)

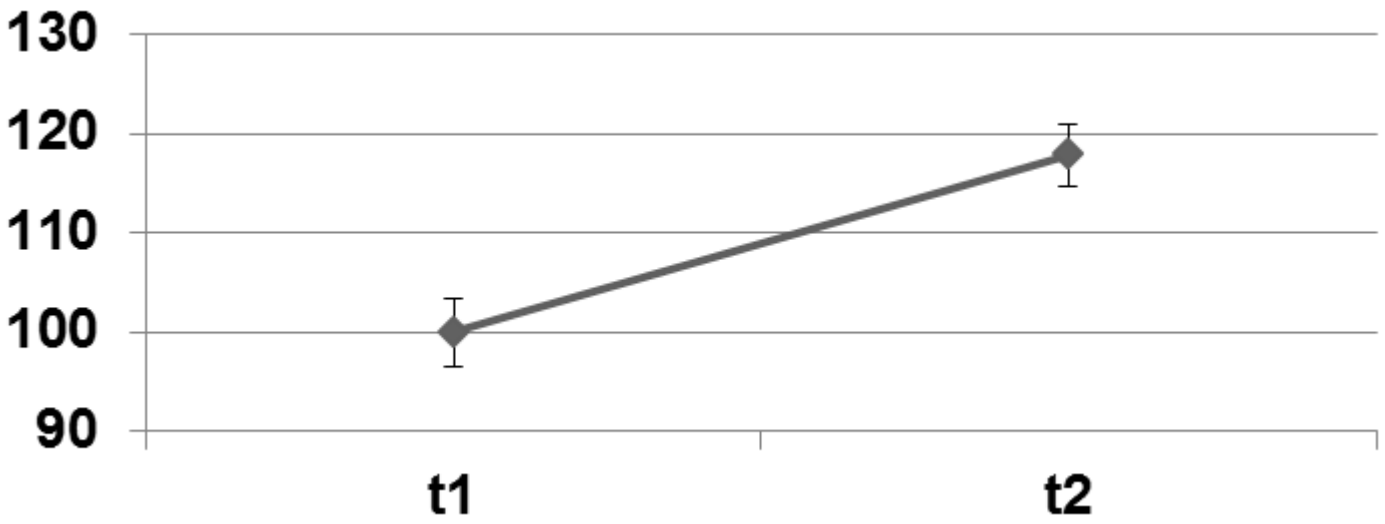
How are motivations for choosing teaching as a career and General Pedagogical Knowledge (GPK) related?

highly intrinsically motivated students generally outperform less intrinsically motivated students, whereas extrinsic motivation is usually associated with poorer performance and educational outcomes (cf. Baker, 2004; König & Rothland, 2012)

- FIT-Choice scale “intrinsic value” to be positively correlated with future teachers’ GPK
- extrinsic motivations such as “job security” or “time for family” and the motivation for choosing teaching as “fallback career” to be negatively correlated with future teachers’ test results
- correlational findings at two different occasions of measurement and contribution to professional knowledge growth over time

3 Study I: Sample and GPK Test

130 Pre-service teachers from the University of Erfurt, Germany
Two occasions of measurement within one academic year



Means of general pedagogical knowledge at two occasions of measurement with 95% confidence interval (König & Rothland, 2012, p. 303)

3 Study I: Results

Intercorrelations between motivation and knowledge

	General Pedagogical Knowledge (GPK)		
	t1	**t2**	**diffference (t2-t1)***
Teaching motivations (FIT-Choice)			
1. Perceived teaching abilities	.15	**.17***	.06
2. Intrinsic value	.11	**.19***	.09
3. Fallback	**–.17***	–.12	.07
4. Job security	**–.21***	–.04	**.21***
5. Time for family	–.03	–.06	.00
6. Shape future	–.05	.08	.11
7. Enhance social equity	–.16	–.02	.16
8. Make social contribution	–.05	.11	.15
9. Work with children/adolescents	**.28***	**.23***	–.09
10. Prior teaching and learning experiences	–.16	–.09	.10
11. Social influences	–.11	.05	.18

* Correlation analysis controlled for age, sex, GPA

(König & Rothland, 2012, p. 304)

3 Study II: Motivation and Knowledge, Mediation

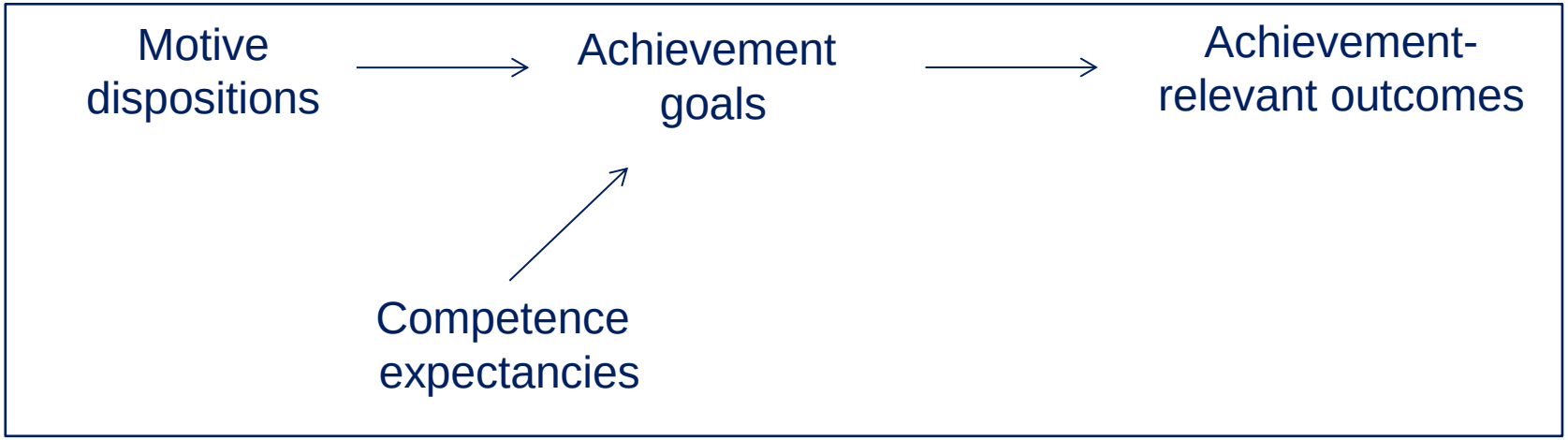
Direct and indirect motivational effects

- direct effects: e.g., time on task, information processing
- indirect effects: e.g., selecting an educational program or course

(cf., e.g., Schiefele, 2009)

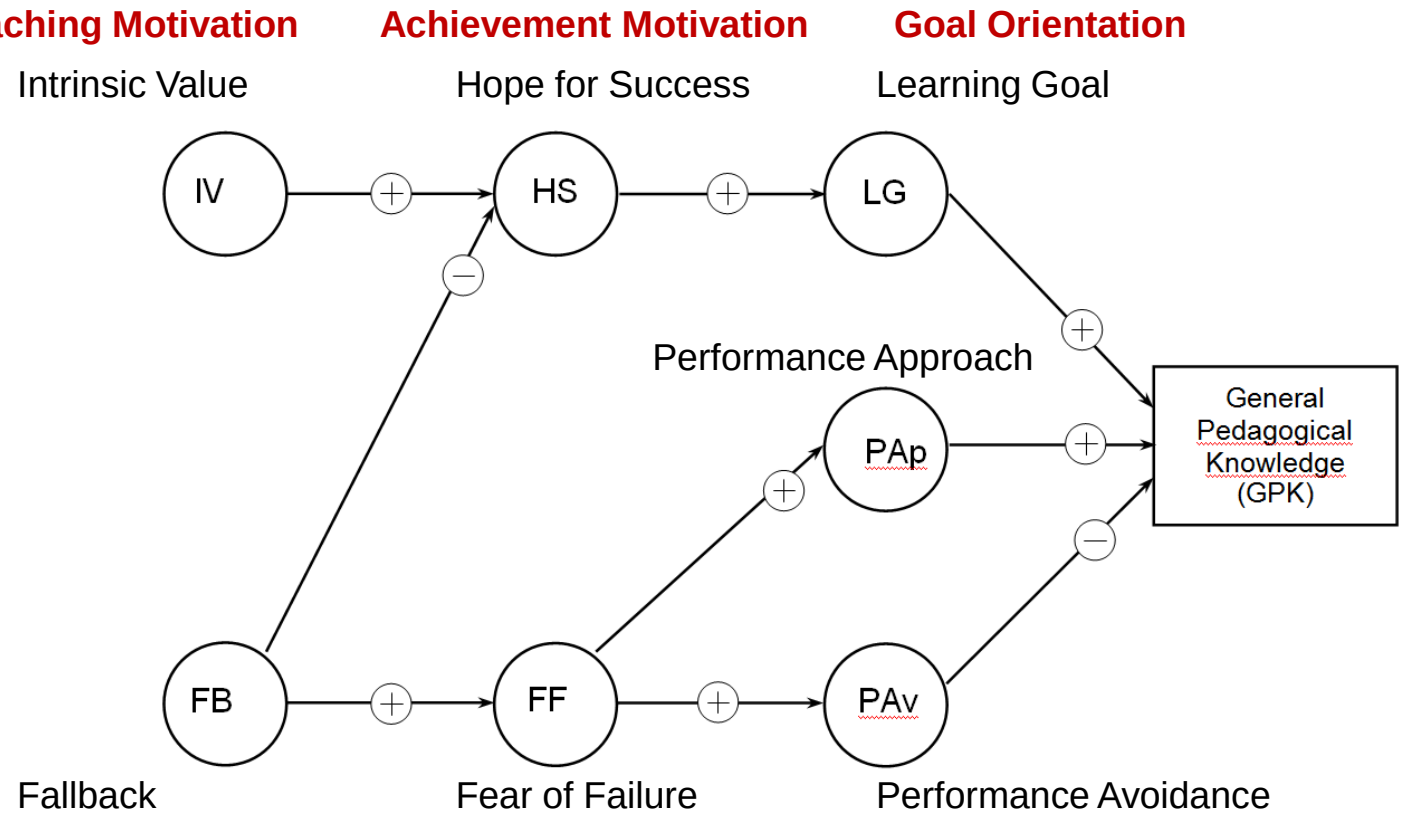
Hierarchical model of achievement motivation

(Elliot & Church, 1997, p. 220)



3 Study II: Model

Path model: achievement motivation and goal orientation mediating between teaching motivations and GPK



3 Study II: Research Question and Hypotheses

How are motivations for choosing teaching as a career and General Pedagogical Knowledge (GPK) related?

(1) Pre-service teachers who choose teaching mainly as a fallback career and report little intrinsic value will have lower GPK.
(cf. Baker, 2004; König & Rothland, 2012)

(2) achievement motivation and goal orientations mediating between motivations for choosing teaching as a career and GPK

- The learning goal orientation has a particularly positive, direct effect on GPK (cf. Fasching et al., 2010).
- Learning goal orientation can be predicted by the hope for success motive directly and by the intrinsic value teaching motivation indirectly.

Similar findings in German-speaking countries
due to similar cultural and linguistic backgrounds

3 Study II: Sample

First year pre-service teacher cohorts
surveyed in autumn 2011 (start of winter term)

Project Title: ***"Development of Teaching Motivations and the Acquisition of Pedagogical Knowledge during Initial Teacher Education"***

Country	Number of Universities/ Pedagogical Colleges	Number of sampled pre-service teachers	Estimated population of pre-service teachers
Germany	18	4,402	37,305
Austria	11	1,585	9,752
Switzerland	2	614	1,484
Total	**31**	**6,601**	**48,541**

(König, Rothland, Darge, Lünnemann & Tachtsoglou, 2013)

3 Study II: Materials

Motivation

- Motivations for choosing teaching were measured by the FIT-Choice scale
  (*Factors Influencing Teaching as a Career Choice*; Watt & Richardson, 2007)

- General achievement motivation by the AMS
  (*Achievement Motive Scale*; Gjesme & Nygard, 1970)

- Goal orientation related to university studies by the SELLMO-ST
  (*Skalen zur Erfassung der Lern- und Leistungsmotivation*; Spinath et al., 2002)

Knowledge

GPK by a paper-and-pencil test derived from TEDS-M
(Koenig et al., 2011)

3 Study II: Results

Intercorrelations between motivation and knowledge

	General Pedagogical Knowledge (GPK)		
	Germany	**Austria**	**Switzerland**
Teaching motivations (FIT-Choice)			
1. Perceived teaching abilities	**.07****	**.14****	-.04
2. Intrinsic value	**.06***	**.15****	-.08
3. Fallback	**-.08***	**-.14***	.03
4. Job security	-.01	-.06	.04
5. Time for family	.00	-.03	.04
6. Shape future	.05#	-.01	.01
7. Enhance social equity	-.02	.02	-.06
8. Make social contribution	.03	.02	-.06
9. Work with children/adolescents	**.05***	.05	-.01
10. Prior teaching and learning experiences	.01	-.05	-.02
11. Social influences	.04	-.06	-.08
Achievement Motive Scale (AMS)			
13. Hope of Success	.05	.12*	-.01
14. Fear of Failure	-.01	-.10*	-.08
Goal Orientation (SELLMO-ST)			
15. Learning Goals	**.13*****	**.15****	.10#
16. Performance-Approach Goals	.04	-.03	.05
17. Performance-Avoidance Goals	-.02	**-.10***	-.05

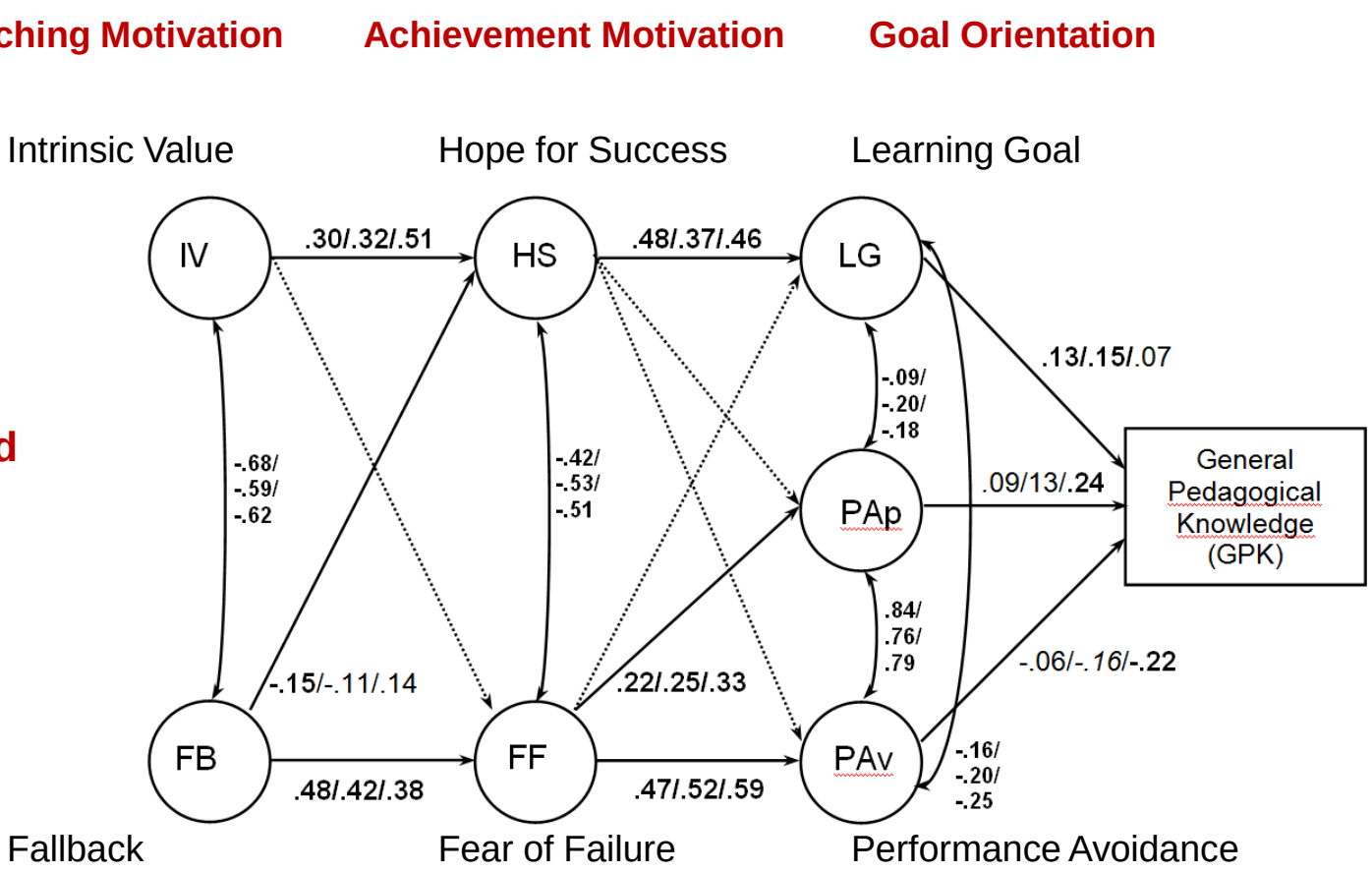
* p ≤ .05 ** p ≤ .01 *** p ≤ .001 # p ≤ .10

χ^2 /df = 2.22, CFI = .923, RMSEA = .024, SRMR = .039

3 Study II: Results

Path model: achievement motivation and goal orientation mediating between teaching motivations and GPK

Germany/ Austria/ Switzerland



bold coefficients: * p ≤ .05; *italic* coefficients: p ≤ .10; dotted line: all coefficients are p > .10

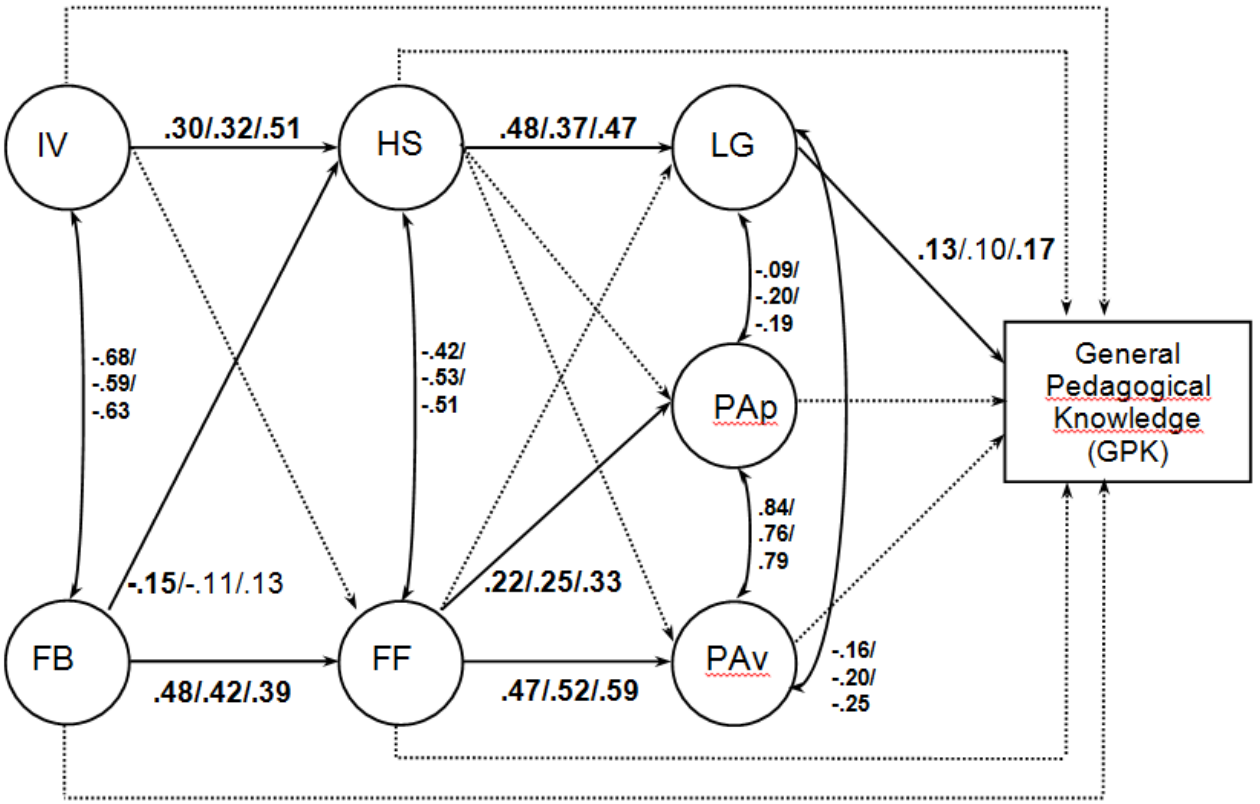
χ^2 /df = 2.53, CFI = .915, RMSEA = .026, SRMR = .046

3 Study II: Results

Path model: achievement motivation and goal orientation mediating between teaching motivations and GPK

Teaching Motivation **Achievement Motivation** **Goal Orientation**

Germany/ Austria/ Switzerland



bold coefficients: * p ≤ .05; *italic* coefficients: p ≤ .10; dotted line: all coefficients are p > .10

χ^2 /df = 2.54, CFI = .915, RMSEA = .026, SRMR = .046

4 Discussion

Research on teaching motivations

- normative debates to be extended by pragmatic views?
- predictive validity
- integrating into a hierarchical model of motivation and linked to GPK

Upcoming challenges

- comparative analysis of knowledge growth as motivational outcome
- second occasion of measurement after two years of training (Autumn 2013) will allow continuing longitudinal work

Teacher competence as a multidimensional construct

- cognitive and non-cognitive measures to be taken into account
- related to normative debates

Thank you very much

for your attention

References

König, J. & Rothland, M. (2012). Motivations for Choosing Teaching as a Career: Effects on General Pedagogical Knowledge during Initial Teacher Education. *Asia-Pacific Journal of Teacher Education, 40* (3), *291-317.*

König, J. & Rothland, M. (2013). Pädagogisches Wissen und berufsspezifische Motivation am Anfang der Lehrerausbildung. Zum Verhältnis von kognitiven und nicht-kognitiven Eingangsmerkmalen von Lehramtsstudierenden. [Pedagogical knowledge and job-specific motivation at the beginning of teacher training. On the relation between cognitive and non-cognitive enrollment characteristics among students in teacher training.] *Zeitschrift für Pädagogik*, 59 (1), 43-65.