



“Current Trends in Physical Education’s Didactics regarding QPE”

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Introduction (I)

- International school comparison studies (the “PISA-Shock”)
- Increasing evidence based evaluation in the educational sector
- Lack of empirical evidence (in PE)
- Shift to school effectivity research (in PE)
- Shift from input- to output-orientation and process-orientation
- Output aspects
- Process aspects



Picture: Erin Gerlach

Offer-Use-Model in School Effectivity Research

Context & Process

Herrmann et al, MOBAK, Corner 8

Input & Structure

- Mission & curriculum
- Number of lessons
- Teacher-student-ratio
- Resources
 - Financial
 - Personal
 - Curriculum & contents
 - Facilities & equipment

- School management
- School climate
- Organisation
- Meaningful content
- Instructional quality
- ...

Effects/Products

- Short term (= Output)
- Middle term (= Outcome)
- Long term (= Impact)
- Motor competence
- Confidence
- Interest
- Knowledge
- Intentions in PA, exercise & sport
- Participation & PA
- Active lifestyle
- Transmission of cultural traditions
- Health (physical, social, psychological)

Fitness



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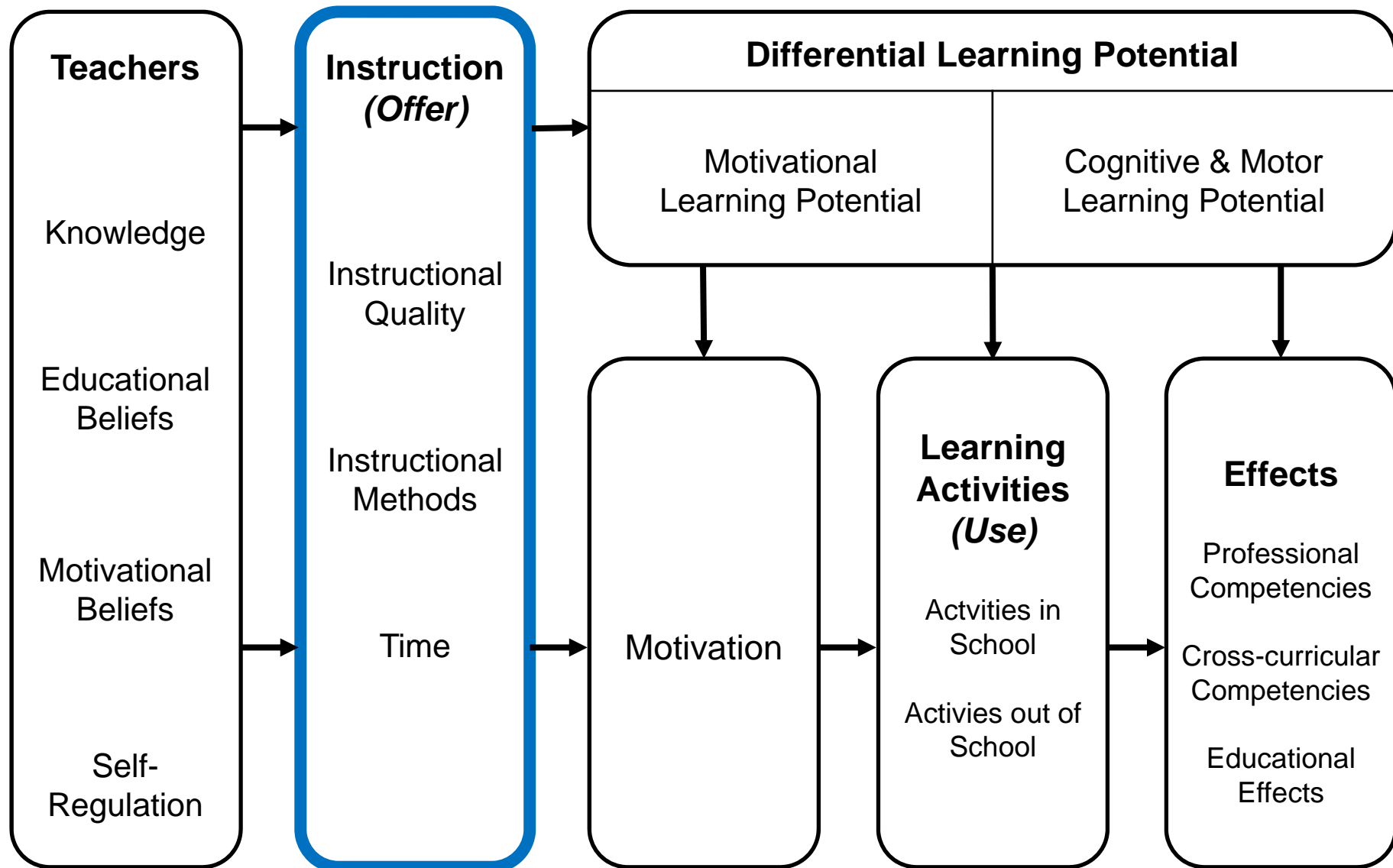
(Fraser, Walberg, Welch & Hattie, 1987, 1984; Scheerens & Bosker, 1997; Helmke & Weinert, 1997
QPE Scheuer & Holzweg, 2014)

Outline

- **What is instructional quality in other subjects?**
- What is instructional quality in PE?
- What are the similarities and differences?
- What does it mean for PE?

Instructional Research

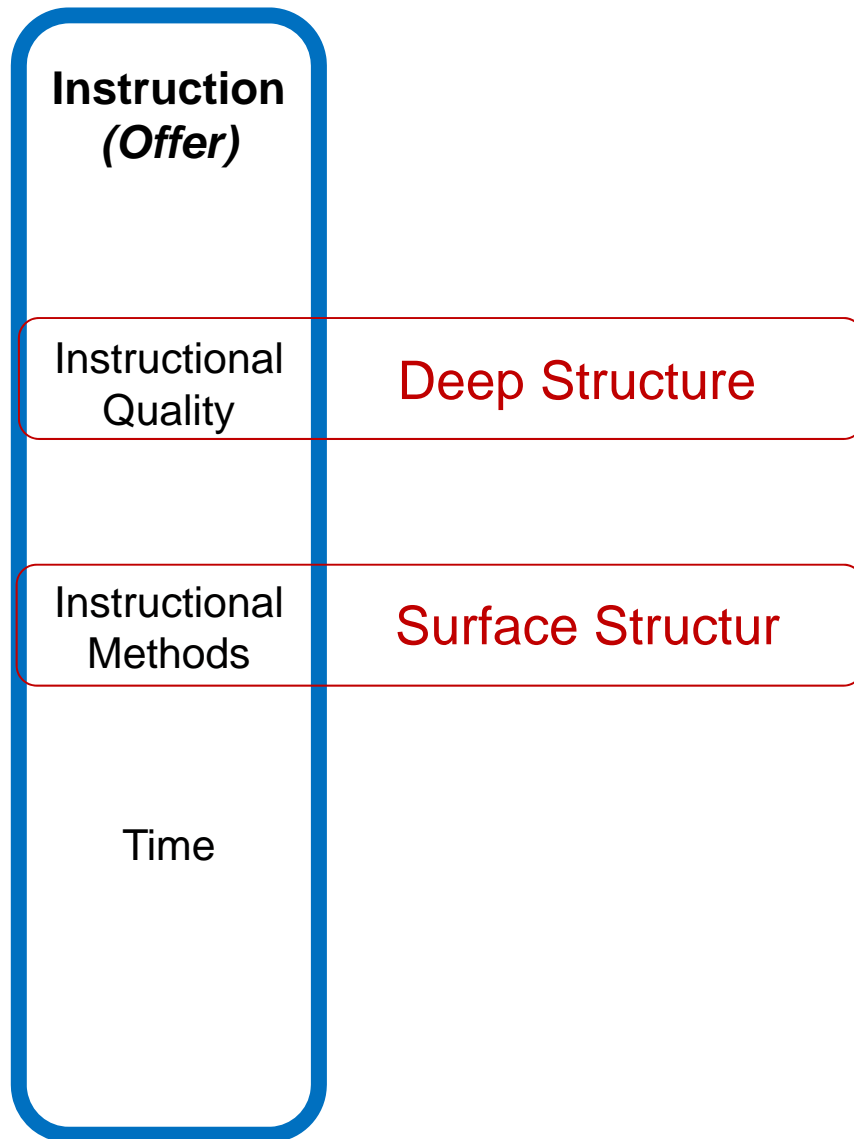
The Offer-Use-Model



(Fraser, Walberg, Welch & Hattie, 1987, 1984; Scheerens & Bosker, 1997; Helmke, 2012; Kunter & Trautwein, 2013;
In PE: Deutscher Sportbund, 2006; Bundesamt für Sport, 2017; Richartz & Zöllner, 2011)

Instructional Research

The Offer-Use-Model



The deep structures has a higher effect for learning outcomes of students than the *surface structure*.

(Seiz et al., 2016; Hattie, 2009; Seidel & Shavelson, 2007; Pauli & Reusser, 2006)

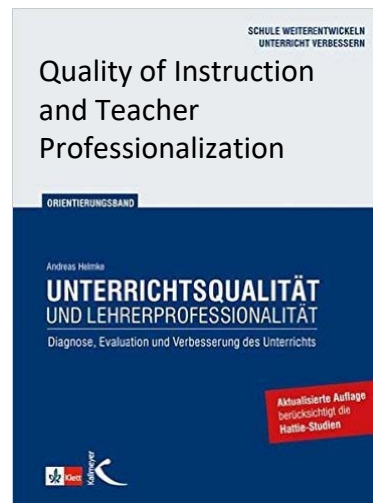
Instructional Research and Didactical Theory

Aspects of Good Teaching

Helmke (2007, 2017)

- Supportive learning climate
- Clarity and structure
- Variety of methods
- Student-orientation
- Cognitive activation
- Saving learning results
- Output-orientation
- Motivating students
- Fitting/managing heterogeneity
- Efficient classroom management

empirical



https://www.friedrich-verlag.de/shop/media/catalog/product/cache/6c721b9f620a812d20e3161a0d0ac6ab/1/1/11009-cover_1_7.jpg

Meyer (2004, 2016)

- Supportive learning climate
- Structure
- Variety of methods
- Individual promotion
- Intelligent practicing
- Clear learning expectations
- Content clarity
- Meaningful communication
- Prepared learning environment
- High portion of learning time

theoretical



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Instructional Research and Didactical Theory

Aspects of Good Teaching

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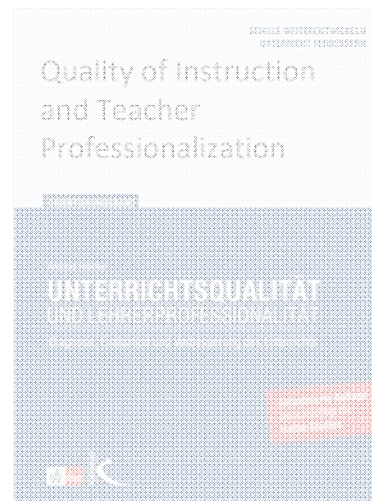
Meyer (2004, 2016)

- Supportive learning climate
- Structure
- Variety of Methods

«One central direction of impact of modern instructional sciences is the identification of superordinate factors, ... especially sufficiently independent and economical core principles of quality of instruction in all subjects.»

(Helmke & Klieme, 2008, S. 306)

- Output-Orientation
- Motivating students
- Fitting/managing heterogeneity
- Efficient classroom management



- Content Clarity
- Meaningful Communication
- Prepared learning environment
- High portion of learning time





Instructional Quality in **Empirical** Studies

The Three Generic Basic Dimensions

1. Classroom Management ...

describes all actions and strategies of teachers, which aim at, *realizing a structure and a undisturbed learning environment to maximize learning time ("time on task")*.

2. Socio-emotional Support & Classroom Climate ...

describes a student-orientated interaction style, which contains *instructional support for content learning (i.e. learning pace, handling of errors) as well as social support (i.e. valuing teacher-students-relationships) for an active participation*.

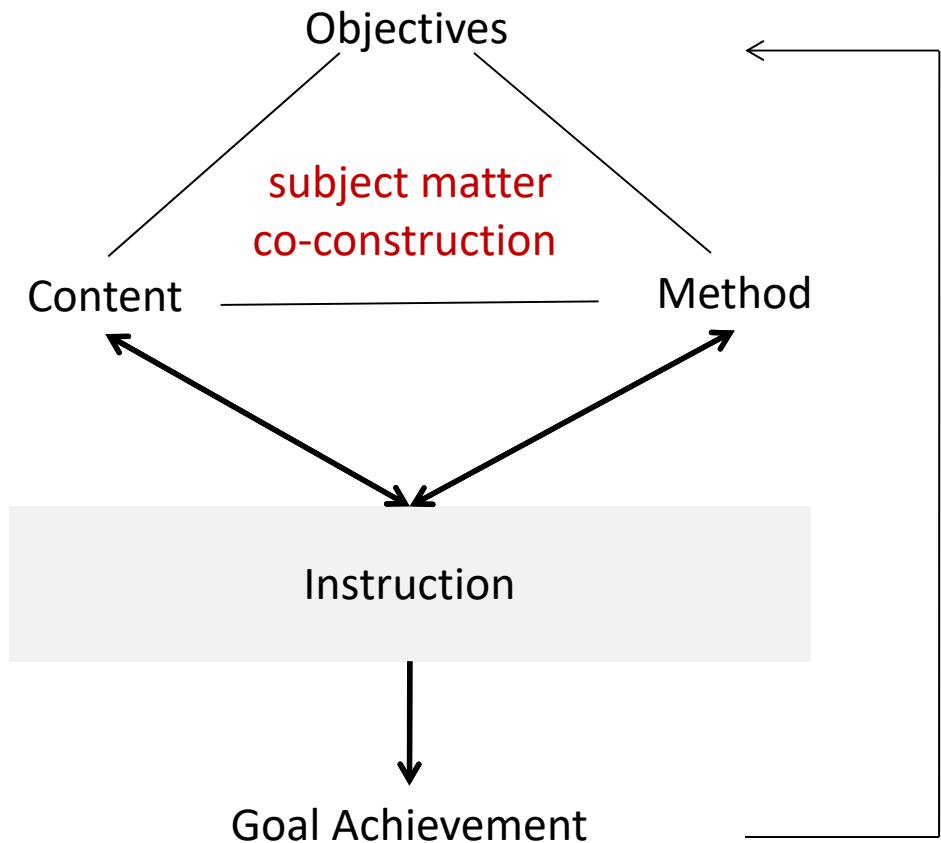
3. Potential for Cognitive Activation ...

describes, how teachers succeed in *stimulating activities of students (i.e. activating conversation), which is focused at a deeper understanding of the contents and subject-specific learning*.

(TIMSS-video study: Klieme et al., 2001; Reusser et al., 2010; CLASS-Tool: Hamre & Pianta, 2010; Praetorius, Klieme, Herbert & Pinger, 2018)

Instructional Quality – A new Synthesis of Generic and Subject-Specific Frameworks

- **Content Selection and Presentation**
(selecting & motivating the content, real world scenarios;
presenting in structured, accurate and correct ways)
- **Classroom & Time Management**
- **Cognitive Activation**
- **Social-Emotional Support**
- **Practicing**
(promoting procedural skills, handling of difficulties & errors in practicing)
- **(Formative) Assessment**
(assessment, checks, feedback, step by step guiding, scaffolding)
- **Cutting-Across Instructional Aspects**
(promoting agency, autonomy, engagement & participation;
differentiation & adaptation)
(Praetorius & Charalambous 2018)



(Praetorius, Nehring, Zülsdorf, Gerlach & Herrmann, 2020)



Outline

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Quality of Instruction in PE

Systematic Review

Gebken (2005) ...

- Clear structure
- High proportion of movement time
- Variety of methods
- Matching of objectives, content and methods
- Student-feedback und bonding
- Explicit promoting and practicing
- Clear expectations
- **Movement-friendly instructional climate**

Steinegger (2010, 2013) ...

- Clear structure
- High effective movement time
- Variability of methods
- Clear goal-orientation
- Clear classroom management
- Individual promoting
- Adequate student-orientation
- Anxiety-free instructional climate
- **Verification of safety**
- **Multiperspectivity**

Quality of Instruction in PE

Systematic Review

I. Classroom Management	II. Socio-emotional Support/ Social Climate	III. Cognitive & Motor Activation
<p>Discipline and time management</p> <p>Clarity of rules and objectives</p> <p>Smooth organization</p> <p>Ubiquity of the teacher</p> <p>Consideration of the competitive elements of sport</p> <p>Consideration of room and safety</p>	<p>Solicitousness of the teacher</p> <p>Readiness to help other students</p> <p>Positive Feedback</p> <p>Emotional Support</p> <p>Consideration of physical exposure</p> <p>Consideration of the multiperspectivity in PE</p>	<p>Challenging Tasks</p> <p>Structure</p> <p>constructive</p> <p>Feedback and Scaffolding</p> <p>Focusing on relevant aspects of the task</p> <p>Stimulation for information processing and interpretation</p> <p>Understandability in explanations</p>

(Herrmann, 2019; Herrmann, Seiler & Niederkofler, 2016; vgl. Heemsoth & Krieger, 2018; Herrmann, Seiler, Pühse & Gerlach, 2015; Niederkofler & Amesberger, 2016)

Classroom Management

„Movement Time“ – a specific aspect of PE?

- *Nominal time:* 100 % (90 min.)
- *Real time:* ca. 80-90% (- room change, change clothes)
- *Usable instruction time:* ca. 65-75% (- installation of equipment)
- *Instructional time:* ca. 50-55% (- explanations, organization, transitions)
- *Movement time:* ca. 15-25% (= 20 min)

(van der Mars, 2006; Hoppe & Vogt, 1979; Hoffmann, 2011; Wydra, 2009; Kühnis et al., 2017)

„PE deniers“...

... are physically more passive.

... are less participating in PE
producing higher heterogeneity

(Klingen, 2003; Balz, 2005; König, 2009; Kretschmann & Krüger, 2011)

➔ Only about 20% of the whole lesson time can be used for movement and exercise.
What kind of effects can be expected? Which effects are sustainable?

Change of terminology from «Movement time» to «Movement learning time»

Socio-Emotional Support & Classroom Climate

Related terms «Instructional Climate» and «Social Climate» (Eder, 2006; Saldern & Littig, 1985):

- Positive student-teacher-relationships (i.e. solicitousness of teachers)
- Positive student-student-relationships (i.e. readiness to help)
- General aspects of instruction (i.e. motivational feedback, satisfaction)

(Gerlach, 2005; Niederkofler, Herrmann, Seiler & Gerlach, 2015; Herrmann, Seiler, Pühse & Gerlach, 2015, KIKSS-Fragebogen; Heemsoth & Miethling, 2012)

But in PE:

- ... transparency of motor performance (Gerlach et al., 2007)
- ... shame and “physical exposure” (Miethling & Krieger, 2004)
- ... dominance of the sport culture, specific body perception norms and competitive environment

(u. a. Sobiech & Marks, 2008; Klinge, 2009; Klinge & Wiesche, 2017)

Cognitive and Motor Activation

- Movement in PE can be described by an interplay between action and (implicit or explicit) knowledge
- Activation should have influence on three activities: *planning, realization, interpretation*

Aspects of activation:

- Challenging tasks
- Understandability of tasks
- Structured learning process
- Focusing on relevant aspects (internal or external)
- Stimulation of processing und interpretation results
- Feedback and scaffolding

(Niederkofler & Amesberger, 2016)



(Pictures: Christian Herrmann)



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Similarities and Differences in PE & in the educational research framework

Perspective from PE onto the new framework:

- ***Classroom management*** is partly subject-specific (time on task in action, preventing accidents, flow of movement, environment)
- ***Cognitive activation*** is too narrow for PE; ***motor activation*** and action should be added
- ***Climate aspects*** are in the PE literature much more detailed

Perspective from the new framework onto PE:

- ***Content Selection and Presentation*** can be regarded as QPE indicator
- ***Formative Assessment*** and practicing were regarded as an implicit part of activation and action
- ***Cutting-Across Instructional Aspects*** were seen as superordinate aspects in PE

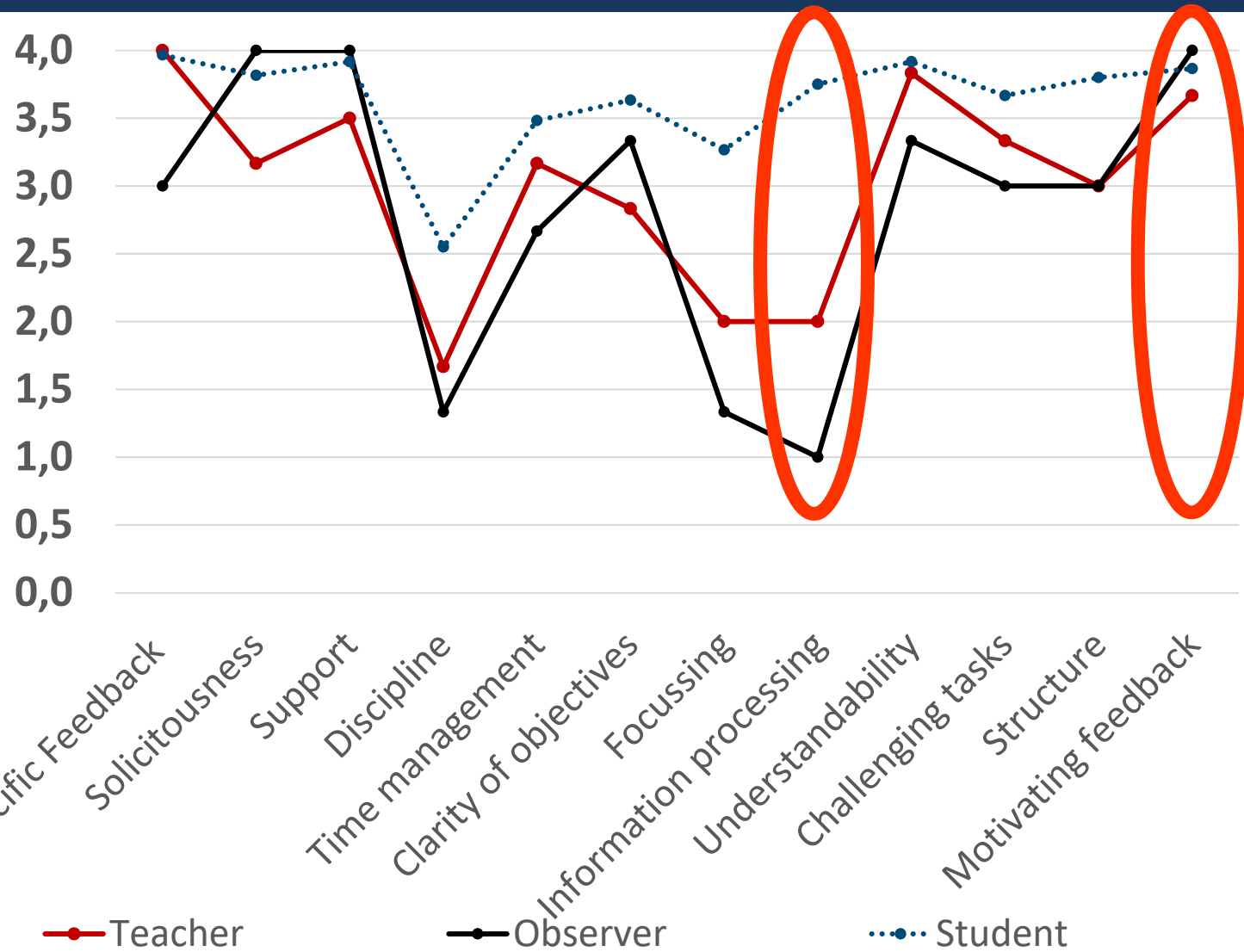


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Multidimensional Evaluation of QPE

Herrmann et al, in prep.

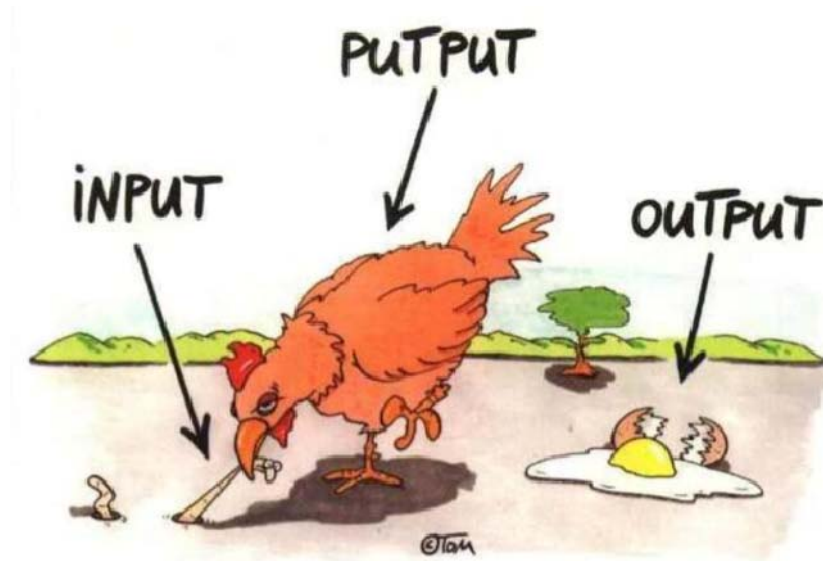


What does it mean for PE?

- Research on instructional quality in PE and other subjects matches
- Some subject-specific amendments are necessary (i.e. sub-dimensions of classroom management)
- More theoretical foundation and empirical research on activation necessary
- QPE should be regarded together with the specific “objective-content-method-configuration “and needs subject-specific expertise
- Some aspects of the new framework are blind spots in QPE-research
- Final question: Can QPE-aspects explain the variety of output- and outcome-aspects in PE in empirical studies?

Outlook

- Interdisciplinary research across subjects and comparison between subjects
- Feedback instrument for preservice and in-service PE teachers in practice
- Application of subject-specific instruments in school visitation, school inspection and demonstration lessons (formative and summative evaluation)



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