

Benefits of tablets in school

MoLTAM LTT Activity
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Michael Reder
Thomas Rudel

Wildermuth-Gymnasium Tübingen

Benefits of tablets in school

- **Visualizations to enhance conceptual understanding**
 - ➔ refers to an integrated and functional grasp of ideas
- **Adaptive learning tasks**
 - ➔ Adaptive learning is a technology based educational system that analyzes a student's performance in real time. As a consequence teaching methods can be adapted based on that data.

Benefits of tablets in school

Tablets should not only substitute traditional media (e.g. books), but redefine the way of teaching and learning!

(Puentedura, 2006)



SAMR Model

R EDEFINITION

Technik ermöglicht das Erzeugen neuartiger Aufgaben, die zuvor unvorstellbar waren

UMGESTALTUNG

M ODIFICATION

Technik ermöglicht beachtliche Neugestaltung von Aufgaben

A UGMENTATION

Technik ist direkter Ersatz für Arbeitsmittel mit funktionaler Verbesserung

VERBESSERUNG

S UBSTITUTION

Technik ist direkter Ersatz für Arbeitsmittel ohne funktionale Änderung

kein Medieneinsatz



But:

Teachers tend to not fully exploit the potential of technologies in their classroom!

(Harris et al., 2009, Schmid et al., 2017)



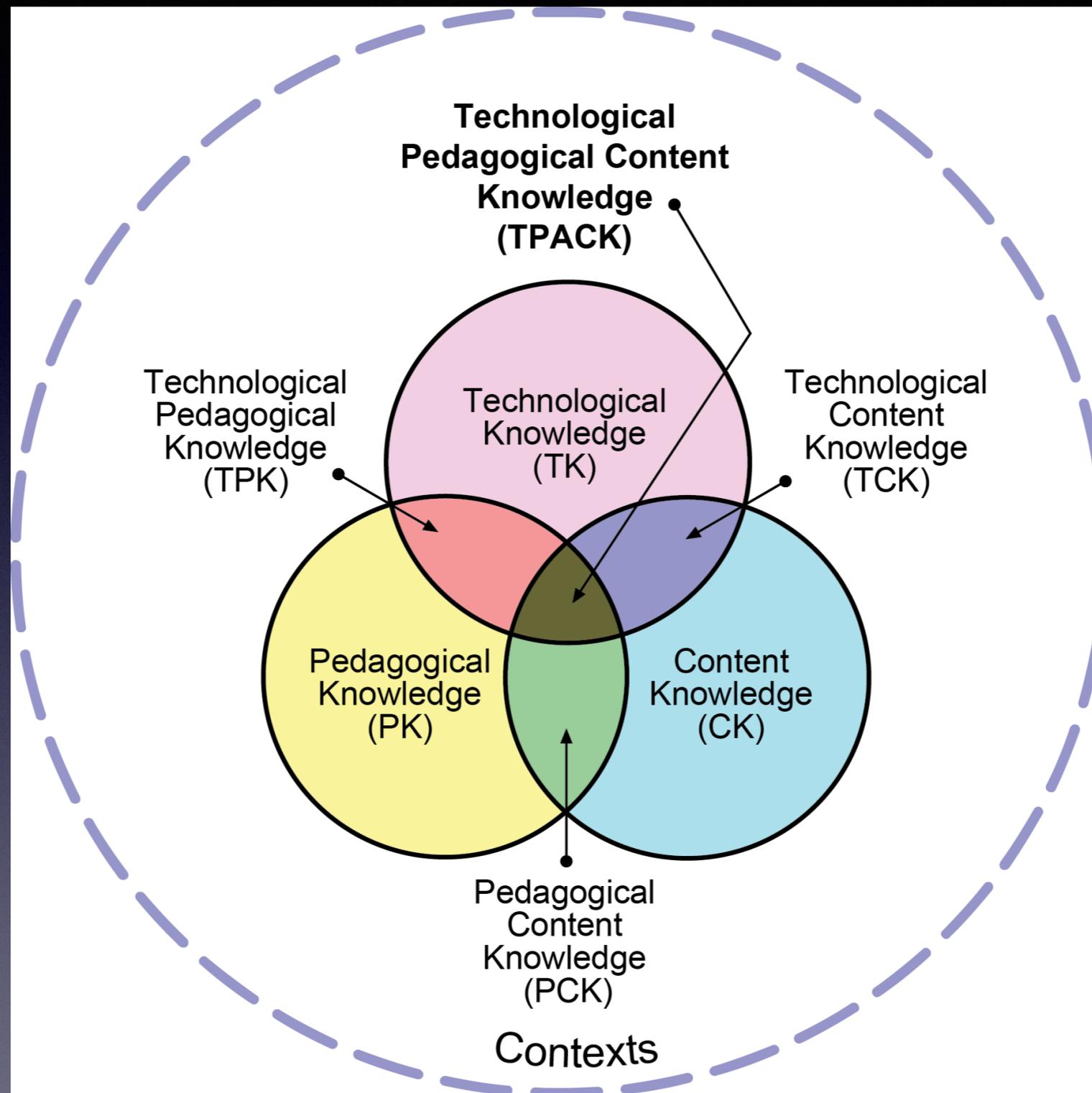
Which of teachers' cognitive and motivational conditions influence technology-enhanced instructional quality?

Teachers' cognitive and motivational conditions for technology use in class



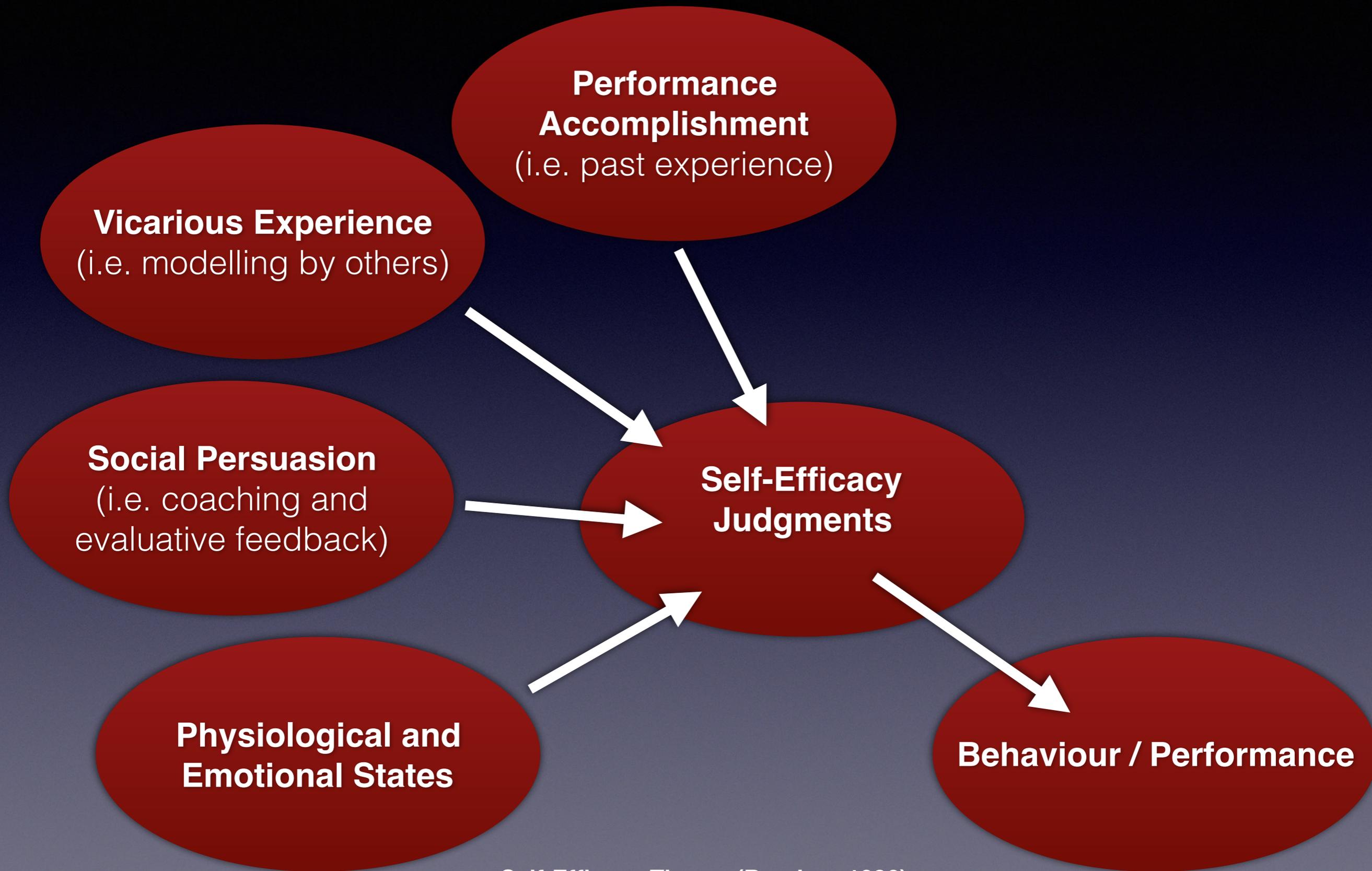
1. Technological Pedagogical Content Knowledge
2. Self efficacy
3. Perceived utility value

The TPACK Model



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Self Efficacy



Self-Efficacy Theory (Bandura 1986)

Utility Value

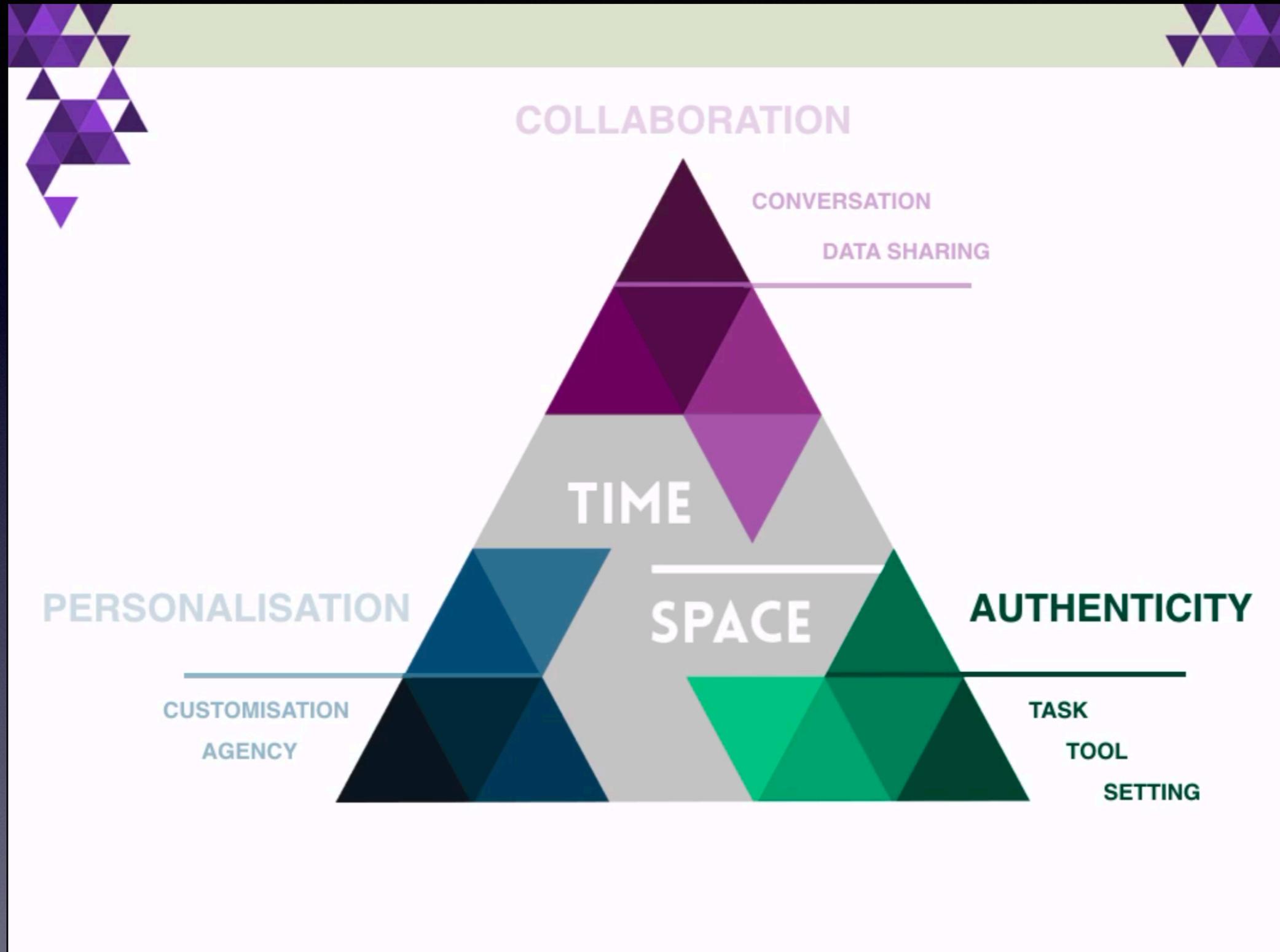
Perceived utility value refers to the degree that a task is seen as relevant and significant to one's life or further assignments.



„Der **Einsatz digitaler Medien** muss dabei einen Mehrwert für die Lehre darstellen und sich am Nutzen für die Studierenden und die Lehrenden messen lassen. Ein wesentlicher Mehrwert besteht in der **Individualisierung, Flexibilisierung** und **Verbesserung der Reichweite** der Lehrangebote, z. B. in Formen des Blended Learning. Sie sollen barrierefrei zugänglich und nutzbar sein und der **Diversität** der Studierenden Rechnung tragen. Je nach **Kenntnisstand** und **Lerntempo** sollen die Studierenden mittels digital unterstützter Instrumente und Maßnahmen die Kompetenzaneignung den eigenen Bedürfnissen anpassen.“

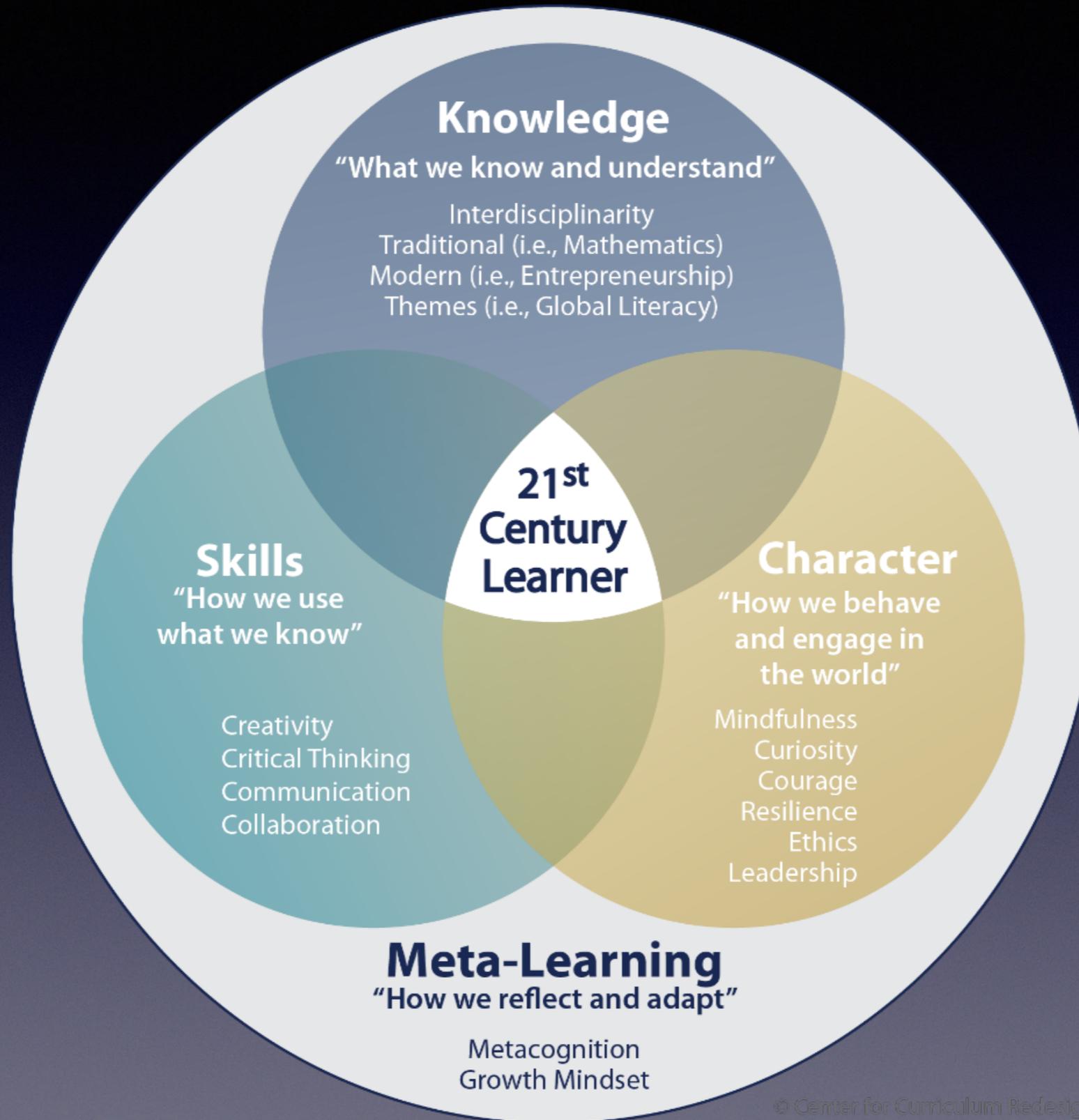
Bildung in der digitalen Welt. Strategie der Kultusministerkonferenz (2016)

The The iPAC Framework



Based on work by Kearney, Schuck, Burden & Aubusson, 2012
<http://www.mobilelearningtoolkit.com/>

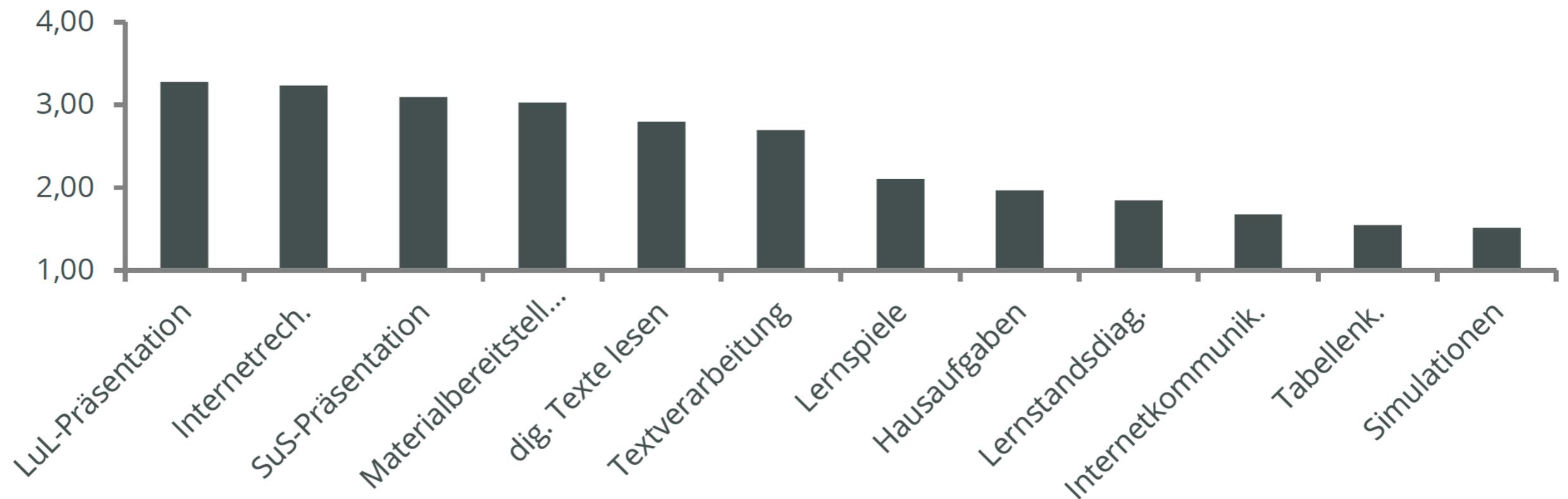
The CCR Framework



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How are digital media used in lessons today?

Aktuelle Nutzung digitaler Medien im Unterricht



Ergebnisse der Befragung zu Beginn des tabletBW-Projekts

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Results

1. Experienced In-service and teacher trainees achieved a higher quality in the lesson planning process. The perceived utility-value seems to have a positive affect on the quality of lesson plans.

Results

2. According to a six-week-study of tablet-based lessons and motivational facets there was no improvement of the quality of lessons but again a positive estimated or perceived utility-value seems to have a positive influence on the quality of lessons.

There was no intervention (feedback or teachers' training) in the course of the study.

Examples

I started with a **Youtube** movie about the castle of Versailles, which I presented to the class using the teacher's tablet. Afterwards the **SuS should work through a chapter in the mBook** story, but only the presentation texts and pictures - since I don't like the work orders, I had formulated my own work orders and projected them using the teacher tablet. (...)

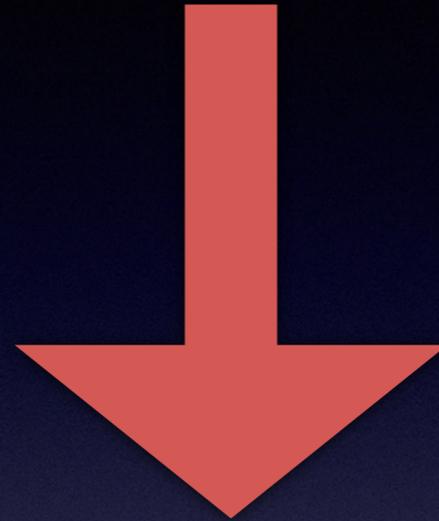
On segu-history there is a pair of **overlapping maps** showing the denominational affiliation of different areas of Germany in 1648 and 2011 respectively. By **moving a slider** one of the two maps is moved to the foreground. (...)

Two different lessons of a history teacher with perceived low utility-value (above) contrasted to high utility-value (at the bottom).

(Segu is an internet platform for history teachers.)

According to Iris Backfisch, IWM Tübingen, 2019

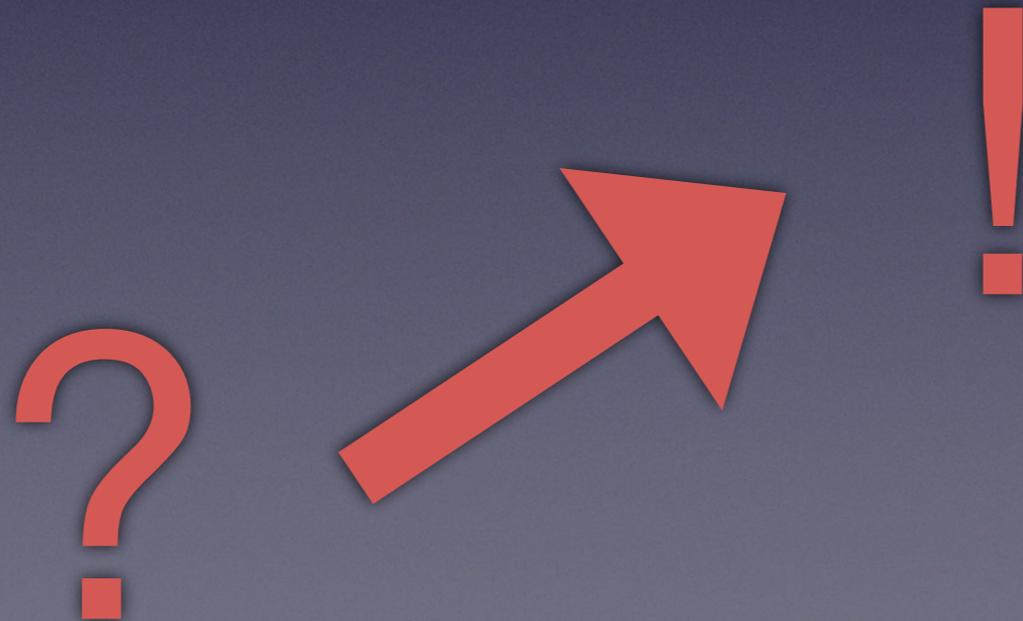
Results



If there is an estimated and perceived utility value, the quality of lessons is higher.

Conclusion

We should motivate teachers to use digital technology in classrooms and foster the awareness that digital media can be used for achieving new and different goals.





self-efficacy
“I can do it”

X



perceived utility-value
“I see the value in it”

=



assignment design and persistence
“I will stick to it for quite a while”

Eccles & Wigfield, 2002; Taimalu & Luik, 2019
According to Iris Backfisch, IWM Tübingen, 2019