SlideWiki & tech4comp

Two large scale digital education projects within the EU and Germany

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SlideWiki

Leibniz Universität Hannover

- Funded as an EU Horizon 2020 project
- 7 Mio. €, 01/2016 till 12/2018, 17 partner institutions from all over the EU

- Topic: Creating a large scale accessible learning and teaching platform using educational technology, skill recognition and global collaboration

Follow up projects:

- Closely linked
  - SlideWiki Association
  - Inclusive OCW
  - Educational Innovation Project
  - Learning Big Data Analytics with SlideWiki (LAMBDA)
- Loosely linked
  - tech4comp

Prof. Dr. Sören Auer

SlideWiki Partners

Fraunhofer Institute for Intelligent Analysis and Information Systems
Germany

University of Southampton
United Kingdom

ATHENA Research & Innovation Information Technologies

Institut for Applied Informatics
Germany

IHK Bildungszentrum Halle-Dessau
Germany

National Centre for Public Administration and Local Government (EKDDA)
Greece

The Open University
United Kingdom

Universidad Politécnica de Madrid
Spain

Leibniz University Hannover
Germany

Institute Mihajlo Pupin
Serbia

Universidade Federal do Rio de Janeiro
Brazil

Ayuntamiento de Zaragoza
Spain

Universitat Politécnica de Valencia
Spain

Vrije Universiteit Amsterdam
Netherlands

Greek Free/Open Source Software Society
Greece

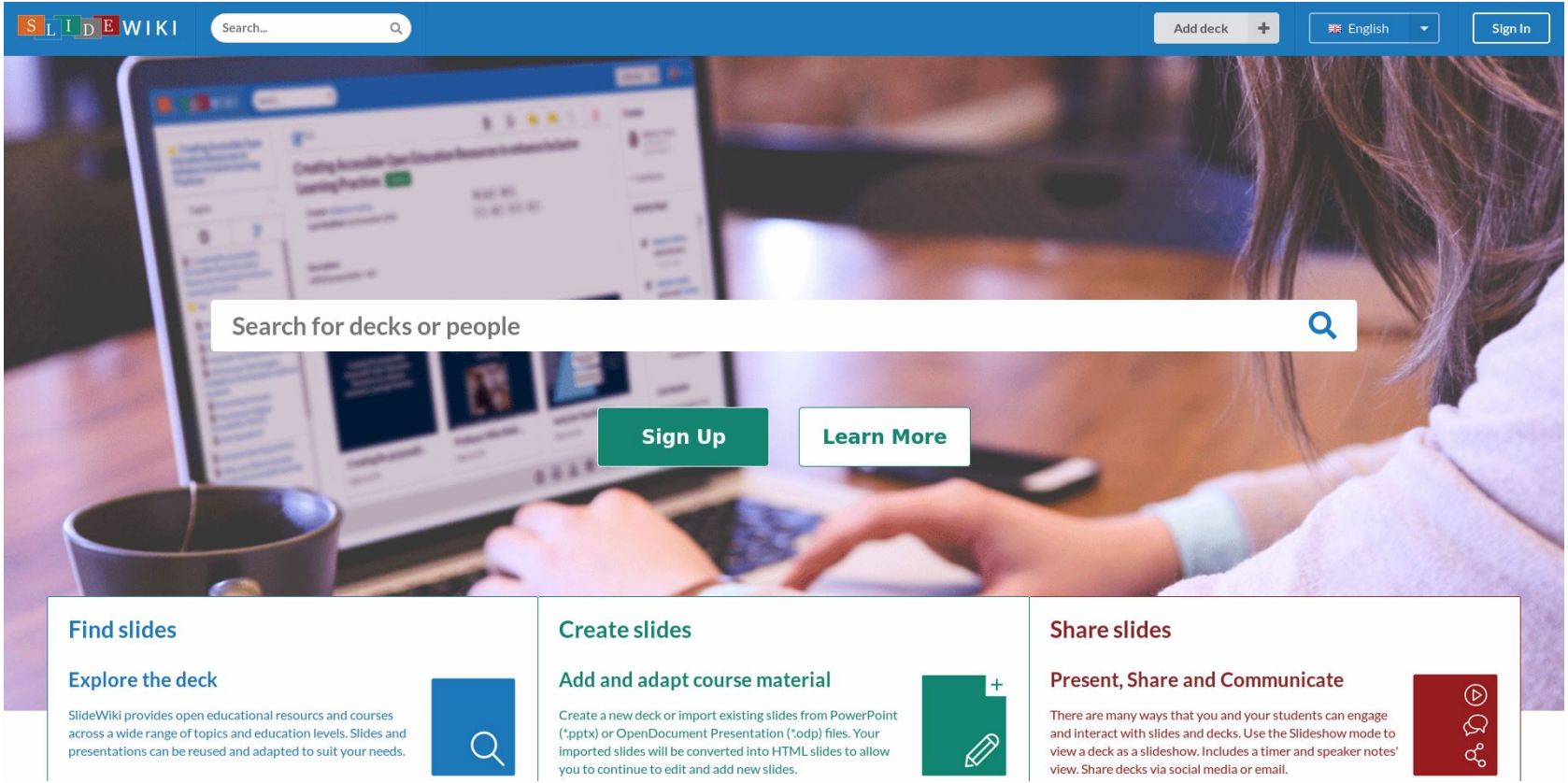
Scuola di Robotica
Italy

ACCEDES
Spain

Educators all over the world are recreating, restyling, modernizing, ... their educational content every day, even though 90% of their material is the same

Stop reinventing the wheel every day!

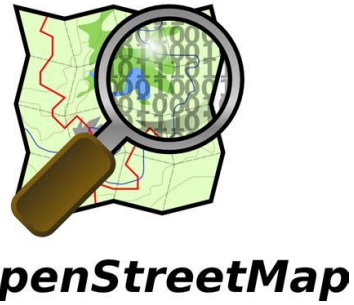
What's SlideWiki?



SlideWiki Key Points

- Legal Reusability
- Multilinguality
- Format repurposeability
- Recency
- Learning by Self-assessment
- Engaging course material
- Community Involvement

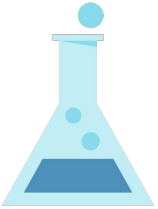
Inspired by:



SlideWiki Key Points

- Hosts high quality **OpenCrouseWare** only
- Benefit from **materials created by world-leading educators**
- Revolutionises how educational materials can be **author**ed, **share**d and **reuse**d
- Use wisdom, creativity and productivity of the **crowd**
- Automatically **tracks provenance information**
- Enables to use possibilities of the WWW in your decks
- Easily **connect to content creators** and content consumers
- Solves real world problems of the **OER community** and educational content providers
- **Link** relevant **stakeholders** in educational technology with regard to geographic, technologic and learning stage related aspects
- Truly **free, open-source** and **self hostable**

Research as of SlideWiki



Social Science

- How to ensure accessibility and inclusive learning
- User-based collaborative filtering for content recommendation

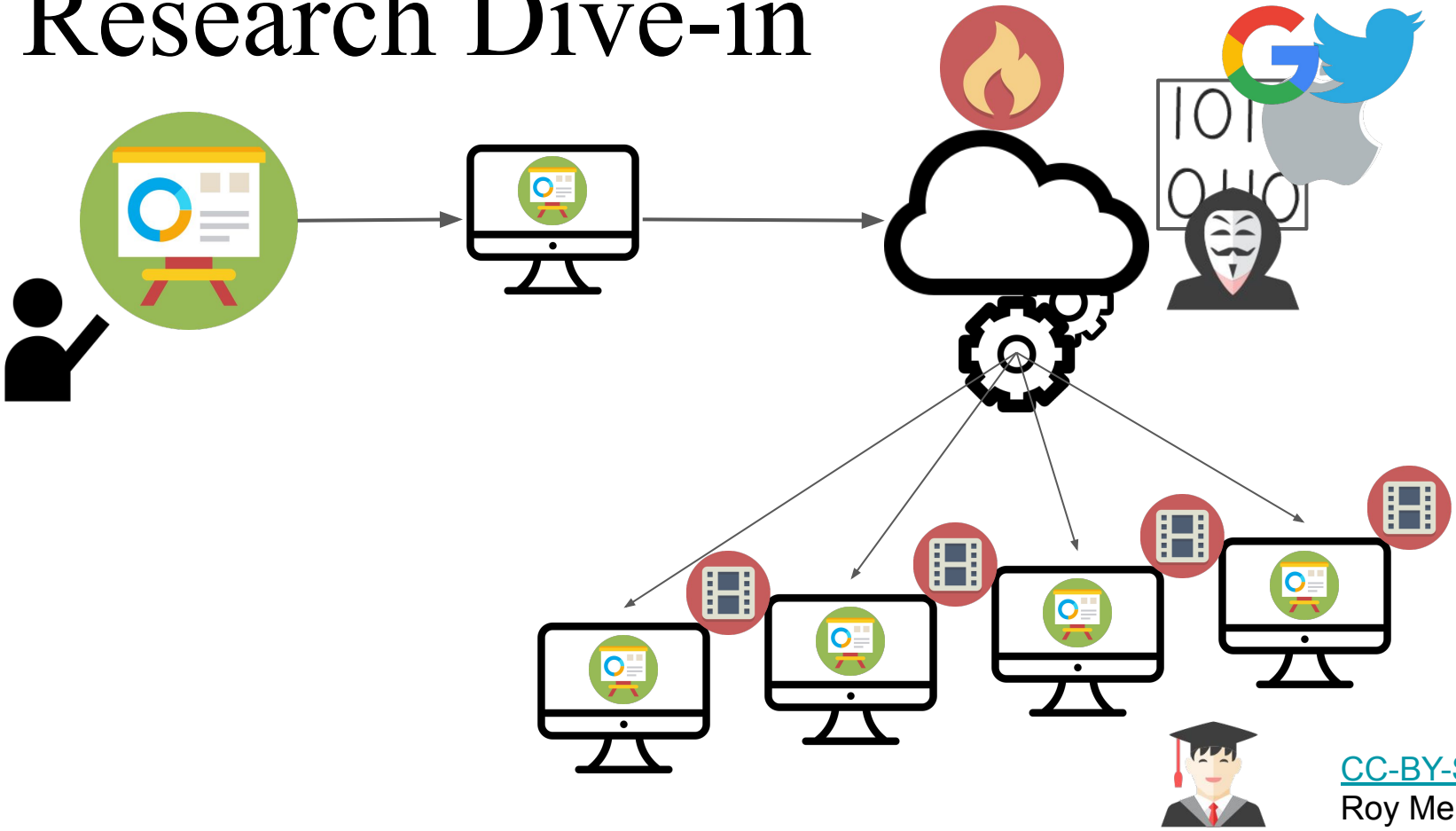
Computer Science

- Leverage decentralized technologies for webinars
- Ontology-Based representation for accessible OpenCourseWare systems
- Microservice Architecture

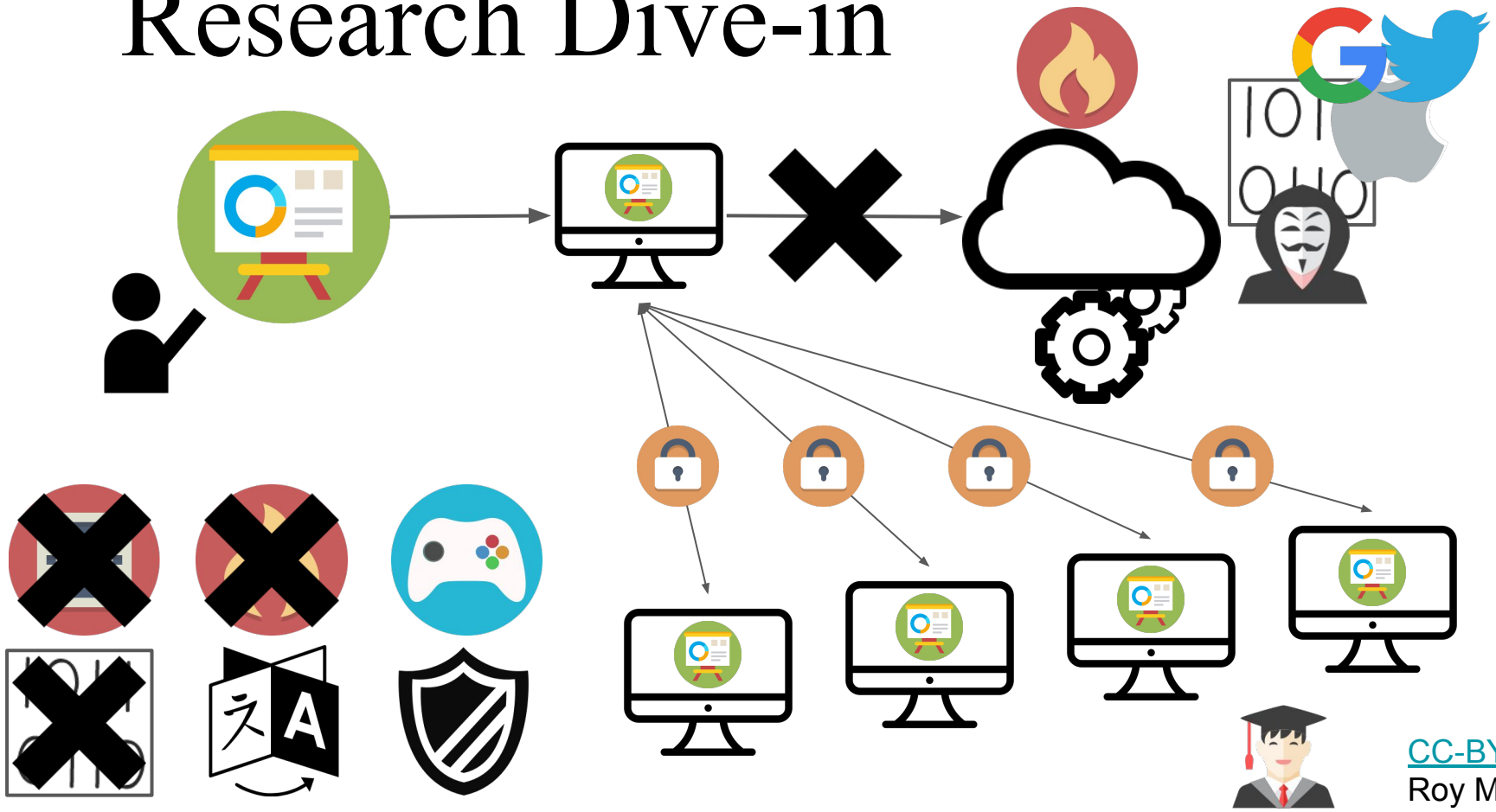
Educational Science

- Creation of learning materials by leveraging crowdsourcing
- Impact of dynamic webinars on technology acceptance by students
- Inclusive learning for people with physical, sensory & cognitive disabilities & impairments

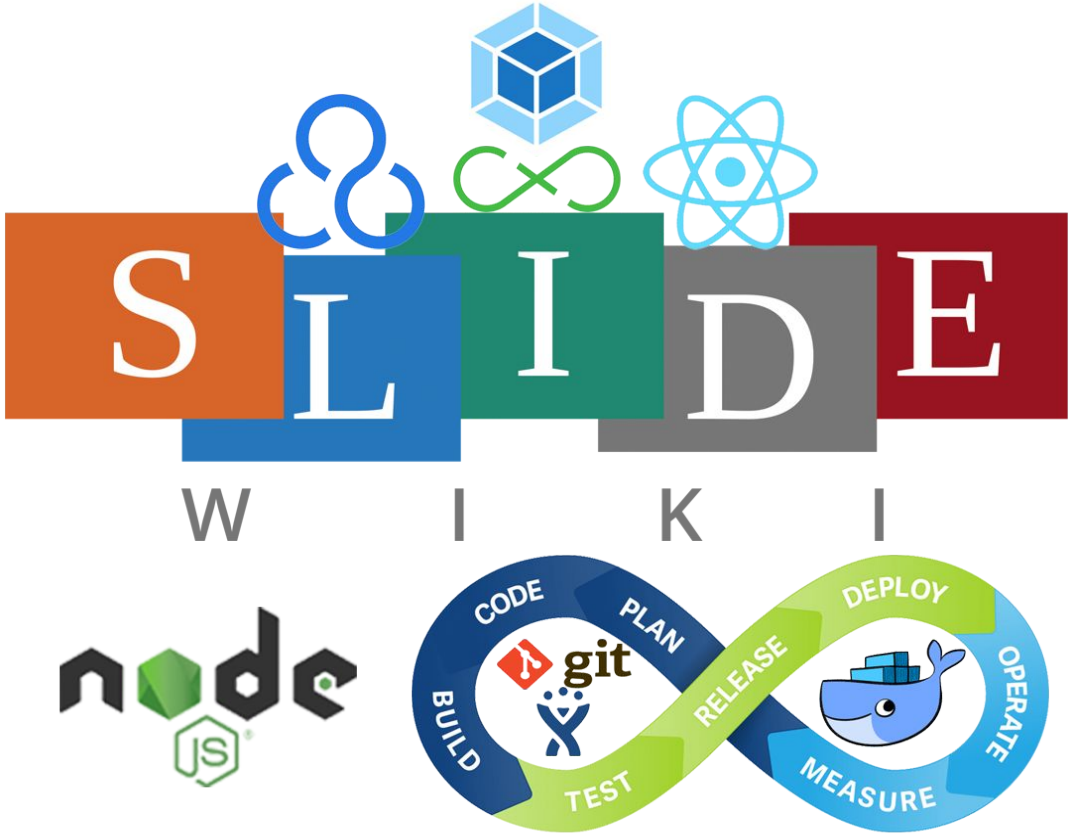
Research Dive-in



Research Dive-in



Technology of SlideWiki



- React
- Fluxible
- Semantic-UI

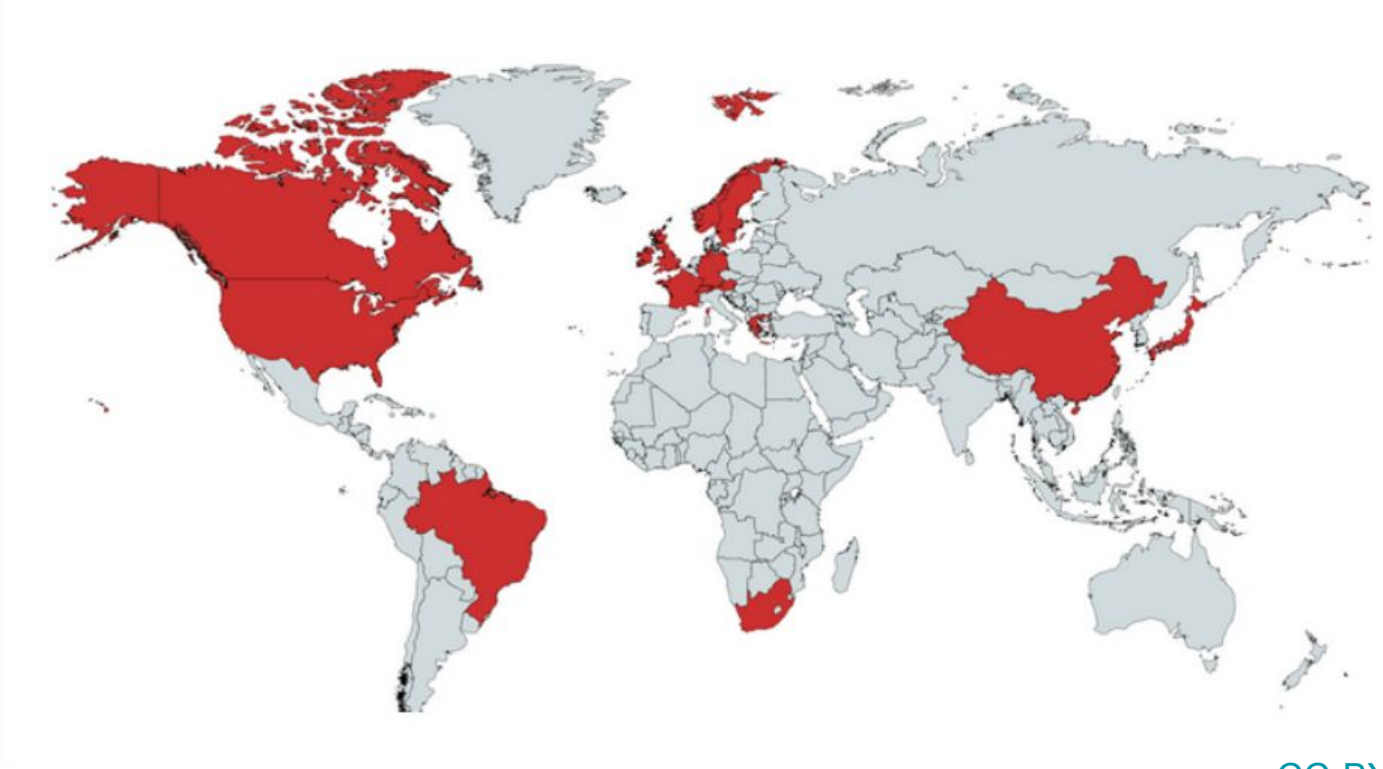
- Hapi
- NodeJS
- MongoDB

- Git
- Docker & Compose

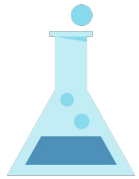
- Microservices (SOA)
- Isomorphic Rendering

- Purely FLOS Software

International Advisory Board



Links about SlideWiki



- Publications - https://slidewiki.eu/results/publications/
- Deliverables to the EU are open to read - https://slidewiki.eu/results/deliverables/
- Tutorial Videos - https://slidewiki.eu/slidewiki-videos/
- Webinars - https://slidewiki.eu/slidewiki-webinars/
- Social-Media
    - https://twitter.com/SlideWiki
    - https://www.facebook.com/slidewiki/
- SlideWiki - https://slidewiki.org/
- SlideWiki @ Github - https://github.com/slidewiki/

Live Demo

Official SlideWiki
https://slidewiki.org/playlist/209?sort=order

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Institutional SlideWiki
https://slidewiki.aksw.org/deck/6/business-information-systems-5.-lesson

tech4comp

Competency development through scalable E-Mentoring

UNIVERSITÄT LEIPZIG

TECH4COMP

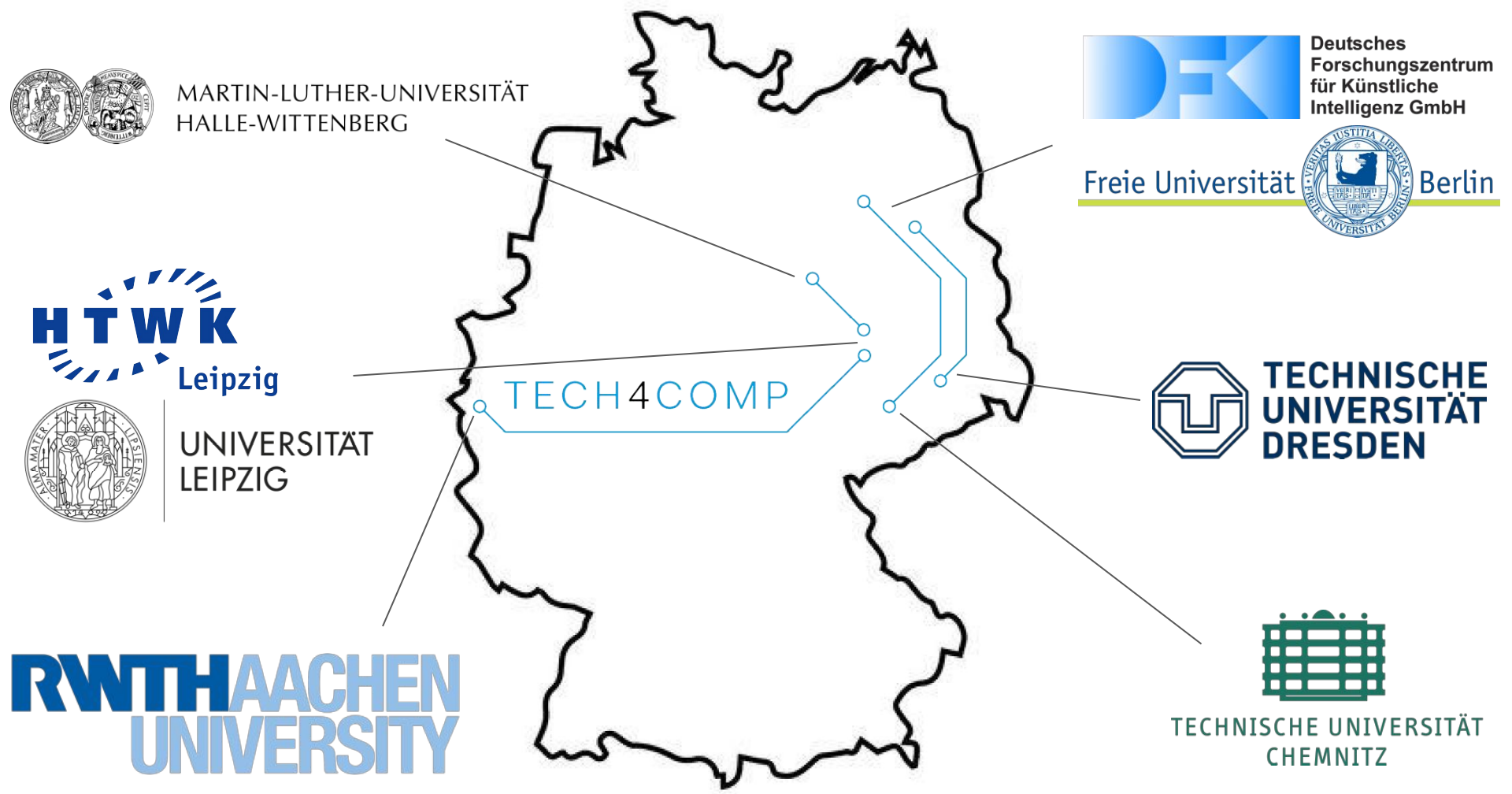
tech4comp

UNIVERSITÄT LEIPZIG

- Funded by the Ministry for Education and Research of Germany
- 7.3 Mio. €, 3 ½ Years until 2022, ~34 employed people
- Interdisciplinary research & development Team
    - Educators
    - Education Researchers
    - Computer Scientists
    - Psychologists
- Topic: Personalized competency development through scalable E-Mentoring processes

© Anke Tornow

Prof. Dr. Wollersheim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TECHNISCHE UNIVERSITÄT
CHEMNITZ

Imagine you got a course with about 600 students each semester and only 6 research associates

-

how do you do individual mentoring?

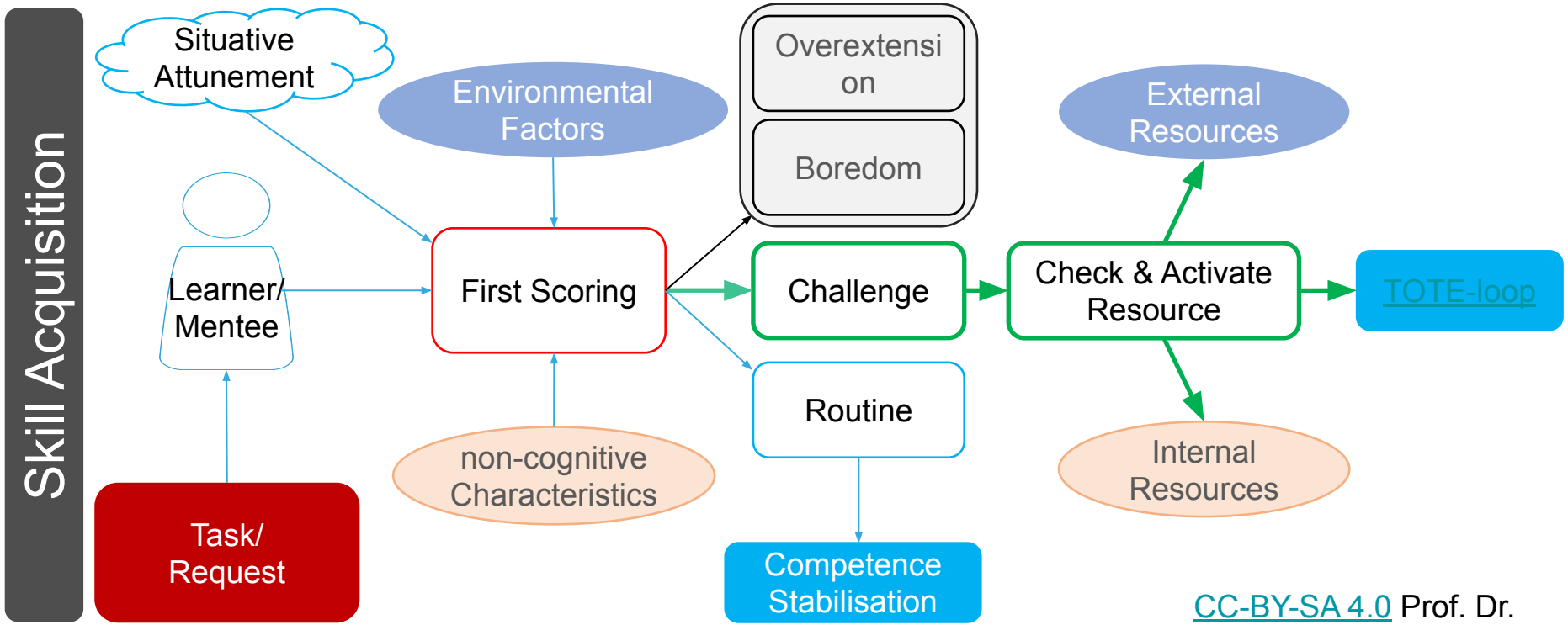
… you can’t

Only the learner is able to learn

-

Create learning environments in which learners like to spend time and co-construction processes become more probable

Skill Acquisition



Tech4comp Goals

Central Question:

How should design concepts look like that make the proven quality of individual mentoring scalable for the acquisition of competences?

- Leverage modern technology to get better insights faster
- Find sustainable options to use automated E-Mentoring
- Adapt to changing course concepts and contents
- Enable live feedback loops

Traditional Mentoring

Traditional Mentoring	is mapped by
Experience, Knowledge, Networks of the Mentor	Domain Model
Goal phraising	Didactical Model und Competence Model (Learning Outcomes)
Determination of possible steps and paths to gain competence Selection of fitting learning content and material	Education Model / Didactical Model Knowledge Model
Presentation of the assessment of the initial situation and observation of the competence acquisition	Learner Model
Adaptation of learning content and exercise task by the competency acquisition process	Didactical Model and AI-based adaptivity
Feedback & Reflection	Didactical Model and AI-based adaptivity

Example Challenges (1)

How to create a sustainable domain model?

- Don’t create an Ontology, create a **Epidemiology (--> a Graph)**
- Create it **automatically** by parsing the resources
- **Map** created **epidemiologies on each other** to not lose curated information
- **mount information** to the graph

Prof. Dr. Pablo Pirnay-Dummer and his team @ Halle University uses T-Mitocar (Artemis)

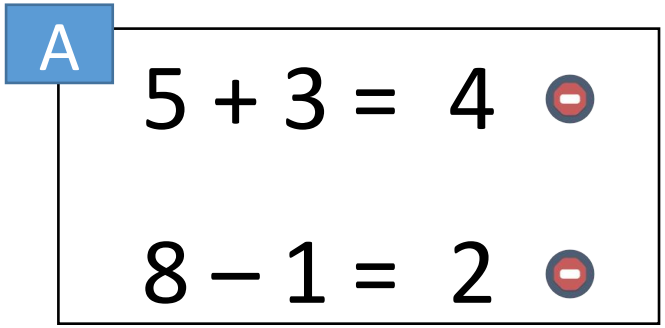
Example Challenges (2)

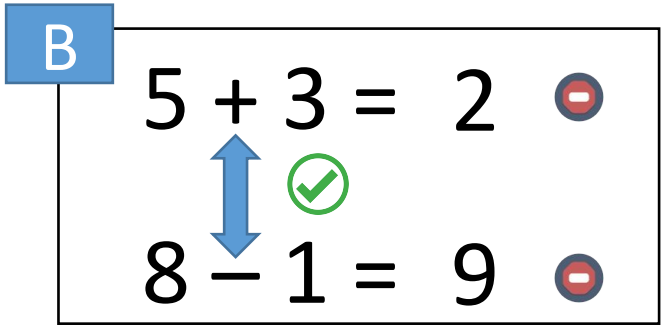
Analyse assessment results

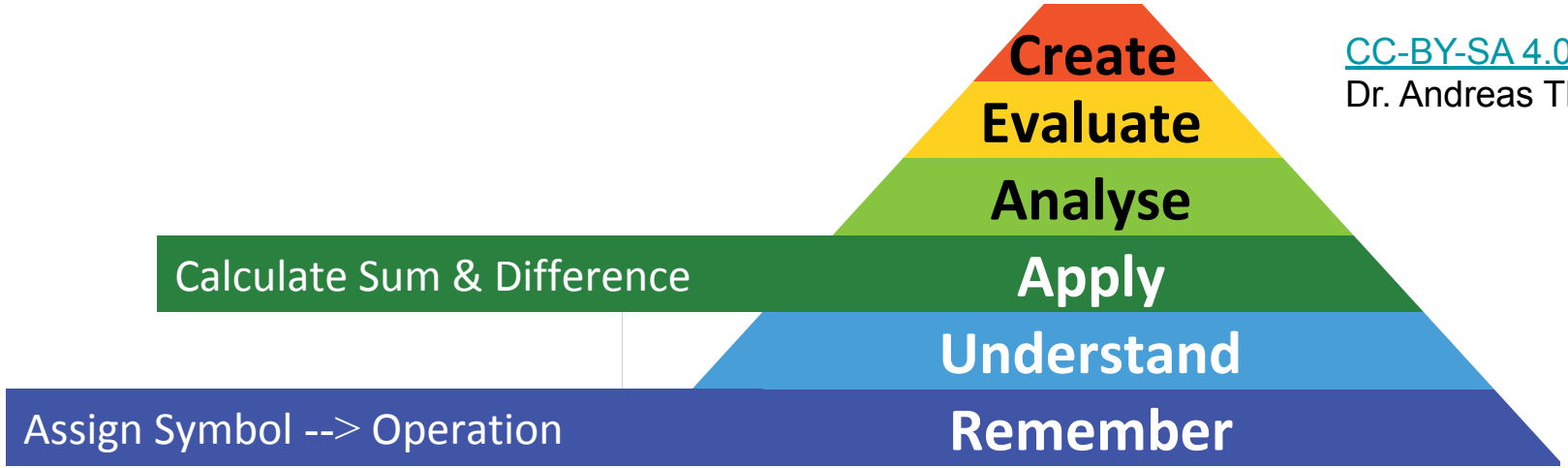
- Annotation of assessment items
- **Automatic annotation** of assessment items
- **Deep annotation** of tasks & answers to identify partial competences
- Use links to the domain model to **close the gap** to further resources

Prof. Dr. Andreas Thor and his team @ Leipzig University using EAs.LiT

Identification of competences with failed tests







Example Challenges (3)

AI supported mentoring

- Establish a sustainable **data collection environment** (@RWTH Aachen)
- Train an AI that **adapts to** different **types of learners**
- Continues **AI training** based on “small” datasets
- Pre-evaluate learners for personal feedback

Prof. Dr. Christoph Igel and his team @ DFKI Berlin

Links about tech4comp

- Website - https://tech4comp.de/
- Gitlab - https://gitlab.com/Tech4Comp
- Press Release (german) - https://www.erzwiss.uni-leipzig.de/fakultaet/personen?view=proforschungsprojekt&id=325
- Funding Overview - https://www.wihoforschung.de/de/tech4comp-2383.php

Stay tuned for publications!

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