Adaptive Intelligent System
AIS
What is the current situation in German schools?

Survey amongst school administrators
Disadvantaged children often receive too little support ...

“Highly worrying”: every third ninth grader fails to meet minimum standards in German

92 percent of teachers in NRW are overworked

“After six hours of lessons, I go home and can’t do any more. Without a break, with lots of emotions and many things to think about at the same time. Then I rest for two hours and then I sit down again and revise.”
Susanne, Math and Physics teacher
How will the project be implemented?

**Commission**
of the FWU as project developer
by all 16 federal states

**Financing**
via the DigitalPact for Schools

**Implementation**
by external service providers, close
support by pedagogical expert groups

**Project scope**
initially two subjects, two class levels,
two types of school

**Project Duration**
by mid 2026

**Use of the system**
starting with the school year 2026/27
Adaptive Intelligent System

Adaptive Learning Content

Adaptive Learning Paths

AI-powered Authoring Tools

LMS functionalities

Interfaces to local systems
What do we mean by „adaptive system“?

• **Open**: material from different providers can be linked to the platform
• **Macro level**: adapt offers of material/exercises to the requirements of the student
• **Micro level**: student gets help to clarify questions during an exercise

Examples of „adaptive systems“ in Germany:

• **Bettermarks.com**: only for Maths
• **Research projects**: for German and English; not implemented so far
What could a solution look like?

An adaptive intelligent system supports teachers and students by...

**Student**

- ... presenting personal learning content that is tailored to my skills and progress.
- ... giving me help when I get stuck – even while I'm working on a task.
- ... giving me immediate feedback on my work and helping me to improve.

**Teacher**

- ... helping me to prepare my lessons by suggesting suitable materials.
- ... showing me the learning level of my class, so that I can quickly recognize when there is a need for support.
- ... helping me to individualize lessons and thus better support students.
Example of a Student Dashboard

**Mathematics**
- Today's task: Equations today
- Repetition: Fractions
- Project: Math Olympiad 4 weeks left

**TODAY’S TASK**
Posted by: MS. MEYER
"Solve the first equations at your own pace. If you're still unsure, feel free to watch the video again."

**NEXT TASKS**
- For advanced users: Solving complex equations
- Preparation: Math Olympiad

**MIA SOMMER**
**MY PROFILE**

**CHAT BUDDY**
Where can I find more information about equations?
You can find more information about equations in this advanced tutorial video (learn more).

Ask another question...

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You can find more information about equations in this advanced tutorial video (learn more).
Individual support for learning

Learning is not linear:

- Teacher defines learning unit
  - Student works on task 1
    - Student repeatedly makes certain mistakes on task 1
    - Student looks at review material for the mistakes
    - Student solves short exercise to consolidate what has been learned
  - Student works on task 2
    - Student gets help to clarify questions
    - Student solves task 1 without any problems

Learning unit successfully completed!
Example of a Teacher Dashboard

**Form 7a**

*Today's Task: Introduction to Equations*

<table>
<thead>
<tr>
<th>Klasse 7a</th>
<th>Anna</th>
<th>Ben</th>
<th>Can</th>
</tr>
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</tr>
<tr>
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<td></td>
<td></td>
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</table>

**TODAY**

MATHEMATICS 7/82
Chapter 5.1: Introduction to Equations

**Tomorrow**

MATHEMATICS 7/82
Chapter 5.2: More complex equations

**NOTE**

There is still a need for support on the topic of "fractures" for 6 students of 7a.
Suggestion: Assign learning material and exercises 3.7-3.8 on fractions.
DigitalPact projects of the FWU

- **MUNDO**: Open educational media database
- **eduCheck**: Seal for digital educational media
- **LICENCE CONNECT**: Licensing brokerage
- **AIS**: Adaptive Intelligent System
- **ITS**: Intelligent Tutorial System (included in AIS)
- **SODIX**: Central Content Hub
- **VIDIS**: Single-Sign-On for educational media
- **HuboS**: Hub for vocational schools
- **MEM**: Metadata for educational media
- **MKIS**: Media database with AI-powered services
A common educational media infrastructure
Thank you very much for your attention!

Dr. Susanne Friz  susanne.friz@fwu.de

FWU Institut für Film und Bild
Bavariafilmplatz 3
82031 Grünwald

www.fwu.de