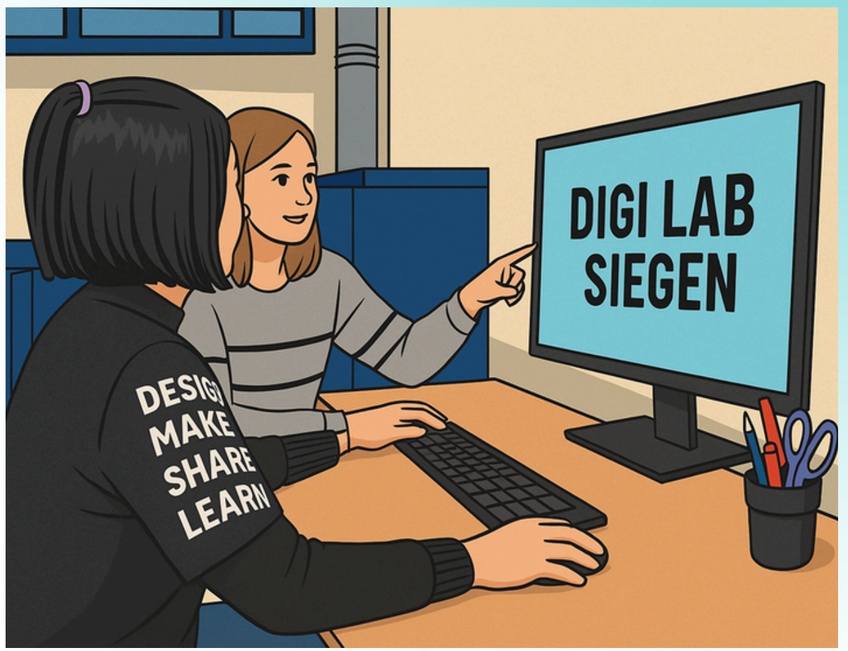

Bridging the Digital Divide: Inclusive Digital Literacy for Individuals with Cognitive Disabilities

Kristina Deryagina
Department of Education | University of Siegen
Email: Kristina.Deryagina@uni-siegen.de
M.Sc. Human Computer Interaction

UNIVERSITÄT SIEGEN

I am Kristina Deryagina, lead instructor of the digital literacy course at the University of Siegen and researcher in digital inclusion. With a background in Human-Computer Interaction (M.Sc), I co-founded a blind sailing team and prepared athletes as an assistant coach for the Special Olympics (Abu Dhabi & LA).

Overview

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Understanding the Digital Divide

200 million

200 million people globally live with intellectual disabilities (ID) (Special Olympics, 2025).

87.2%

In Europe 87.2% of people with a disability use the internet compared to 95.2% of those without dissability (Eurostat, 2023).

44.6%

44.6 % of people with ID and older than 18 years use a mobile phone (Patrick et al., 2020).

>90%

More than 90% of people with ID and older than 18 years do not have a profile on social networks (Patrick et al., 2020).

94.8%

94.8% of websites do not meet basic accessibility standards (The WebAIM Million, 2025)

15%

In high-income countries, only 15% of employers gprovide employees with ID access to digital tools (Dean et al., 2022).

Understanding the Digital Divide

Core challenges

Social stigma and low expectations

Non-adaptable technologies

Inflexible training programs or their complete absence

Critical for:

1. Social participation
2. Education
3. Employment
4. Independent living

Understanding the Digital Divide

Living with Intellectual Disabilities

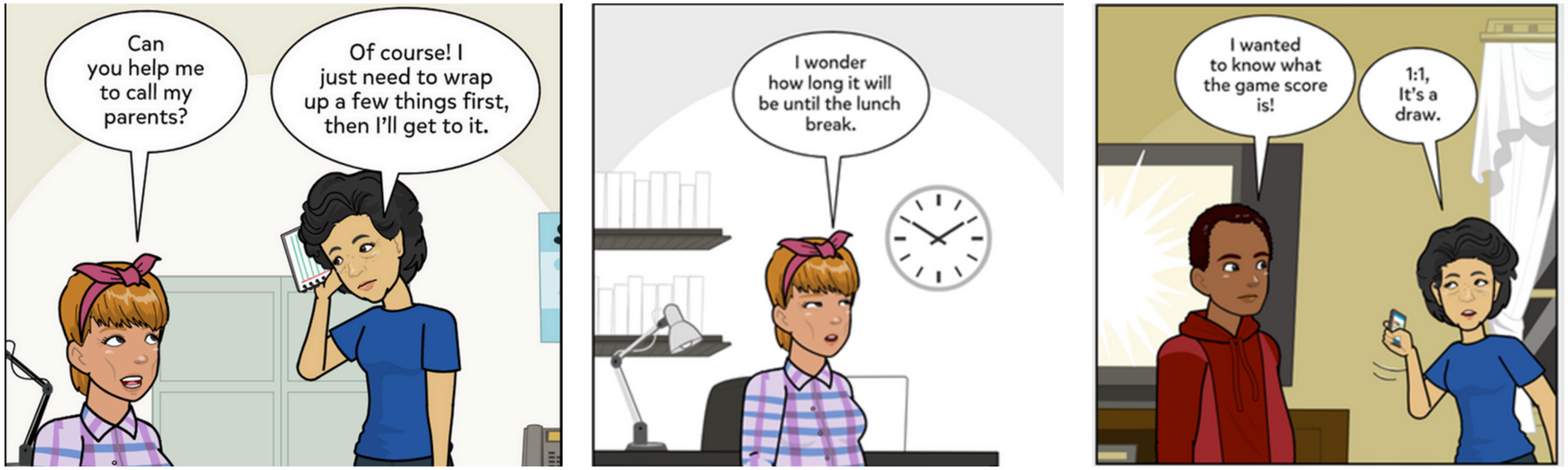


Figure 1. Daily scenarios highlighting digital challenges for people with intellectual disabilities.

Standard Approach Limits

Rigid linear training:
No room for individual pacing.

Lack of personalization:
One-size-fits-all content.

No long-term support:
Skills fade without sustained practice.

Negative Outcomes:

1. Low retention of technical skills
2. Limited real-world application.

The DIGI Lab Siegen Model

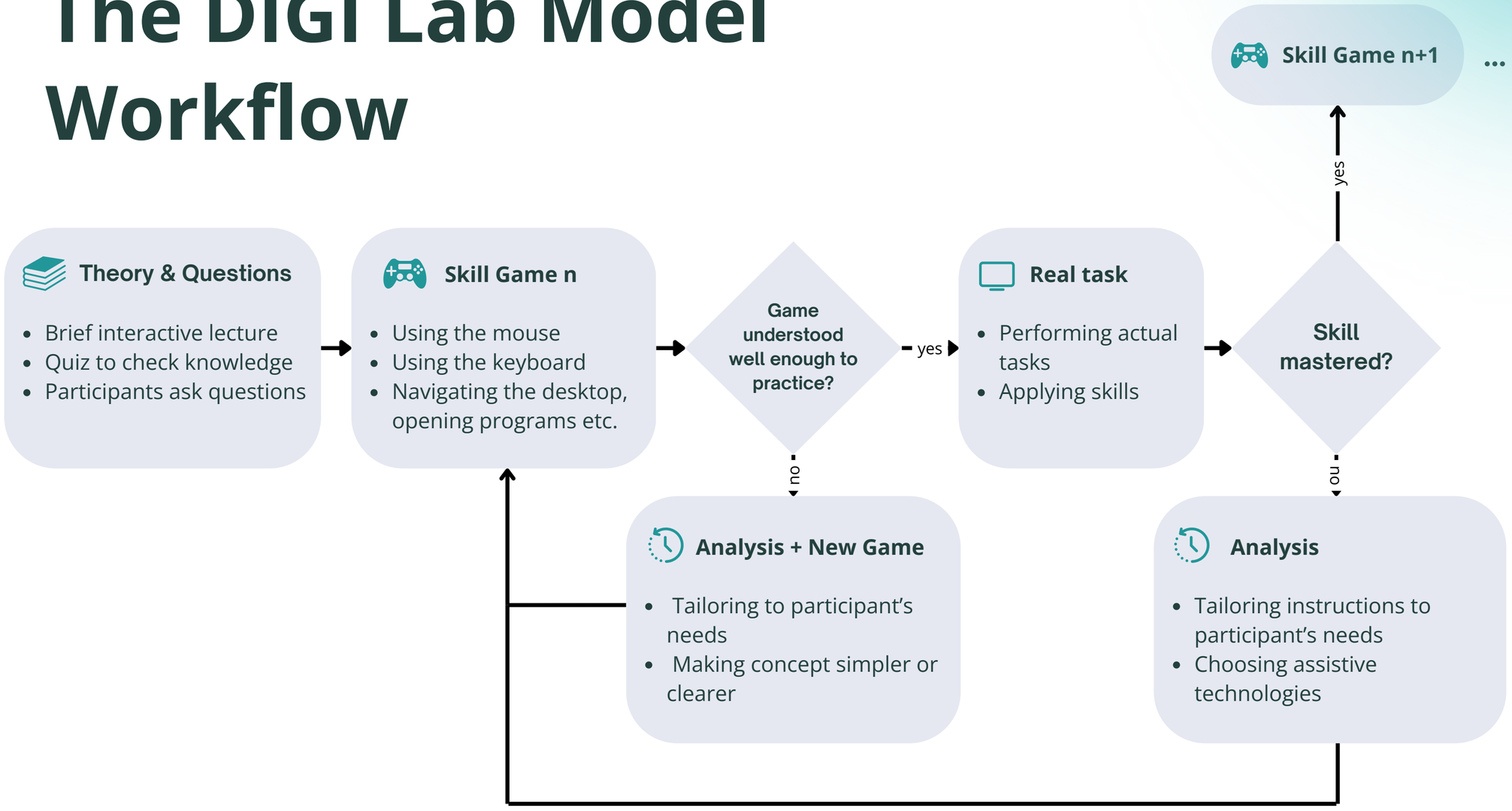
Small groups

Optimal session time

Semi-structured learning

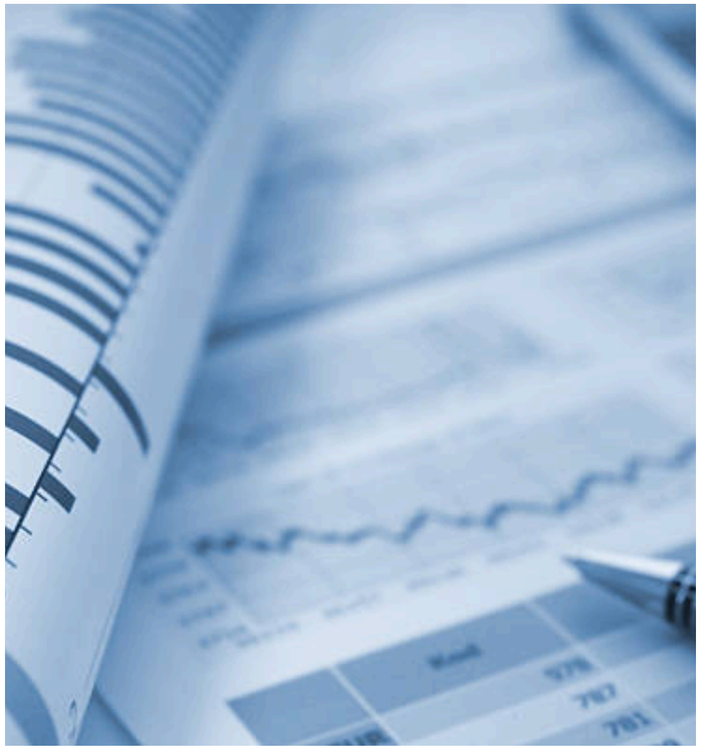
The DIGI Lab Siegen Model

The DIGI Lab Model Workflow



The DIGI Lab Siegen Model

Unique features



Dual-Track Focus:

- **Technical Skills**
- **Social/Cognitive Inclusion**: Building confidence for real-world digital engagement.

Assistive Technology Testing and Selection:

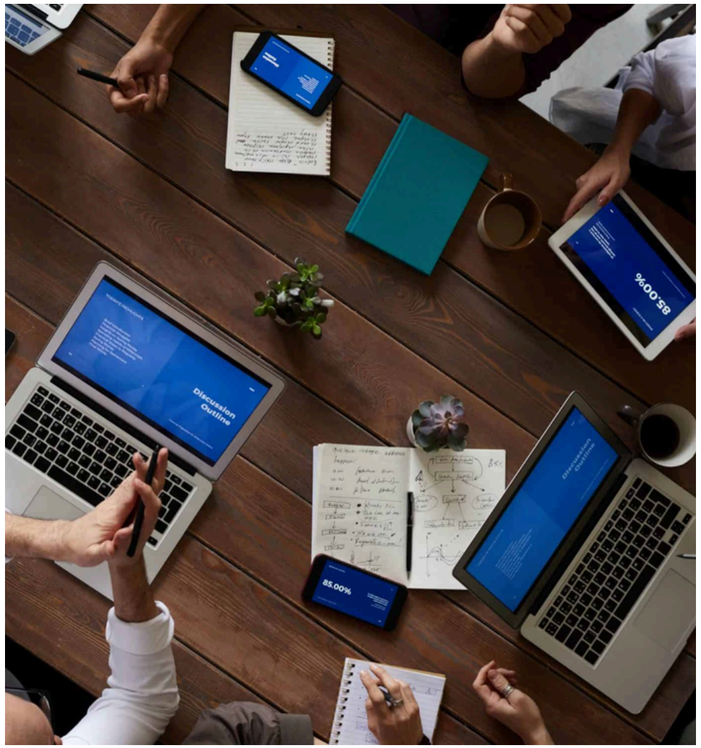
- Hands-on exploration of tools like text-to-speech, adaptive mice, and simplified interfaces.

Scalability:

- Modular design for replication in diverse contexts.

The DIGI Lab Siegen Model

Benefits of Semi-Structured Learning



Personalized Adaptation:

- Games and tasks adjusted based on participant feedback.

Social Integration:

- Group discussions and peer mentoring.
- Improved communication with caregivers/family.

Empirical Outcomes:

- Higher skill retention vs. traditional methods.
- Faster task execution after 3 weeks.

Future Directions

- **How can semi-structured digital literacy training be customized for different cognitive abilities and learning paces?**
- **How can out-of-classroom interactions with technology be supported to encourage the practical application of acquired digital skills?**
- **How can this approach be replicated in different cultural and socio-economic contexts?**

Conclusion

- **Digital literacy for individuals with cognitive disabilities requires more than traditional, technical instruction.**
- **The DIGI Lab Siegen model emphasizes familiarity, confidence, and inclusion through semi-structured, group-based learning.**
- **Participants build digital awareness and social connectedness, rather than aiming for rigid mastery.**
- **The initiative reframes digital inclusion as an ongoing, socially embedded process.**

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Thank You!