Establishing a Strength-based Technology-enhanced Learning Environment with and for Children with Autism

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**Why?**

**Future technologies**

- **CHILD AS AN IMITATOR**
  - Communication Interaction
  - Robotics

- **CHILD AS AN ACTOR AND CREATOR**
  - Communication, interaction, shared attention, creativity
  - Dynamic technology-enhanced learning environment

**Everyday technologies of today**

- **CHILD AS A USER**
  - Shared attention Interaction
  - Virtual learning environments

- **CHILD AS A CREATOR**
  - Creativity Interaction
  - Construction kits

**Difficulty-based approach** vs. **Strength-based approach**

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Implementation

• The CASCATE research project, 2011-2014, (www.uef.fi/cascate)
  - Children with Autism Spectrum disorders as Creative Actors in a strength-based Technology-enhanced learning Environment Research with and for children

• Action research with the group of 4 children with autism
  - 2 boys (7-11 years), 2 girls (7-12 years) + their teachers and assistants
  - Children’s challenges: Limited verbal language skills
  - Children’s strengths: Good auditory or visual senses, and variety if ICT skills

• Conducting research activities at school
  - Group sessions called ”action group” (symbol on the right)
  - Approx. 9 group sessions / school semester, 1 hour / group session
  - Group sessions are hold weekly
  - 4 technology-based workstations
Technology-enhanced learning environment

- Four principles:

1. Children’s creativity and active role
   - Current solutions emphasize children as (passive) users of technology

2. Children’s strengths
   - Current solutions focus on core characteristics of autism i.e. children’s disabilities

3. Technology’s modifiability
   - Current solutions often provide one solution

4. Technology’s transformability
   - New, advanced solutions are often expensive and too complex in the school context
Technology solutions

Symbol matching

LEGO building

Story telling

Kinect playing
Conclusions

- Inclusion in research by involving even the most challenging children as actors and developers in the R&D activities
- Paying attention to children’s individual strengths not disabilities (that are salient but able to overcome)
- Developing the technology-enhanced learning environment as a whole by paying attention to technological and pedagogical components
- Need for modifiable technology solutions that support children as individuals