



UNIVERSITY OF
EASTERN FINLAND

Supportive practices - Inclusive, physical and technological learning environment

DECIDE RIGHT

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Inclusive learning environment

(Lakkala 2008)

- Inclusive school culture
 - Attitudes: Pupils' teaching is based on natural diversity
 - Appropriate teaching conditions: staff, groups of pupils, teaching facilities, working hours, I, materials and resource
- Socio-constructivist conception of learning
 - Multi-professional, solution-oriented working model
 - Process assessment and reflective work approach
 - Theoretical knowledge of the development of children and adolescents
- Inclusive instruction
 - Flexible curriculum
 - Different tasks and outputs
 - A wide range of support methods
 - Cooperative teaching
 - Inclusion in the learning community

Inclusive learning environment

(Adapted from Manninen et al., 2007)

- **Physical environment:** spaces, furniture and equipment to be found in and used to work with
- **Social environment:** social networks, structures and systems influenced by all people in a learning situation and the interaction between them.
- **Pedagogical environment:** pedagogical methods and practices used in learning and teaching
- **Technological environment:** technical equipment and tools for studying

Physical learning environment



Elements of the physical learning environment

(Lei 2010)

- **Size of the space** (big / small)
- **Shape** (square, oval, half circle)
- **Seating order** (near / far from the teacher)
- **Furniture** (adaptable / fixed)
- **Technology** (dispositions and accessibility of modern technology)
- **Lighting** (high / low intensity, natural / artificial light, customizability)
- **Thermal conditions** (hot / cold, frequency and duration of extreme temperatures)
- **Colour scheme** (light / dark, intensity, multicolour patterns)
- **Noise level** (frequency, duration, intensity)

Physical learning environment influences learning

(Choi, van Merriënboer & Paas 2014)

- Hearing and visual stimuli affect learning / remembering.
 - E.g., keeping your eyes closed makes it easier to remember.
 - Effect of disturbing sounds
- The memorized issue is also associated with other stimuli (e.g., smell, colour, place)
 - Easier to recall something in the same circumstances in which it was memorized
 - Disadvantages and benefits
- The color of light is linked with cognitive performance
 - Do psychological factors have an effect?



- Aesthetically beautiful multimodal learning environments increased positive emotions towards learning
- The physical environment is more important for externally motivated learners
- Research has focused on the short-term effects of the learning environment
- Research on the longer-term effect is needed



Physical learning environment and students with special educational needs

(Ahmad 2015; Blecker & Boakes 2010; Broadbent et. al. 2018; Davies 2012; Woronko & Killoran 2011)

- Physical learning environment and pupils' needs for support
 - Visually clear space
 - Permanent places for certain activities
 - Objects and tools must have their own places
- Spatial adaptability / variety of spaces (quiet spaces / sensory spaces / group spaces)
- Material properties: floor and table surfaces, acoustics
- Placement of objects and furniture



- Easily movable furniture and walls
- Location and availability of materials and aids (e.g., visual support in a form of images, pictograms, etc.)
- Communication support
- Use of colors to support instruction and teaching
- Use of digital technology



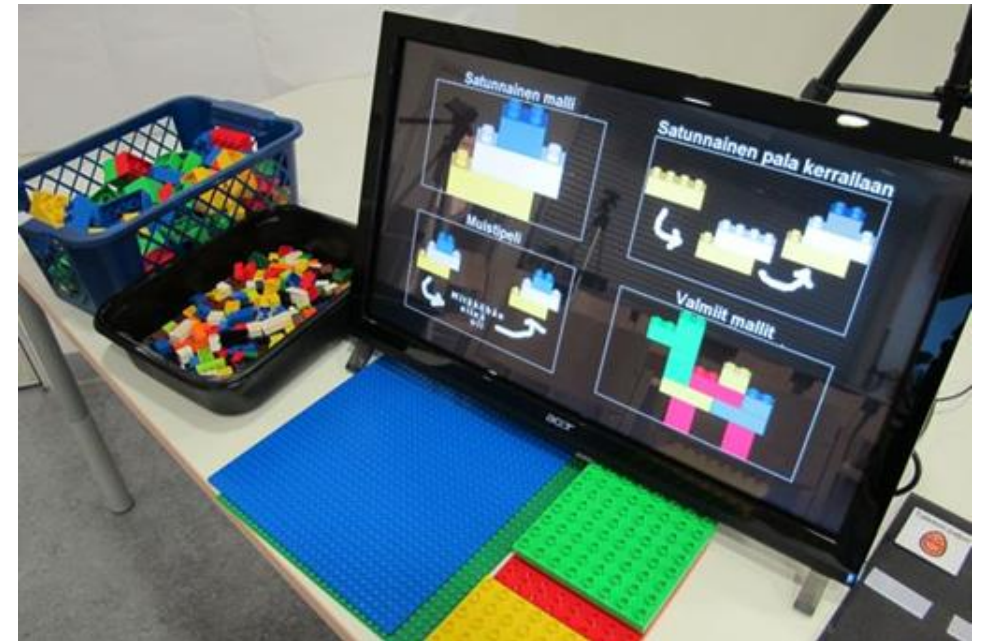
- Availability of communication tools (possibility to communicate or provide feedback).
- Placement of the learner and the assistant in space (parallel / opposite).
- Safety (no sharp corners / dangerous equipment on display).
- Cleanliness of the room.
- Facilities outside the school and kindergarten (possibility to practice everyday skills).
- Enabling virtual learning
- Opportunity to move (see [Finnish Schools on the Move](https://www.youtube.com/watch?v=Aq5tslcq3vw&list=PLQD0GyzWN465DcrYj3LMTpJbWKwJrfuxn&index=3))
<https://www.youtube.com/watch?v=Aq5tslcq3vw&list=PLQD0GyzWN465DcrYj3LMTpJbWKwJrfuxn&index=3>

Technological learning environment



Features of technology that support learning

- Spacelessness: Learning is not limited to the classroom
- Neutrality: Technology does not differentiate by characteristics (age, gender), gives same feedback to everyone
- Predictability: Activities predictable
- Tirelessness: It is possible to repeat exercises indefinitely
- Versatility: Content variation and multichannel information user interface and software variation
- Interesting and motivating: Technology is interesting to pupils
- Timeliness: Essential for survival in the information society



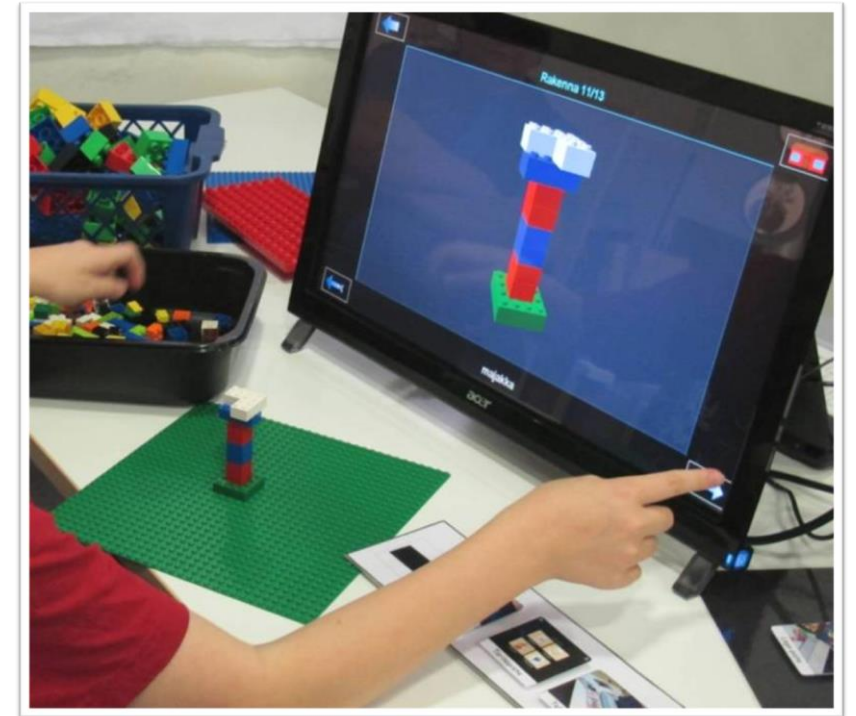
Comprehensive schools in the digital age

(Tanhua-Piironen et al. , 2019)

- The data was collected in 2017 and 2018
- The survey involved 4,513 teachers from comprehensive schools and 331 principals or school leaders from all over Finland
- 76% were women, which corresponds well to the gender distribution of Finnish primary education teachers
- Strategy work related to the digitalization of schools has progressed positively
- There was positive development in teachers' digital skills
- Older teachers perceived shortcomings in their skills
- Teachers' skills to take advantage of digital technology in teaching had developed positively
- Subject teachers had better digital skills than class teachers. Special education teachers had the weakest skills

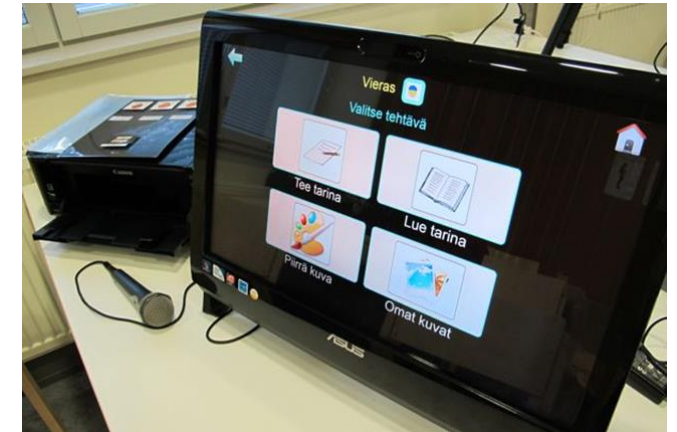
Technology and learning

- Technology has entered our society to stay in and get along with it It is important for democracy not to be left to experts who understand technology
- Technology must also be learned to understand in order to live in harmony with it
- People should be able to enjoy the environment they build and understanding increases comfort
- It is important to develop students' digital literacy



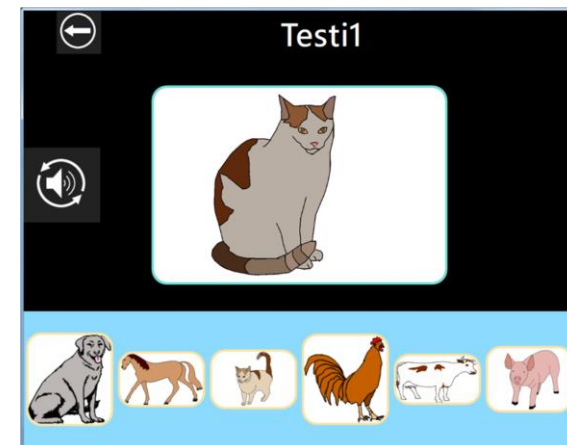
Technology and students with special educational needs

- Teaching and rehabilitation can be integrated
- Increases flexible and independent studying
- Enables multichannel learning
- Enables differentiation
- Equals pupils
- Supports social relationships
- Motivates
- Can be used to provide for varying degrees of support

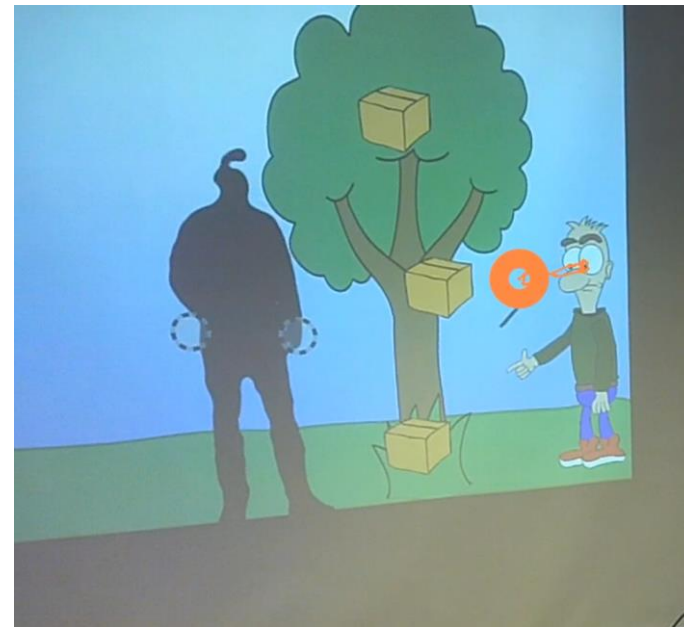
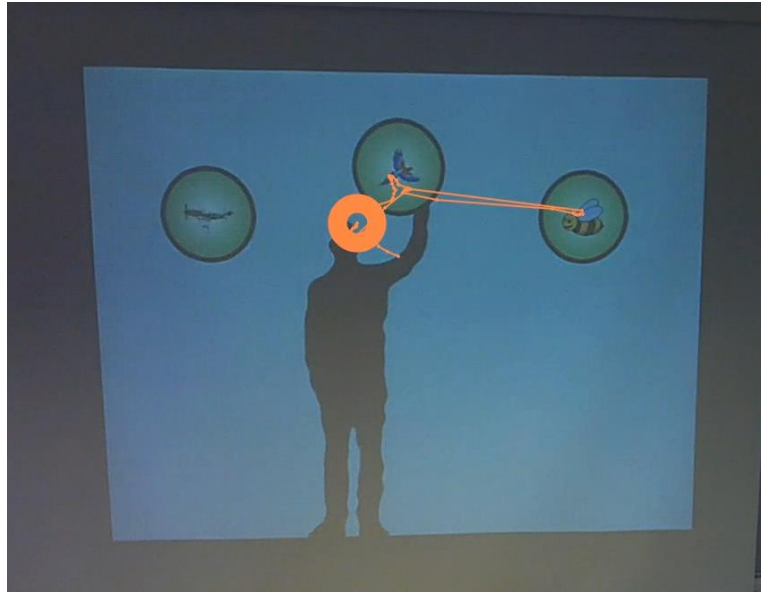


Technology and students with special educational needs

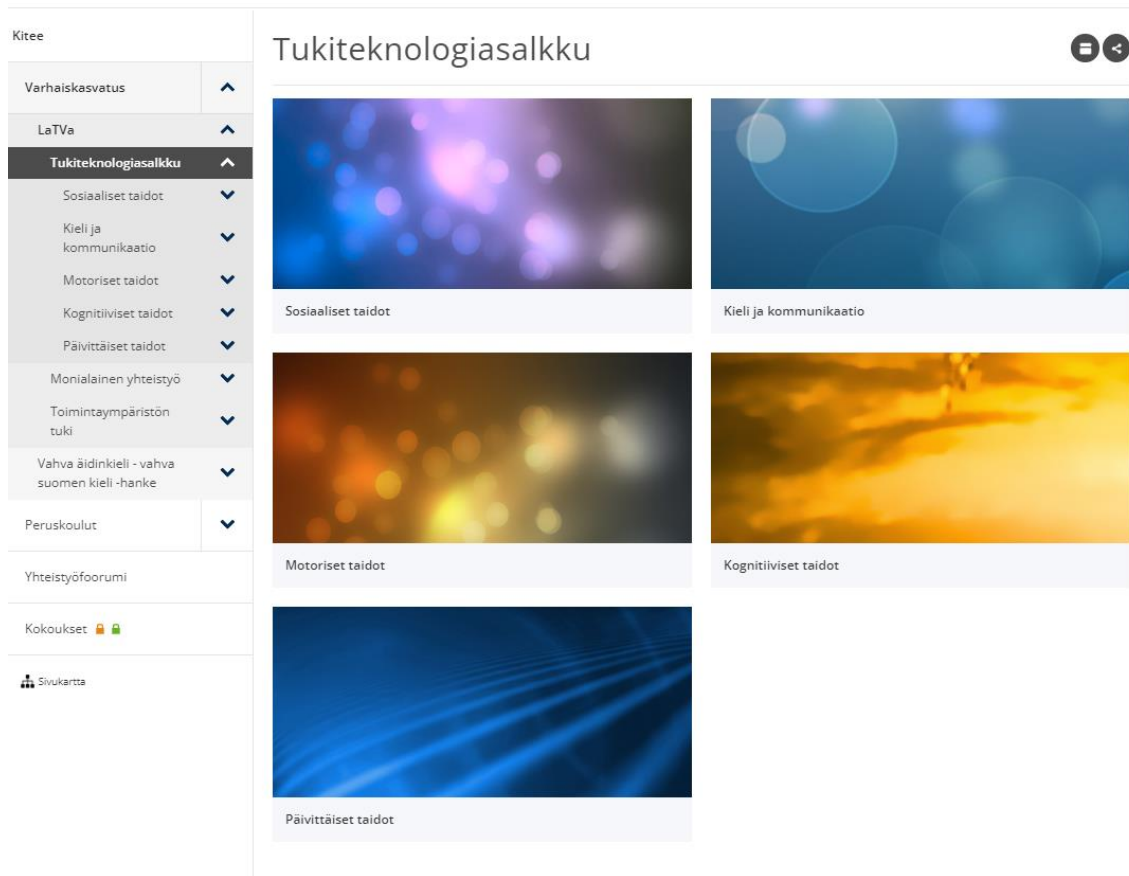
- **Practicing skills**
 - Linguistic skills
 - Cognitive skills
 - Social and emotional skills
 - Computer training
 - Skills to participate in society / community (social media, information retrieval)
- **Other activities**
 - Evaluation, diagnosis
 - Recreational use
 - Everyday activities (e.g. communication)



Eye-tracking research and a tool for evaluation



Digital support suitcase



Social skills

Language and communication

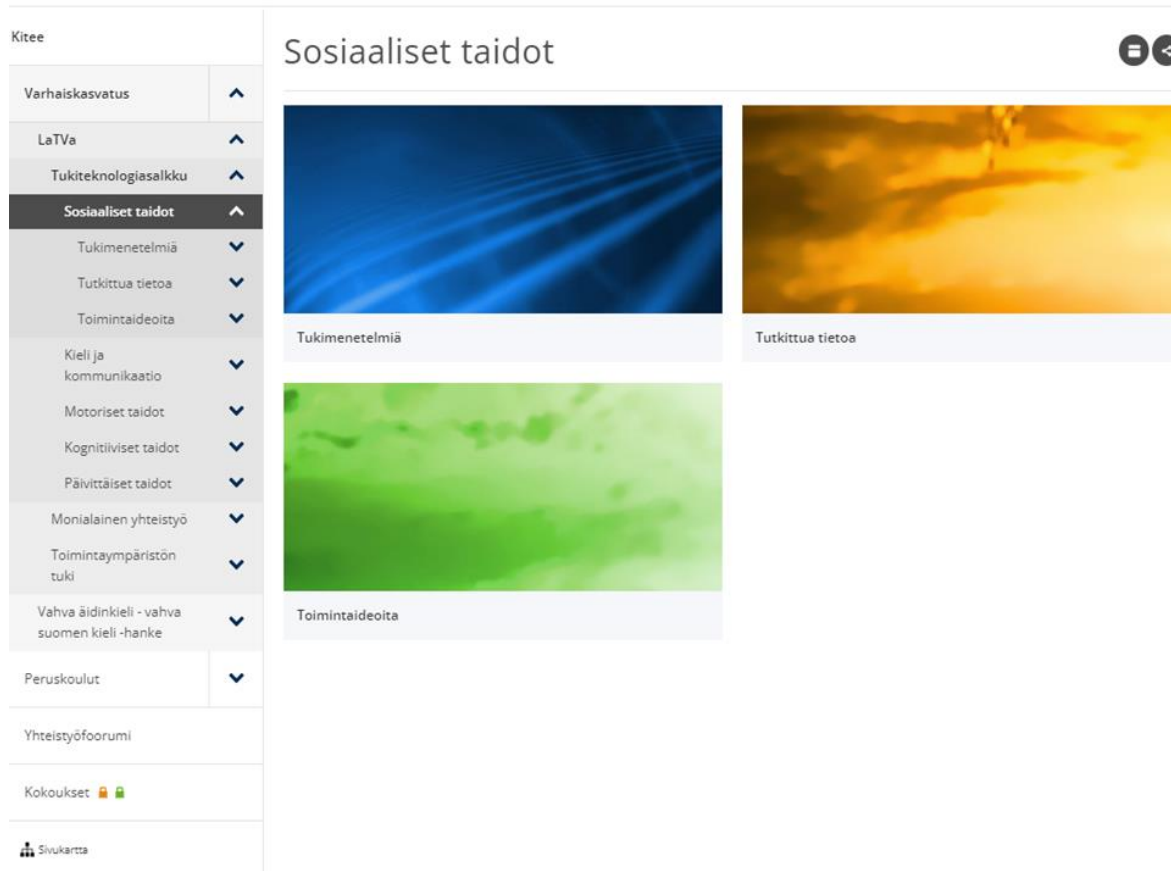
Motor skills

Cognitive skills

Daily skills

<https://peda.net/kitee/varhaiskasvatus/latva/tl/stl/tl>

Social skills

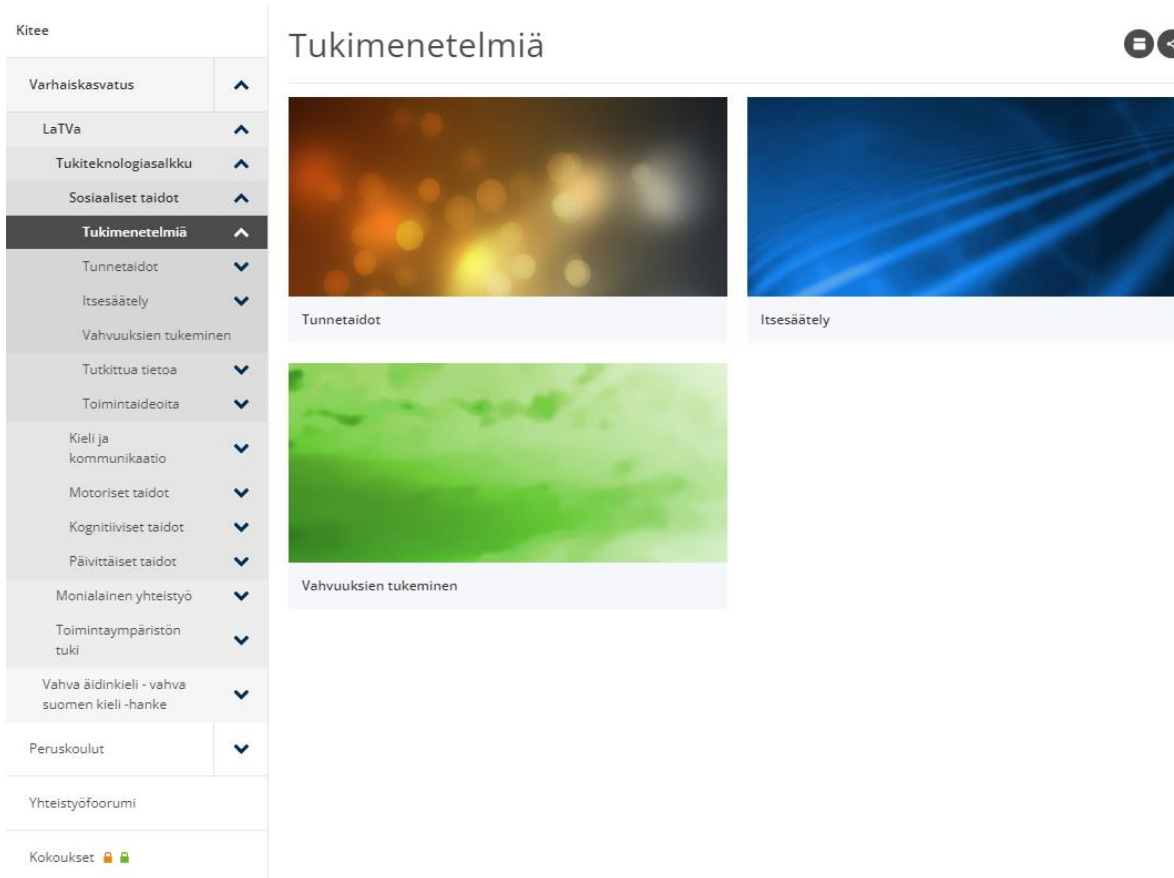


Support methods

Research-based information

Ideas for practice

Support methods

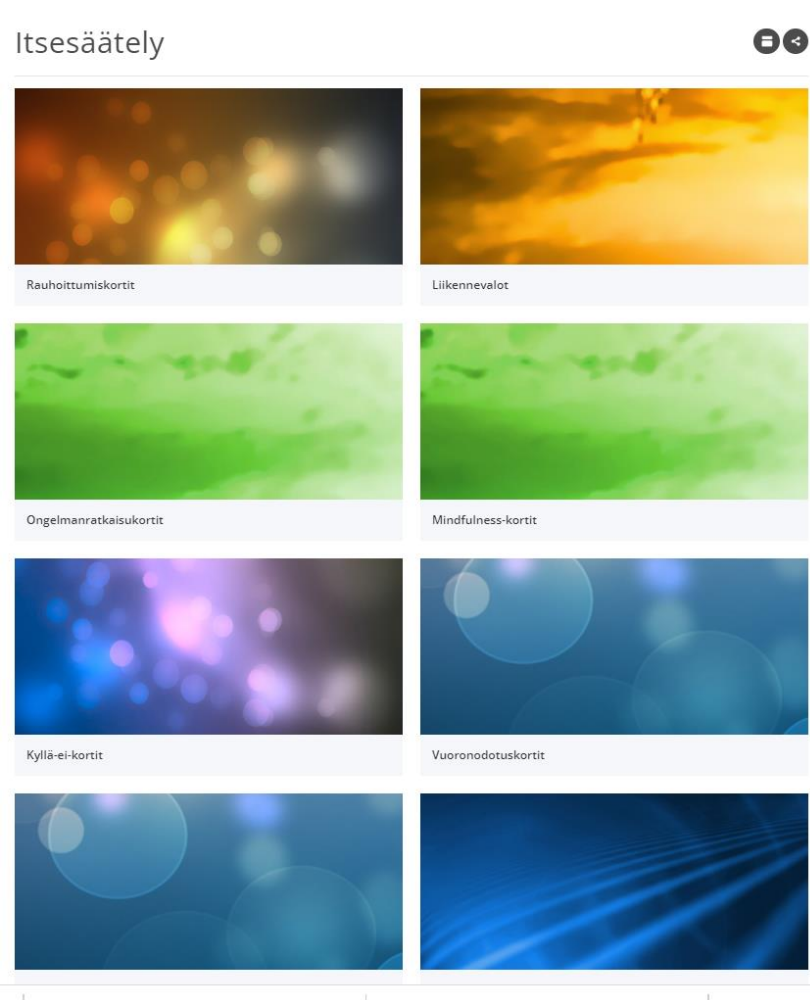


Self-regulation skills

Emotional skills

Support for strengths

Self-regulation skills



Relaxation cards

Traffic lights

Problem solving

Mindfulness cards

Yes-no cards

Turn-taking, waiting cards

Timers

Hints to practice self-regulation at home

Relaxation cards

Rauhoittumiskortit



Tulostettavat rauhoittumiskortit

Kun otatte kortit käyttöön, keskustelkaa lasten kanssa vihan tunteesta ja hermostumisesta. Kertokaa, että jokainen hermostuu joskus, mutta jokainen voi oppia tapoja rauhoittaa itseään. Katsokaa aikuisten kanssa, mitkä keinot ovat mahdollisia teidän ryhmässänne ja valitkaa kortit : perusteella. Harjoitella keinoja ensin niin, että lapset ovat rauhallisia. Miettikää lasten kanssa, mikä heidän mielestään olisi toimiva tapa ja kokeilkaa niitä. Tapa voi olla myös lapsen keksimä ja sellainen, joka ei löydy korteista.

Tehkää rauhoittumiskeinoja yhdessä aamupiirillä tai kahdestaan lapsen kanssa. Kun menetelmiä harjoitellaan ensin rauhallisina, on menetel lapselle tuttu silloin, kun hermostuminen tulee. Varautukaa siihen, että ensimmäinen tai toinenkaan keino ei aina auta, vaan asia vaatii kokeil ja toistoa. Lapsikin on vasta oppimassa itsensä rauhoittamista.

Tulostettavat rauhoittumiskeinokortit:

[Lizs early learning spot - Rauhoittumiskeinokortit](#) (valitse suomenkielinen versio)

Kokemuksia Kiteeltä



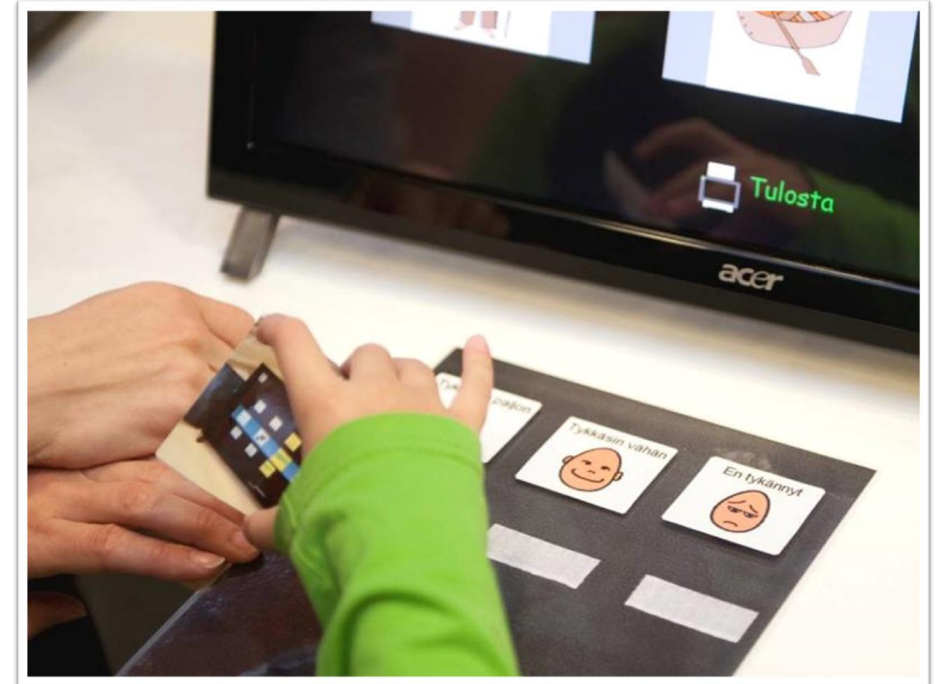
Instructions how to use the cards

Link to cards that can be printed for use

Examples from kindergartens in City of Kitee

Concluding remarks

- Physical and technological learning environment should be actively considered when planning support for students
- Physical environment can be built to support learning of all students
- Special attention to flexible solutions
- Blended learning supports students with special educational needs
- Digital skills are important to all students
- Students' inclusion and preferences
- Concrete ideas and materials for teachers to provide support



• References

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