



Perspectives on the teaching of blind and partially sighted pupils

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About us



Anu Pakkanen

- Counselling teacher
- Master of Education
- Special needs teacher
- Specialist in visually impaired skills



Kirsi Salonen

- Counselling teacher
- Master of Education
- Special needs teacher
- Specialist in visually impaired skills

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What should be taken into account when teaching the students with VI?

- The staff working with the student must understand how the student's visual impairment affects everyday life
- Accessibility of the environment
- Accessibility of teaching material
- Suitable aids and teaching how to use them
- Orientation and mobility training
- Training Daily living skills
- Supporting social integration

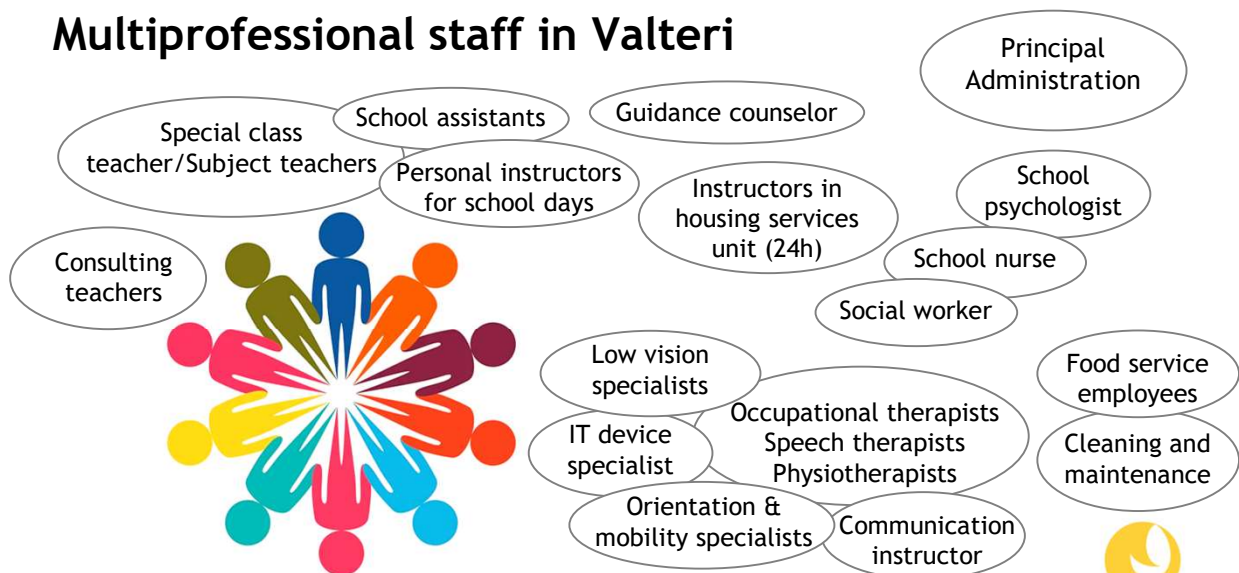


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Multiprofessional staff in Valteri



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Functional vision: assessment for educational purposes

- We ask observation about seeing from the student himself, his parents and school
- We ask information from hospital's eye examination
- We do our own functional vision assessment
- The aim is to find out in particular, how to support students with low vision in educational settings?
- Assessment:
 - visual acuity
 - contrast sensitivity
 - colour vision
 - visual field
 - visual adaptation
 - stereo vision



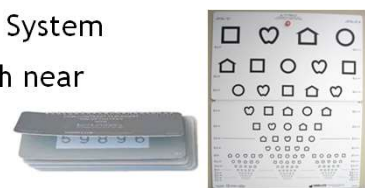
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Visual acuity, contrast sensitivity and colour vision

- We are using Lea Hyvärinen's (MD, PhD) LEA Vision Test System
- Best corrected visual acuity is measured binocularly both near and far by Lea Symbols
- Contrast sensitivity is measured by Lea Symbols Low Contrast test 10 M or Hiding Heidi Low Contrast Face test
- Color vision is usually measured by The Panel 16 Color Vision test
- The tests are done either in Valteri in a separate testing room or in students own learning environment
- Showing the test results from the eye chart makes it easier to explain the vision situation for those working with the student



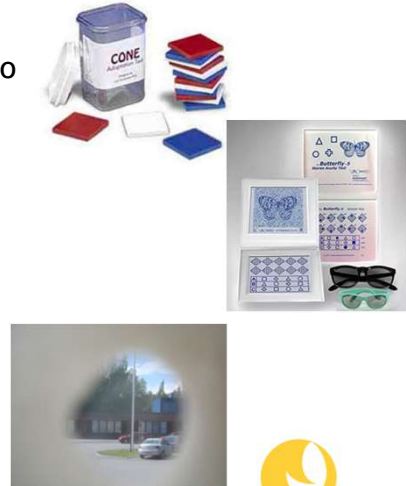
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Visual field, visual adaptation, binocular vision

- We test Visual adaptation with Lea Cone adaptation test
- We are assessing stereo vision by different kinds of stereo vision tests
- We are not able to do more detailed visual field examinations, but it is important to get the information from the hospital
- Schools often make changes to the lighting or add blinds to the windows to make lighting conditions better for visually impaired student. Sharp edges, stairs, etc. are often highlighted if the contrast is not a good as it is.
 - Rehabilitation worker and counselling teachers make recommendations for these changes



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Using Tobii eye tracker as an evaluation tool



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What and why?

- We wanted an extra tool for assessing functional vision
- We thought Tobii would help us to find ways to support child's seeing and reading
- Often we are asked help for evaluating visually impaired child's reading
 - Can we point out a difference between dyslexia and problems with vision?
- We are not doing research, we are only testing and hoping to find help for practical work



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Who should be tested?

- When we started in 2020 we used Tobii with all the second graders who came to Valteri's support period
 - Could we somehow compare the results?
 - Each child's functional vision was different
 - We had to modify the test conditions
- Very soon we got an idea of who Tobii should be used for
 - students who had unclear reading challenges
 - students whose functional vision assessment had something unusual or whose eye movements are unordinary
 - students who has visual field defects or CVI



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What have been done?

- Before using Tobii we always assess child's functional vision with normal tests
- We also have information about eye examinations done in a hospital
- We have tested the Tobii eye tracker device to assess eye movements and reading
- We have made and tested various text and image materials and used online games
- We have also used the immersive reader in Microsoft Office 365
- Before each assess we have built an individual "test package" for each child



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Before doing tasks

- It is important to be aware of child's functional vision before using Tobii
 - You need a certain distance from a screen. If the near vision acuity is really low it might be hard to use Tobii (under 0.1)
 - If another eye is blind or otherwise disabled, you can calibrate Tobii for one eye only
- Eyeclasses don't matter
- Tobii has to be calibrated every time to each child
- The user profile is being saved and can be used again



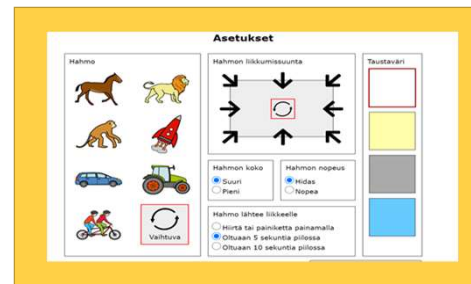
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Eye movements

- We have used different powerpoint slides and animations and ready-made online games where objects move in different directions on the screen
- www.papunet.fi
 - Good tasks for evaluating eye movements
 - The animal or vehicle chosen by the child moves in a different directions on the screen
- Challenges in eye movements or moving the gaze from one object to another are very clearly visible on the screen



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Pictures

- The child looks at the pictures on the screen and the adult asks questions about the pictures
- Pictures with poor contrasts, black and white pictures, various drawn pictures, photographs, pictures with a lot of things in one picture, etc.
- Tasks where you are asked to find things in a picture (www.papunet.fi)
- Where does the child's gaze go in the pictures? What kind of images are effective in his teaching?



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This block contains a visual search task. It features a collage of images: a restaurant interior, a monkey in a tree, a large black and white line drawing of a forest scene with various animals, a 2x3 grid of animal icons (white dog, brown dog, white dog, white cat, white dog, brown dog), and a vertical strip of colorful icons on the right.

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papunet

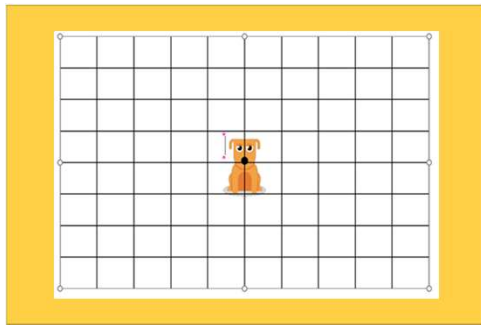
Who is standing on the stone? Kuka seisoo kivellä?

Navigation icons: right arrow, speaker, refresh.

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Visual field

- Pictures where the child is asked to find things
- Powerpoint animations where pictures, letters or words appear on the screen



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Reading

- Texts suitable for different ages, line tracing tasks, word and syllable tasks
- If necessary, also standard reading tests to support observations
- In reading assessment, recording is a good way to analyze reading and eye movements
- We use Microsoft's immersive reading tool to find out what makes reading easier
 - text size, line spacing, column width, letter spacing, colors, etc.

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What have we learned?

- Before using the Tobii, it is necessary to know the child's functional vision and other background information → You shouldn't jump into the conclusions
- With the help of Tobii, we have obtained additional information about the child's functional reading
- It is important to choose tasks that suit each student's situation
- When assessing reading, it is important to have knowledge of reading difficulties in general
- By observing the child's reading and eye movements, we have better understanding of which things are related to seeing and which to reading
- If the child has dyslexia, the problems remain very similar, even if the text is adjusted to suit the child's vision
- We have been able to find ways that help the child's reading

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Some thoughts about supporting visually impaired children



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What does it take for a visually impaired student to learn well?

- Understanding of the impact of visual impairment and functional vision
- Suitable aids and supporting their use
- Supporting self-esteem of the student
- The student is accepting one's visual impairment
- Making sure that the learning environment is accessible (rehabilitation worker)
- Making sure that the learning materials are accessible to the student (Consulting teacher)
- Writing support needs, goals and means clearly in pedagogical documents
- Clear instructions from Valteri, not all information at once
- Practising computer use early on
- Good teamwork!



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Good self-esteem and visual impairment

Do I know what my vision is like?

Do I know my own strengths?

How do my parents feel about my VI and aids?

Do I dare to think about my own challenges?

Do I practice O&M skills?

Do I have friends?

How independent I am in daily living skills?

How do I feel about aids?

Do I have a hobby?

Can I get peer support?

Can I find solutions in problem situations?

Am I involved in leisure activities for the VI (club, camps, virtual meetings)?

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Outsourcing helps in dealing with challenges

“Piksi” is an imaginary VI student whose problems we solve together with the children.

Football is played in PE-class. “Piksi” is afraid of football because he often can’t see the ball properly. Sometimes it’s also unclear, who belongs to his team? “Piksi” decides to go to the dressing room to mope. Does it make sense?

“Piksi” would like to be like other students in the class, but he has a video magnifier. “Piksi” hates his device and tries to avoid using it. Without video magnifier “Piksi” gets to do much less work than his classmates and his eyes are really tired. How would you advise “Piksi”?

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I am the superhero of my own life. Some superheroes don't have superpowers, they have technology and aids!

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Teaching Blind children

- More support from Valteri (more counselling visits and support periods compared to VI students)
- In Valteri a two day training about basic information for neighborhood school teacher and assistant. Also training during the counselling visits.
- Practicing the use of hands and the sense of touch starts already in kindergarten
- Orientation & Mobility and Independent Living Skills training is systematic from the early years on.
- In the first years, the hospital's rehabilitation worker is responsible for counselling, and Valteri's counselling teacher comes along when the child is 4 years old.
- The perception of tactile image is introduced with the help of tactile books. Celia is currently renewing the teaching material for pre-school in cooperation with Valteri. In this new material, the child is guided from concrete objects to understanding pictures.

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www.otf2017.fi

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Current issues in Teaching Blind children

- Student whose development proceeds according to age usually gets computers and braille devices in the first grade
- Since the use of computer is started early, the listening as a learning method increases.
→ A lot of guidance is needed on how reading skills are developed at the same time.
- We are looking for alternatives to the Perkins Brailier. In the next school year, we will collect experiences from two devices: Orbit Reader and Mountbatten Brailier



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Orientation and mobility training

- Orientation and mobility training takes place on Valteri support periods as well as during the consulting visits
- In most hospitals there are Orientation & Mobility Instructors or Rehabilitation workers whom are able to give O&M training for students. If there isn't, the training can be purchased from Valteri's O&M specialists.
- Need for the O&M training is assessed during Valteris support week or during counselling visit and we recommend training as needed
- O&M training is usually carried out in periods and the staff of the local school is briefed on the goals and techniques so that they know how to guide the students in everyday life



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Read more by visiting our
website: www.valteri.fi/en/

You can also find us (in Finnish) on
[Facebook](#) , [X](#) and [Instagram](#):



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@valteri_fi



@hetkiavalterissa



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Thank you!

Kirsi Salonen
kirsi.salonen@valteri.fi

Anu Pakkanen
anu.pakkanen@valteri.fi

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The VALTERI logo consists of a yellow circle containing a white stylized shape resembling a flame or a leaf, positioned above the word "VALTERI" in a bold, sans-serif font.