

Using Tobii Eye Tracker as an evaluation tool

About us



Anu Pakkanen
Consulting teacher
Master of Education



Kirsi Salonen
Consulting teacher
Master of Education

Valteri Centre for Learning and Consulting

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- Valteri is a national Centre for Learning and Consulting that operates under the Finnish National Agency for Education.
- Valteri School operates in connection with each unit of the Valteri Centre for Learning and Consulting.



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- Complements municipal and regional learning support services.
- Services can be focused on the needs of individual children or young people, or for the needs of an entire work community, municipality or region.
- We have around 600 visually impaired students all over Finland whom we support



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Valteri's services for visually impaired children

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- **Consulting visits** to childrens own learning environment at his school
 - consulting the adults working with the child about the child's visual situation, learning techniques and aids
 - support the learning and participation opportunities of a child or young person in their own learning environment
 - cooperation with hospital vision rehabilitation
- Additional training for teachers and school assistants
 - Visually impaired child at classroom
 - Blind child at classroom



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Valteri's services for visually impaired children

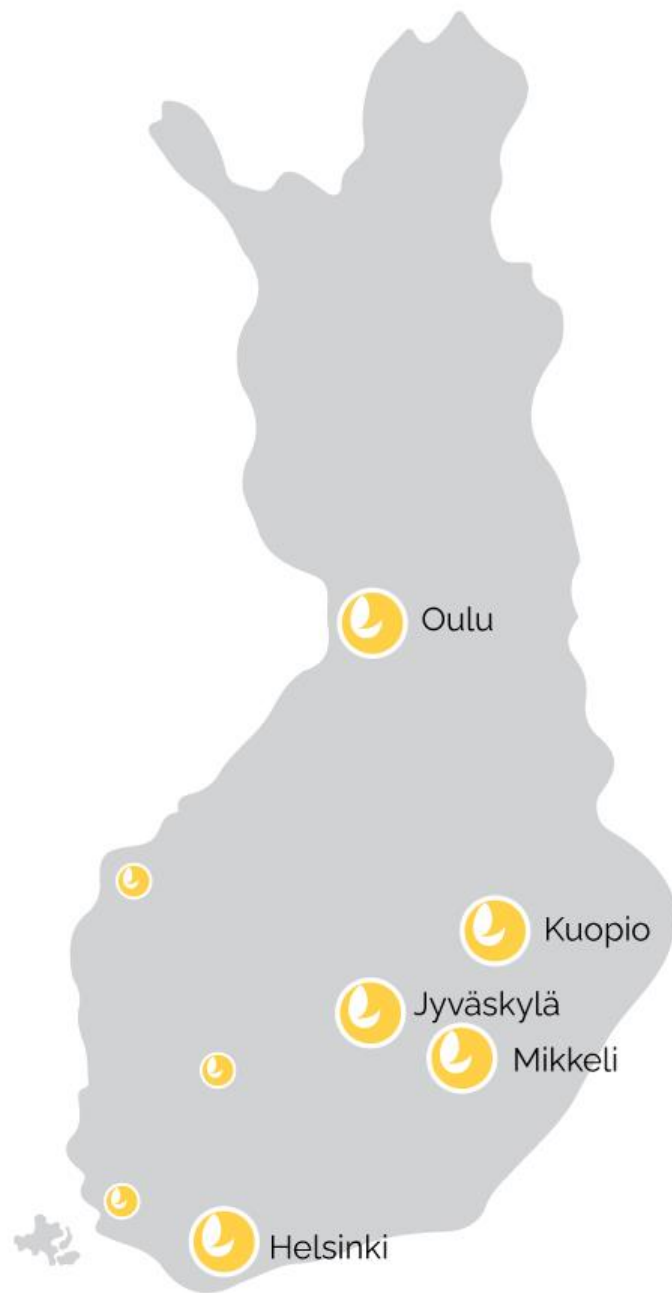
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Support periods in Valteri school

- about 6 children or young people of the same age in the same group
- one week/group
- includes
 - assessments of functional vision, orienteering, IT skills and suitable aids
 - practice of study techniques for low vision or blind
 - peer support



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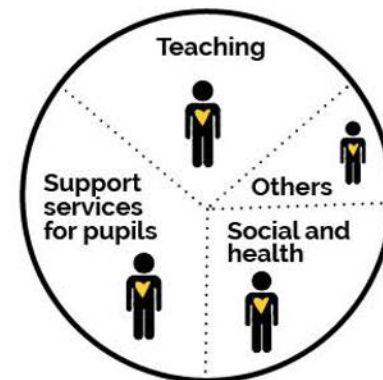
-  Mikael, Mikkeli
-  Mäntykangas, Kuopio
-  Onerva, Jyväskylä
-  Ruskis & Skilla, Helsinki
-  Tervaväylä, Oulu
-  Tampere (Counselling Services)
-  Turku (Counselling Services)
-  Vaasa (Counselling Services)



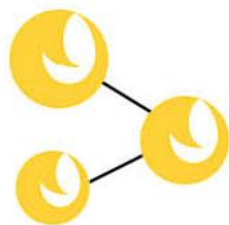
We operate nationally.



**Our services are used by 70%
of Finnish municipalities.**



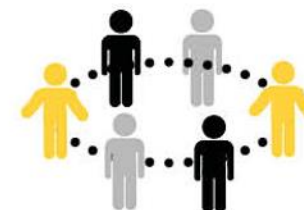
**Over 550 professionals
work at Valteri.**



**We provide services to early child-
hood education and care, basic
education and additional education.**



**Approximately 2500 pupils are
within the sphere of our
services, 13% of whom study
at Valteri schools.**



**We cooperate with approximately
40 different partners in education
and research.**

What and why?

- We wanted an extra tool for assessing functional vision
- We wanted Tobii to 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 a research, we are only testing and hoping to find help for practical work



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Using Tobii with pupils

- Last school year, we used Tobii with all the second graders who were in the 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
 - For pupils who has unclear reading challenges
 - For pupils whose functional vision assessment has something unusual
 - For pupils 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



Before doing tasks

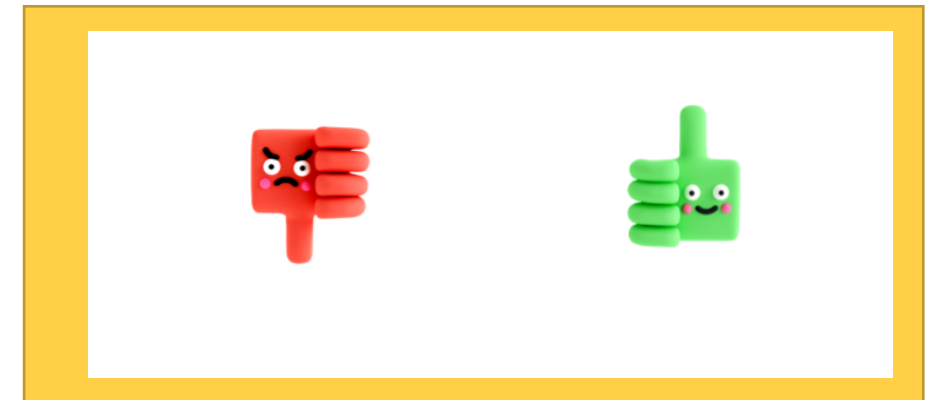
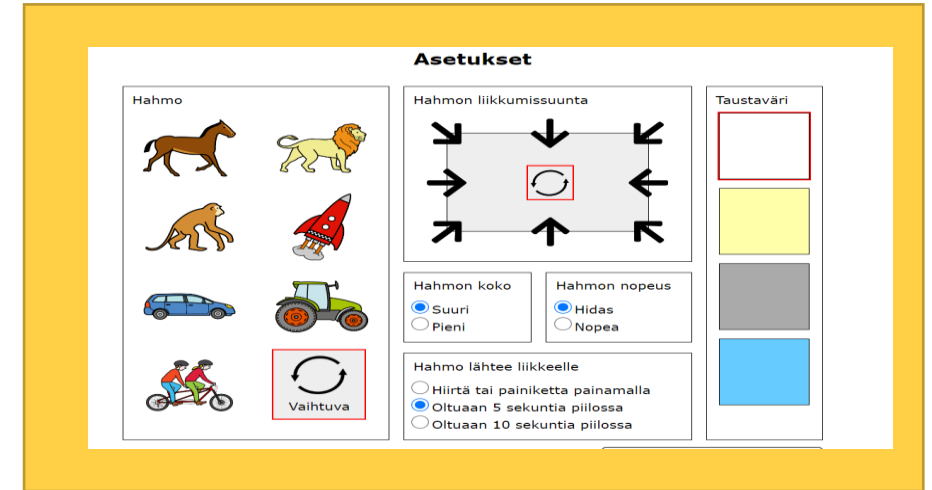
- It is important to be aware of child's functional vision before using Tobii
 - You need a certain distance from a screen. If the near vision acuity is really low it might be hard to use Tobii (under 0.1)
 - If another eye is blind or otherwise disabled, you can calibrate Tobii for one eye only
- Eyeclasses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



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Eye movements

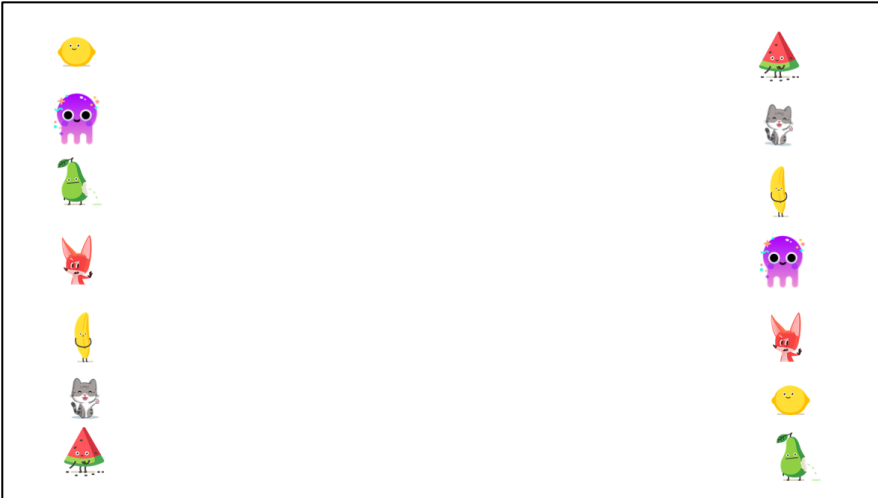
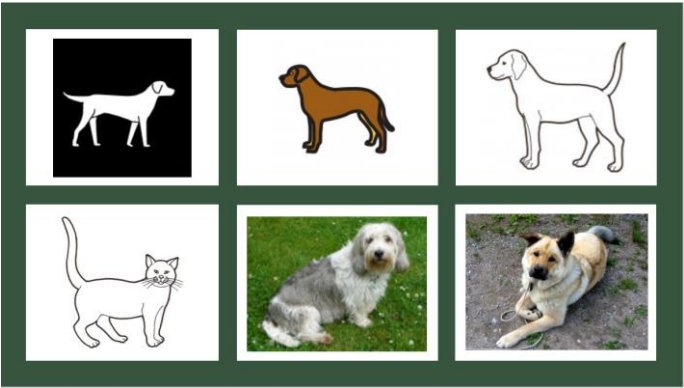
- We have used different powerpoint slides and animations and ready-made online games where objects move in different directions on the screen
- www.papunet.fi
 - Good tasks for evaluating eye movements
 - The animal or vehicle chosen by the child moves in a different directions on the screen
- Challenges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



Pictures

- We have collected various pictures to observe how a child looks at them
 - Pictures with poor contrasts, black and white pictures, various drawn pictures, photographs, pictures with a lot of things in one picture...
- The child looks at the pictures on the screen and the adult asks questions about them
- 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?





Visual field

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



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, adding letter spacing, colors, etc.



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What have we learned?

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- 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 vision
- It is important to choose tasks that suit each child's situation



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What have we learned?

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- 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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Read more about Valteri by visiting our
website: www.valteri.fi

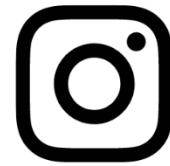
You can also find us (in Finnish) on
[Twitter](#), [Facebook](#) and [Instagram](#):



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Thank you!

Anu Pakkanen and Kirsi Salonen

anu.pakkanen@valteri.fi

kirsi.salonen@valteri.fi