



OPETUSHALLITUS
UTBILDNINGSTYRELSEN

Using Tobii Eye Tracker as an evaluation tool

About us



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VALTERI

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

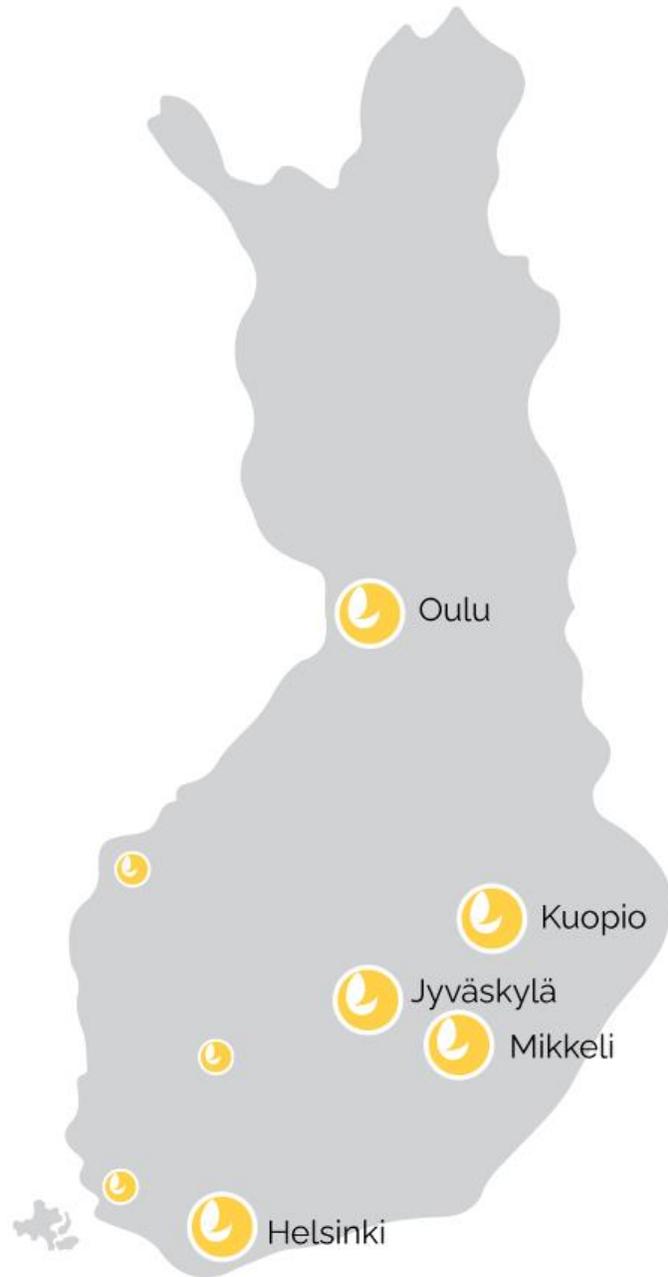
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Support periods in Valteri school

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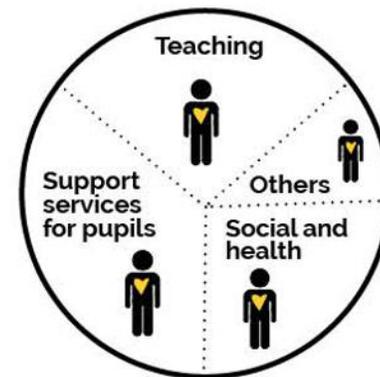
-  Mikael, Mikkelä
-  Mäntykangas, Kuopio
-  Onerva, Jyväskylä
-  Ruskis & Skilla, Helsinki
-  Tervaväylä, Oulu
-  Tampere (Counselling Services)
-  Turku (Counselling Services)
-  Vaasa (Counselling Services)



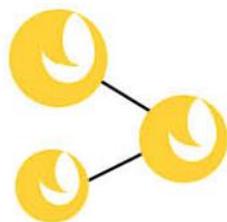
We operate nationally.



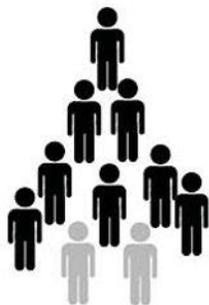
Our services are used by 70% of Finnish municipalities.



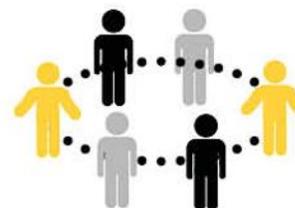
Over 550 professionals work at Valteri.



We provide services to early childhood 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



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



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



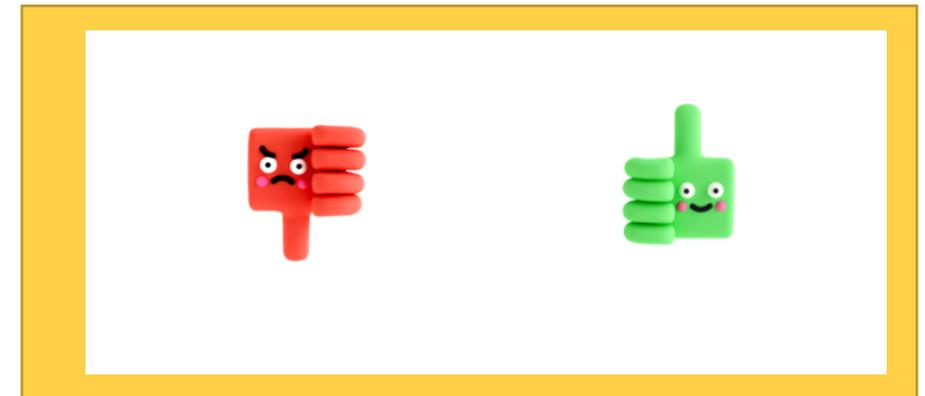
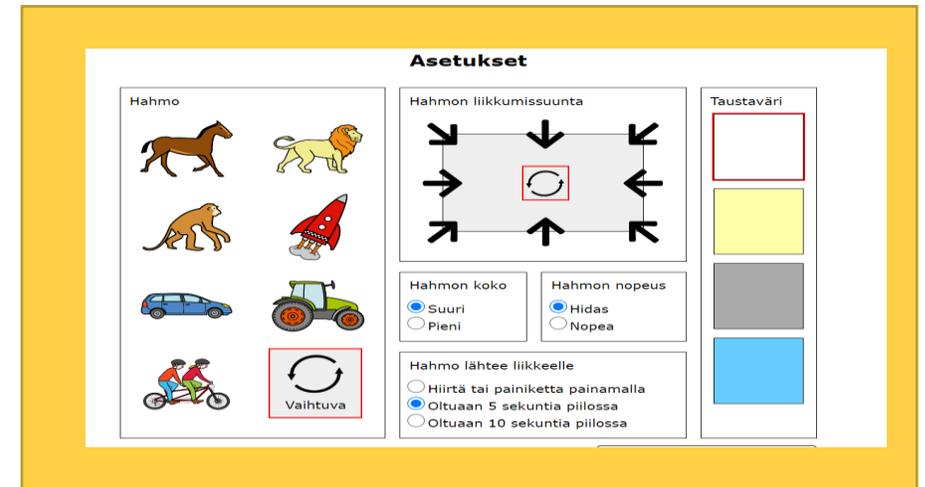
Before doing tasks

- 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



Eye movements

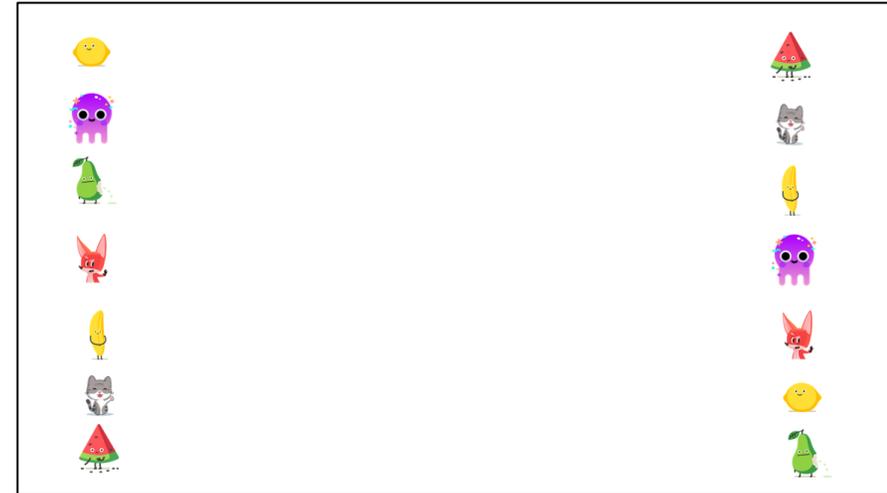
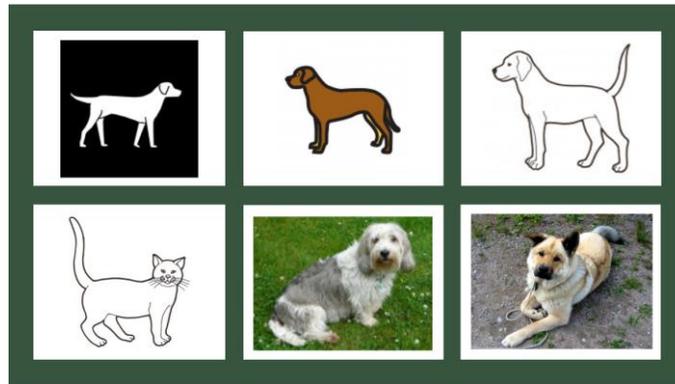
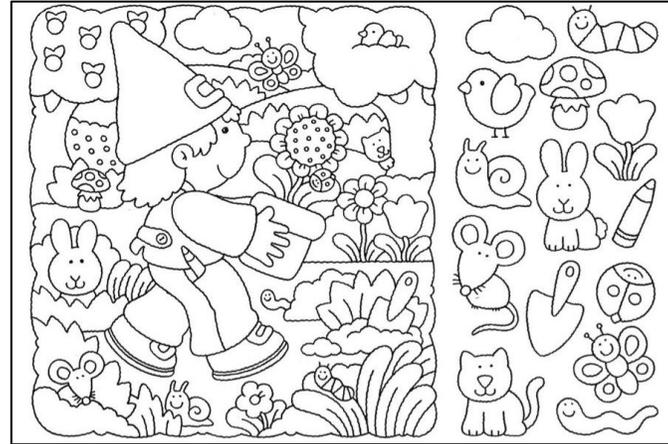
- We have used different powerpoint slides and animations and ready-made online games where objects move in different directions on the screen
- www.papunet.fi
 - Good tasks for evaluating eye movements
 - The animal or vehicle chosen by the child moves in a different directions on the screen
- Challenges 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?
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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



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?

2/2

- 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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@hetkiavalterissa



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Thank you!

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